SPEC SEAL

Seals & O-rings Specialist

C10 11 04

MASTER CATALOGUE

• HYDRAULIC SEALS

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คำนำ

นับเป็นเวลาเกือบ 2 ทศวรรษ ที่ **บริษัท สเป็คซีล จำกัด** ได้รวมรวบความรู้และสะสมประสบการณ์อันยาวนานในเรื่องของซีล รวมถึงรักษามาตรฐานอันสูงสุดเพื่อประโยชน์ของผู้ต้องการใช้ผลิตภัณฑ์ซีลอย่างแท้จริง

แคตตาล็อกซีลไฮโดรลิคเล่มนี้จึงถูกบรรจงทำขึ้นจากประสบการณ์ที่ได้สะสมมาโดยเราได้เรียบเรียงตามประเภทของซีลในรูปแบบที่ท่านสามารถนำไปใช้งานได้ง่ายยิ่งขึ้น อีกทั้งสเป็คซีลได้ถ่ายทอดประสบการณ์จากการทำงานในวงการอุตสาหกรรม ซึ่งได้พบเจอปัญหาต่าง ๆ ได้ตอบข้อสงสัยและแก้ไขปัญหาให้ลูกค้า ความรู้เหล่านี้ได้ถูกรวบรวมไว้ในคอลัมน์ Q&A รวมถึงข้อแนะนำที่เป็นประโยชน์อย่างยิ่งในการสร้างกระบอกไฮโดรลิค อีกทั้งการใช้และการประกอบซีลที่ถูกต้องเพื่อยืดอายุการใช้งานของซีลให้ยาวนาน

สเป็คซีล มีความภาคภูมิใจในการจัดทำแคตตาล็อกซีลแต่ละประเภทให้ผู้ใช้ซีลได้ทำงานสะดวกขึ้น ซึ่งมีส่วนร่วมให้ธุรกิจของท่านประสบความสำเร็จ ผลักดันภาคอุตสาหกรรมไทยให้ก้าวหน้าเทียบเท่านานาประเทศ หากท่านมีข้อสงสัยหรือต้องการสอบถามข้อมูลเพิ่มเติมเกี่ยวกับซีล ท่านสามารถติดต่อได้โดยตรงที่สำนักงานขายทั้ง 4 สำนักงานของเรา

สเป็คซีลพร้อมที่จะช่วยแก้ปัญหาให้ท่าน..... ด้วยความปรารถนาดี

สเป็คซีล...ผู้เชี่ยวชาญด้านซีลและโอริง

Introduction

Specseal Company Limited is proud to be in the forefront of the seals and o-rings business in Thailand. Our growth is consistent based on advanced ideas and great concern towards customers' reguirements. We are reaching our 20 years in this field and that has made us the most reliable seal specialist that provides only superior value and rapid delivery and above all to have a better focus on product sourcing to full technical sales service supports.

As a result of our determination to continue to be the leader seal specialist , we have accomplished this completed and comprehensive **master catalogue of hydraulic seals** to fulfil our customers' need that no other seal companies in Thailand have ever attemted before. You will find detailed information on each individual seal. This valuable catalogue is designed to have an overview up-to-date containing various hydraulic seals which are being used in the Thai industry. Inside this catalogue, you will also find the most frequently asked questions regarding seals hydraulic in which we have specified in the Thai language in the Q&A column along with the 10 recommendations for design and manufacturing stage of the cylinder with use and care for fitting of seals for maximum satisfactory seal life.

If you are unable to find the seals you need, please contact your nearest Specseal sales office. We will be delighted to assist you in all aspects of seals.

We hope you enjoy discovering what is inside this catalogue as much as we enjoy serving you.

Specseal..... Your seals & o-rings specialist.

Hydraulic Seals

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Housing & installation data

Specified tolerances
Metric

Nominal sizes mm.		Shafts (outside diameter) units 0.001 mm.								Bores (inside diameters) units 0.001 mm.				
over	to	f8	f9	h8	h9	h10	h11	JS10	JS11	H8	H9	H10	H11	JS11
1.6	3	-6 -20	-6 -31	0 -14	0 -25	0 -40	0 -60	+20 -20	+30 -30	+14 0	+25 0	+40 0	+60 0	+30 -30
3	6	-10 -28	-10 -40	0 -18	0 -30	0 -48	0 -75	+24 -24	+37.5 -37.5	+18 0	+30 0	+48 0	+75 0	+37.5 -37.5
6	10	-13 -35	-13 -49	0 -22	0 -36	0 -58	0 -90	+29 -29	+45 -45	+22 0	+36 0	+58 0	+90 0	+45 -45
10	18	-16 -43	-16 -59	0 -27	0 -43	0 -70	0 -110	+35 -35	+55 -55	+27 0	+43 0	+70 0	+110 0	+55 -55
18	30	-20 -53	-20 -72	0 -33	0 -52	0 -84	0 -130	+42 -42	+65 -65	+33 0	+52 0	+84 0	+130 0	+65 -65
30	50	-25 -64	-25 -87	0 -39	0 -62	0 -100	0 -160	+50 -50	+80 -80	+39 0	+62 0	+100 0	+160 0	+80 -80
50	80	-30 -76	-30 -104	0 -46	0 -74	0 -120	0 -190	+60 -60	+95 -95	+46 0	+74 0	+120 0	+190 0	+95 -95
80	120	-36 -90	-36 -123	0 -54	0 -87	0 -140	0 -220	+70 -70	+110 -110	+54 0	+87 0	+140 0	+220 0	+110 -110
120	180	-43 -106	-43 -143	0 -63	0 -100	0 -160	0 -250	+80 -80	+125 -125	+63 0	+100 0	+160 0	+250 0	+125 -125
180	250	-50 -122	-50 -165	0 -72	0 -115	0 -185	0 -290	+92 -92	+145 -145	+72 0	+115 0	+185 0	+290 0	+145 -145
250	315	-56 -137	-56 -186	0 -81	0 -130	0 -210	0 -320	+105 -105	+160 -160	+81 0	+130 0	+210 0	+320 0	+160 -160
315	400	-62 -151	-62 -212	0 -89	0 -140	0 -230	0 -360	+115 -115	+180 -180	+89 0	+140 0	+230 0	+360 0	+180 -180
400	500	-68 -165	-68 -223	0 -97	0 -155	0 -250	0 -400	+125 -125	+200 -200	+97 0	+155 0	+250 0	+400 0	+200 -200
500	630	-76 -186	-76 -251	0 -110	0 -175	0 -280	0 -440	+140 -140	+220 -220	+110 0	+175 0	+280 0	+440 0	+220 -220
630	800	-80 -205	-80 -280	0 -125	0 -200	0 -320	0 -500	+160 -160	+250 -250	+125 0	+200 0	+320 0	+500 0	+250 -250

Inch

Nominal sizes in.		Shafts (outside diameter) units 0.001 in.								Bores (inside diameters) units 0.001 in.				
over	to	f8	f9	h8	h9	h10	h11	JS10	JS11	H8	H9	H10	H11	JS11
0.04	0.12	-0.3 -0.9	-0.3 -1.2	0 -0.6	0 -1.0	0 -1.6	0 -2.5	+0.8 -0.8	+1.3 -1.3	+0.6 0	+1.0 0	+1.6 0	+2.5 0	+1.3 -1.3
0.12	0.24	-0.4 -1.1	-0.4 -1.6	0 -0.7	0 -1.2	0 -1.8	0 -3.0	+0.9 -0.9	+1.5 -1.5	+0.7 0	+1.2 0	+1.8 0	+0.3 0	+1.5 -1.5
0.24	0.40	-0.5 -1.4	-0.5 -1.9	0 -0.9	0 -1.4	0 -2.2	0 -3.5	+1.1 -1.1	+1.8 -1.8	+0.9 0	+1.4 0	+2.2 0	+3.5 0	+1.8 -1.8
0.40	0.71	-0.6 -1.6	-0.6 -2.3	0 -1.0	0 -1.6	0 -2.8	0 -4.0	+1.4 -1.4	+2.0 -2.0	+1.0 0	+1.6 0	+2.8 0	+4.0 0	+2.0 -2.0
0.71	1.19	-0.8 -2.0	-0.8 -2.8	0 -1.2	0 -2.0	0 -3.5	0 -5.0	+1.8 -1.8	+2.5 -2.5	+1.2 0	+2.0 0	+3.5 0	+5.0 0	+2.5 -2.5
1.19	1.97	-1.0 -2.6	-1.0 -3.4	0 -1.6	0 -2.5	0 -4.0	0 -6.0	+2.0 -2.0	+3.0 -3.0	+1.6 0	+2.5 0	+4.0 0	+6.0 0	+3.0 -3.0
1.97	3.15	-1.2 -3.0	-1.2 -4.1	0 -1.8	0 -3.0	0 -4.5	0 -7.0	+2.3 -2.3	+3.5 -3.5	+1.8 0	+3.0 0	+4.5 0	+7.0 0	+3.5 -3.5
3.15	4.73	-1.4 -3.6	-1.4 -4.8	0 -2.2	0 -3.5	0 -5.0	0 -9.0	+2.5 -2.5	+4.5 -4.5	+2.2 0	+3.5 0	+5.0 0	+9.0 0	+4.5 -4.5
4.73	7.09	-1.6 -4.1	-1.6 -5.6	0 -2.5	0 -4.0	0 -6.0	0 -10.0	+3.0 -3.0	+5.0 -5.0	+2.5 0	+4.0 0	+6.0 0	+10.0 0	+5.0 -5.0
7.09	9.85	-2.0 -4.8	-2.0 -6.5	0 -2.8	0 -4.5	0 -7.0	0 -12.0	+3.5 -3.5	+6.0 -6.0	+2.8 0	+4.5 0	+7.0 0	+12.0 0	+6.0 -6.0
9.85	12.41	-2.2 -5.2	-2.2 -7.3	0 -3.0	0 -5.0	0 -8.0	0 -12.0	+4.0 -4.0	+6.0 -6.0	+3.0 0	+5.0 0	+8.0 0	+12.0 0	+6.0 -6.0
12.41	15.785	-2.5 -6.0	-2.5 -8.3	0 -3.5	0 -6.0	0 -9.0	0 -14.0	+4.5 -4.5	+7.0 -7.0	+3.5 0	+6.0 0	+9.0 0	+14.0 0	+7.0 -7.0
15.75	19.69	-2.8 -6.5	-2.8 -8.8	0 -4.0	0 -6.0	0 -10.0	0 -16.0	+5.0 -5.0	+8.0 -8.0	+4.0 0	+6.0 0	+10.0 0	+16.0 0	+8.0 -8.0
19.69	24.80	-3.0 -7.0	-3.0 -9.9	0 -4.3	0 -6.9	0 -11.0	0 -17.3	+5.5 -5.5	+8.7 -8.7	+4.3 0	+6.9 0	+11.0 0	+17.3 0	+8.7 -8.7
24.80	31.49	-3.1 -8.1	-3.1 -11.0	0 -4.9	0 -7.9	0 -12.6	0 -19.7	+6.3 -6.3	+9.8 -9.8	+4.9 0	+7.9 0	+12.6 0	+19.7 0	+9.8 -9.8

Tolerances extracted from BS 1916 & BS 4500 (ISO 286) with kind permission of British Standards Institution

Conversion Chart

Fractions	Decimals	Millimeters	Millimeters	Decimals	Fractions
1/64	.0156	.3969	13.0969	.5156	33/64
1/32	.0313	.7938	13.4938	.5313	17/32
3/64	.0469	1.1906	13.8906	.5469	35/64
1/16	.0625	1.5875	14.2875	.5625	9/16
5/64	.0781	1.9844	14.6844	.5781	37/64
3/32	.0938	2.3813	15.0813	.5938	19/32
7/64	.1094	2.7781	15.4781	.6094	39/64
1/8	.125	3.1750	15.8750	.625	5/8
9/64	.1406	3.5719	16.2719	.6406	41/64
5/32	.1563	3.9688	16.6688	.6563	21/32
11/64	.1719	4.3656	17.0656	.6719	43/64
3/16	.1875	4.7625	17.4625	.6875	11/16
13/64	.2031	5.1594	17.8594	.7031	45/64
7/32	.2188	5.5563	18.2563	.7188	23/32
15/64	.2344	5.9531	18.6531	.7344	47/64
1/4	.250	6.3500	19.0500	.750	3/4
17/64	.2656	6.7469	19.4469	.7656	49/64
9/32	.2813	7.1438	19.8438	.7813	25/32
19/64	.2969	7.5406	20.2406	.7969	51/64
5/16	.3125	7.9375	20.6375	.8125	13/16
21/64	.3281	8.3344	21.0344	.8281	53/64
11/32	.3438	8.7313	21.4313	.8438	27/32
23/64	.3594	9.1281	21.8281	.8594	55/64
3/8	.375	9.5250	22.2250	.875	7/8
25/64	.3906	9.9219	22.6219	.8906	57/64
13/32	.4063	10.3188	23.0188	.9063	29/32
27/64	.4219	10.7156	23.4156	.9219	59/64
7/16	.4375	11.1125	23.8125	.9375	15/16
29/64	.4531	11.5094	24.2094	.9531	61/64
15/32	.4688	11.9063	24.6063	.9688	31/32
31/64	.4844	12.3031	25.0031	.9844	63/64
1/2	.500	12.7000	25.4000	1.000	1

Compounds for Fluid Technology

Reference	Compound	Colour	Temp. (°c) min.	max.	Application	Characteristics	Products
a) PTFE							
SP-01	Virgin PTFE	White	-190	+230	- Chemical industry - Food industry	- High chemical resistance	- Back-up rings - Flexseals
SP-03	Virgin TFM	White	-190	+230	- Chemical industry - Food industry - Pharmaceutical industry	- High chemical resistance - High mechanical strength	- Ball valve seats - Flexseals
SP-11	Modified PTFE	Blue	-190	+230	- Low-duty hydraulic applications	- Improved wear resistance	- Glide rings - Flexseals
SP-12	Modified PTFE	Dark green	-190	+230	- Low-duty hydraulic applications	- Improved wear resistance	- Glide rings - Flexseals
SP-25	PTFE + 15% glass fiber	Dark green	-190	+290	- Medium-duty hydraulic applications	- High chemical resistance - High creep resistance - Electrical properties like virgin PTFE	- Glide rings - Back-up rings - Guide rings - Gaskets
SP-30	PTFE + 23% carbon + 2% graphite	Black	-190	+315	- Heavy mechanical stress - Water / oil hydraulics	- High wear and creep resistance	- Glide rings - Back-up rings
SP-31	PTFE + 15% carbon	Black	-190	+290	- Medium mechanical stress - Hard sealing surfaces - Water / oil emulsions	- Chemical resistance limited by carbon	- Flexseals
SP-33	PTFE + 25% carbon	Black	-190	+315	- Pneumatics	- High wear and creep resistance	- Guiding tapes
SP-42	PTFE + 15% glass fiber + 5% MoS_2	Grey	-190	+290	- Heavy mechanical stress - Hydraulics applications	- Extensive chemical stability - High wear resistance	- Glide rings - Wipers - Lip seals
SP-44	PTFE + 15% graphite	Black	-190	+230	- Low mechanical stress - Soft sealing surfaces	- Chemical resistance limited graphite	- Flexseals
SP-52	PTFE + 40% bronze	Brown	-156	+260	- Heavy mechanical stress - Hydraulics applications	- Outstanding wear and creep resistance	- Glide rings
SP-55	PTFE + 40% bronze	Green	-156	+260	- Heavy mechanical stress - Hydraulics applications	- Outstanding wear and creep resistance	- Glide rings
SP-67	PTFE + 10% ekonol	Beige	-260	+320	- Medium mechanical stress - Soft sealing surfaces - Rotary sealing	- Limited chemical resistance - Limited use in hot water	- Rotary glide rings - Lip seals - Flexseals
SP-68	PTFE + 50% stainless steel	Greyish	-190	+260	- Heavy mechanical stress - Applications in chemical industry	- Chemical resistance from stainless steel filler (AISI 316)	- Ball valve seats
SP-74	PTFE + 10% Carbon fiber	Greyish	-260	+310	- Water hydraulics - Seawater - Short strokes with high frequency	- Very good wear properties in water	- Glide rings - Flexseals
b) Plastic materials							
SP-83	72 Shore D PUR	Trans-parent Yellow	-20	+100	- High mechanical stress - Hydraulic applications	- High wear resistance	- Wipers - Glide rings
SP-314	UHMW - PE	White	-200	+80	- Food industry - Pneumatics	- Outstanding wear properties in water and air	- Guide rings - Glide rings - Flexseals

O-Ring compounds for PTFE

O-Ring-code	Compound base	Reference	Hardness (Shore A)	Temperature range -(°c)	+(°c)
1	NBR	NBR-70	70 ± 5	30	110
2	FPM	FPM-75	75 ± 5	25	200
3	NBR	NBR-90	90 ± 5	20	110
4	EPDM	EPR-70	70 ± 5	40	150
5	SILICONE	S-70	70 ± 5	60	225

SPEC SEAL
Seals & O-rings Specialist

Piston Seals (Double Acting)

Design	Ref.	Material	Pressure (BAR)	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	KGD DAS	NBR-Polyester-POM	350	-30 +120	0.5	●		12
	TPM, SPS TPL, TPS/G	NBR-Polyester-POM	350	-30 +120	0.5	●		12
	MHM	NBR-Polyester-POM	350	-30 +120	0.5	●		12
	H-780	NBR-Polyester-POM	400	-30 +100	0.5	●		18
	DAS	NBR-Polyester-POM	350	-30 +120	0.5		●	20
	SPS	NBR-Polyester-POM	350	-30 +120	0.5		●	20
	H-65	NBR-POM	200	-30 +100	0.5		●	21
	H-53	NBR-Polyester-POM	500	-30 +100	0.5		●	21
	TDE	NBR+Fabric-POM	450	-30 +120	0.5	●		24
	DPW/L	NBR+Fabric-POM	450	-30 +120	0.5	●	●	24, 28
	H-58	NBR+Fabric-POM	450	-30 +100	0.5	●	●	24, 28
	DPW	NBR+Fabric-POM	450	-30 +120	0.5		●	28
	SM	NBR+Fabric-POM	400	-30 +120	0.8	●		32
	SMM	NBR-POM	400	-30 +120	0.8	●		32
	PDE, DSM	NBR+Fabric-POM	700	-30 +120	0.5	●	●	34
	SP-55-211	PTFE+Bronze-O Ring	400	-40 +200	15	●	●	38
	KR	PU-NBR	400	-35 +110	0.5	●		44

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Piston Seals (Double Acting)

Design	Ref.	Material	Pressure (BAR)	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	GRC	PU - NBR	400	-35 +110	0.5	●		44
	H-754	PU - O Ring	350	-40 +110	1	●		48
	SP-11-8401	PTFE - O Ring	350	-40 +200	15	●	●	50
	SPGW	PTFE+Bronze - NBR - PA	500	-40 +120	1.5	●		54
	RGU	NBR	140 (210)	-25 +100	1	●		56
	HSD	NBR	140 (210)	-10 +80	1 (0.5)	●		58
	S-5000 PS1500	PTFE+Glass, PU - O Ring	350	-40 +110	1		●	60
	R-5100 PS1850	PTFE+Glass, PU - NBR	350	-40 +110	1		●	62
	H-755	PU - NBR	350	-40 +110	1		●	64
	H-770	PU - NBR	350	-40 +110	1		●	64
	TP	NBR - POM	350	-30 +120	1		●	66
	PSM	PU - NBR	350	-50 +105	0.5		●	70
	PSC PSP	Fluorotrel - O Ring	350	-50 +120	0.5		●	72
	PSU	PU Composite	350	-50 +105	0.5		●	74

Note : Packing used with back up ring can stand pressure show in ( ).

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Piston Seals (Double Acting)

KGD, DAS, TPM, SPS, TPL, TPS/G, MHM (Metric Size)

KGD, DAS

TPM, SPS, TPL, TPS/G

MHM

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR-Polyester-POM	350	-30 +120	0.5

- Good sealing effect, also suitable for holding cylinders.
- Capable of installation in closed grooves.
- Economic and efficient sealing solution.
- Simple snap installation.
- High resistance to gap extrusion.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5
250-320	10.0

(Metric Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
20.00	11.00	13.50	2.10	17.00	19.00	0.40	KGD 020-011	DAS 020-011	TPL 020-011
22.00	13.00	13.50	2.10	19.00	21.00	0.40		DAS 022-013	TPL 022-013
25.00	15.00	12.50	4.00	21.00	23.00	0.40		DAS 025-015/1	
25.00	15.00	12.50	4.00	22.00	24.00	0.40		DAS 025-015/2	TPM 098-059/S-ISO
25.00	15.00	16.40	6.35	21.45	23.50	0.40	KGD 025-015	DAS 025-015	TPM 098-059
25.00	16.00	13.50	2.10	22.00	24.00	0.40	KGD 025-016	DAS 025-016	TPL 025-016
25.00	17.00	8.00	4.00	22.10	24.00	0.40			H53-2249212
25.00	17.00	10.00	4.00	22.00	24.00	0.40			TPM 098-066-ISO
25.00	17.00	13.50	3.20	21.00	24.40	0.40			TPS/G 025-017
25.00	17.50	8.80	3.10	21.30	24.00	0.40			SPS 098-068
28.00	19.00	13.50	2.10	25.00	27.00	0.40		DAS 028-019	TPL 028-019
30.00	17.00	15.40	6.35	26.50	28.50	0.40	KGD 030-017		
30.00	21.00	13.50	2.10	27.00	29.00	0.40	KGD 030-021	DAS 030-021	TPL 030-021
30.00	22.00	13.50	3.20	26.00	29.40	0.40			TPS/G 030-022
32.00	22.00	10.00	5.00	28.50	31.00	0.40			H53-2249312
32.00	22.00	11.00	4.00	27.50	31.00	0.40			H65-2218110
32.00	22.00	12.50	4.00	29.00	31.00	0.40			TPM 125-086-ISO
32.00	22.00	15.50	2.60	28.00	31.00	0.40	KGD 032-022/A	DAS 032-022/1	TPL 032-022
32.00	22.00	16.40	6.35	28.50	30.50	0.40	KGD 032-022	DAS 032-022	TPM 125-086
32.00	24.00	10.00	4.00	29.00	31.00	0.40			TPM 125-094-ISO
32.00	24.00	15.50	3.20	28.00	31.40	0.40	KGD 032-024	DAS 032-024	TPS/G 032-024
35.00	25.00	15.50	2.60	31.00	34.00	0.40	KGD 035-025/A	DAS 035-025/1	TPL 035-025
35.00	25.00	16.40	6.35	31.40	33.50	0.40	KGD 035-025	DAS 035-025	TPM 137-098
35.00	27.00	15.50	3.20	31.00	34.40	0.40			TPS/G 035-027
36.00	26.00	15.50	2.60	32.00	35.00	0.40			TPL 036-026
40.00	24.00	18.40	6.35	35.40	38.50	0.40	KGD 040-024	DAS 040-024	TPM 157-094
40.00	26.00	15.50	2.60	36.00	39.00	0.40	KGD 040-026	DAS 040-026	TPL 040-026
40.00	30.00	10.00	5.00	36.50	39.00	0.40			H53-2249412
40.00	30.00	11.30	4.00	35.40	38.00	0.40			TPM 157-118/1D
40.00	30.00	12.50	4.00	36.00	38.00	0.40	KGD 040-030/A	DAS 040-030/1	
40.00	30.00	12.50	4.00	37.00	39.00	0.40	KGD 040-030/B	DAS 040-030/2	TPM 157-118/S-ISO
40.00	30.00	16.40	6.35	35.40	38.50	0.40	KGD 040-030	DAS 040-030	TPM 157-118
40.00	32.00	10.00	4.00	37.00	39.00	0.40			TPM 157-125-ISO
40.00	32.00	15.50	3.20	36.00	39.40	0.40	KGD 040-032	DAS 040-032	TPS/G 040-032
42.00	28.00	15.50	2.60	38.00	41.00	0.40		DAS 042-028	TPL 042-028
45.00	29.00	18.40	6.35	40.40	43.70	0.40		DAS 045-029	TPM 177-114
45.00	31.00	15.50	2.60	41.00	44.00	0.40	KGD 045-031	DAS 045-031	TPL 045-031
45.00	35.00	16.40	6.35	40.40	43.50	0.40	KGD 045-035	DAS 045-035	TPM 177-137
45.00	37.00	15.50	3.20	41.00	44.40	0.40			TPS/G 045-037
50.00	34.00	18.40	6.35	45.40	48.50	0.40	KGD 050-034	DAS 050-034	TPM 196-133

* For order processing, the computer code will be
e.g. CS 020-011 KGD, CS 020-011 DAS, CS 020-011 TPL

Compact Seal

(Metric Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
50.00	34.00	20.50	3.10	46.00	49.00	0.40	KGD 050-034/A	DAS 050-034/1	TPL 050-034
50.00	35.00	20.00	5.00	46.00	48.50	0.40			TPM 196-137/SK-ISO
50.00	38.00	20.50	4.20	46.00	49.40	0.40	KGD 050-038	DAS 050-038	TPS/G 050-038
50.00	40.00	11.30	4.00	45.40	49.00	0.40			TPM 196-157
50.00	40.00	12.50	4.00	47.00	49.00	0.40			TPM 196-157-ISO
55.00	39.00	18.40	6.35	50.36	53.50	0.40	KGD 055-039	DAS 055-039	TPM 216-153
55.00	39.00	20.50	3.10	51.00	54.00	0.40	KGD 055-039/A	DAS 055-039/1	TPL 055-039
55.00	43.00	20.50	4.20	51.00	54.40	0.40			TPS/G 055-043
55.00	45.00	11.30	4.00	50.50	54.00	0.40			SPS 216-177
55.00	45.00	12.50	4.00	52.00	54.00	0.40			TPM 216-177-ISO
56.00	40.00	20.50	3.10	52.00	55.00	0.40		DAS 056-040	TPL 056-040
60.00	44.00	18.40	6.35	55.40	58.50	0.40	KGD 060-044	DAS 060-044	TPM 236-173
60.00	44.00	20.50	3.10	56.00	59.00	0.40	KGD 060-044/A	DAS 060-044/1	TPL 060-044
60.00	45.00	23.00	-	-	-	0.40			MHM 236-177 P
60.00	48.00	20.50	4.20	56.00	59.40	0.40	KGD 060-048	DAS 060-048	TPS/G 060-048
63.00	47.00	18.40	6.35	58.40	61.50	0.40	KGD 063-047	DAS 063-047	TPM 248-185
63.00	47.00	19.40	6.35	58.40	61.50	0.40	KGD 063-047/B	DAS 063-047/2	TPM 248-185/2S
63.00	47.00	20.50	3.10	59.00	62.00	0.40	KGD 063-047/A	DAS 063-047/1	TPL 063-047
63.00	48.00	20.00	5.00	59.00	61.50	0.40			TPM 248-188-ISO
63.00	51.00	20.50	4.20	59.00	62.40	0.40	KGD 063-051	DAS 063-051	TPS/G 063-051
63.00	53.00	11.40	4.00	58.50	61.50	0.40			SPS 248-208
63.00	53.00	12.50	4.00	60.00	62.00	0.40			TPM 248-208-ISO
65.00	49.00	20.50	3.10	61.00	64.00	0.40	KGD 065-049	DAS 065-049	TPL 065-049
65.00	50.00	18.40	6.35	60.40	63.50	0.40	KGD 065-050	DAS 065-050	TPM 255-196
65.00	53.00	20.50	4.20	61.00	64.40	0.40			TPS/G 065-053
70.00	50.00	22.00	10.00	64.00	68.00	0.40			H53-0075112
70.00	50.00	22.40	6.35	64.20	68.30	0.40	KGD 070-050	DAS 070-050	TPM 275-196
70.00	54.00	20.50	3.10	66.00	69.00	0.40	KGD 070-054	DAS 070-054	TPL 070-054
70.00	55.00	20.00	5.00	66.00	69.00	0.40			TPM 275-216-ISO
70.00	55.00	23.00	-	-	-	0.40			MHM 275-216 P
70.00	58.00	20.50	4.20	66.00	69.40	0.40	KGD 070-058	DAS 070-058	TPS/G 070-058
75.00	55.00	22.00	10.00	69.00	73.00	0.40			H53-0075612
75.00	55.00	22.40	6.35	69.20	73.30	0.40	KGD 075-055	DAS 075-055	TPM 295-216
75.00	59.00	20.50	3.10	71.00	74.00	0.40		DAS 075-059	TPL 075-059
75.00	63.00	20.50	4.20	71.00	74.40	0.40			TPS/G 075-063
80.00	60.00	22.40	6.35	74.15	78.30	0.40	KGD 080-060	DAS 080-060	TPM 314-236
80.00	60.00	25.00	6.30	75.00	78.00	0.40			TPM 314-236-ISO
80.00	62.00	22.50	3.60	76.00	79.00	0.40	KGD 080-062	DAS 080-062	TPL 080-062
80.00	65.00	20.00	5.00	76.00	78.50	0.40			TPM 314-255-ISO
80.00	65.00	23.00	-	-	-	0.40			MHM 314-255 P

* For order processing, the computer code will be
e.g. CS 020-011 KGD, CS 020-011 DAS, CS 020-011 TPL

(Metric Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
80.00	66.00	22.50	5.20	76.00	79.40	0.40	KGD 080-066	DAS 080-066	TPS/G 080-066
80.00	70.00	11.30	4.00	75.50	78.50	0.40			SPS 314-275
85.00	65.00	22.40	6.35	79.15	83.30	0.40	KGD 085-065	DAS 085-065	TPM 334-255
90.00	70.00	22.00	10.00	84.00	88.00	0.40			H53-0075812
90.00	70.00	22.40	6.35	84.15	88.30	0.40	KGD 090-070	DAS 090-070	TPM 354-275
90.00	70.00	30.50	-	-	-	0.40			MHM 354-275 P
90.00	72.00	22.50	3.60	86.00	89.00	0.40	KGD 090-072	DAS 090-072	TPL 090-072
90.00	75.00	20.00	-	-	-	0.40			TPM 354-295 P
90.00	76.00	22.50	5.20	86.00	89.40	0.40	KGD 090-076	DAS 090-076	TPS/G 090-076
92.00	82.00	11.00	4.00	87.50	90.50	0.40			H65-2240410
92.00	82.00	13.00	6.40	88.00	90.30	0.40			MHM 362-322
95.00	75.00	22.40	6.35	89.15	93.30	0.40	KGD 095-075	DAS 095-075	TPM 374-295
100.00	75.00	22.40	6.35	93.13	98.00	0.40	KGD 100-075	DAS 100-075	TPM 393-295
100.00	80.00	22.00	10.00	94.00	98.00	0.40			H53-0083612
100.00	80.00	25.00	6.30	95.00	98.00	0.40	KGD 100-080		TPM 393-314-ISO
100.00	80.00	30.50	-	-	-	0.40			MHM 393-314 P
100.00	82.00	22.50	3.60	96.00	99.00	0.40	KGD 100-082	DAS 100-082	TPL 100-082
100.00	85.00	20.00	5.00	96.00	98.50	0.40			TPM 393-334-ISO
100.00	86.00	22.50	5.20	96.00	99.40	0.40	KGD 100-086	DAS 100-086	TPS/G 100-086
100.00	87.00	14.30	6.00	93.80	98.50	0.40			SPS 393-342
105.00	80.00	22.40	6.35	98.10	103.00	0.40	KGD 105-080	DAS 105-080	TPM 413-314
105.00	92.50	14.70	6.40	95.15	103.30	0.40			MHM 413-364
110.00	85.00	22.40	6.35	103.10	108.00	0.40	KGD 110-085	DAS 110-085	TPM 433-334
110.00	85.00	25.30	6.40	103.10	108.00	0.40			TPM 433-334/1
110.00	90.00	25.30	6.40	104.10	108.30	0.40			TPM 433-354-ISO
110.00	90.00	30.50	-	-	-	0.40			MHM 433-354 P
110.00	92.00	22.50	3.60	106.00	109.00	0.40	KGD 110-092	DAS 110-092	TPL 110-092
110.00	95.00	20.00	5.00	105.00	108.50	0.40			TPM 433-374-ISO
110.00	96.00	22.50	5.20	106.00	109.40	0.40	KGD 110-096	DAS 110-096	TPS/G 110-096
115.00	90.00	22.40	6.35	108.10	113.00	0.40	KGD 115-090	DAS 115-090	TPM 452-354
115.00	97.00	22.50	3.60	111.00	114.00	0.40		DAS 115-097	TPL 115-097
120.00	95.00	22.40	6.35	113.10	118.00	0.80	KGD 120-095	DAS 120-095	TPM 472-374
120.00	106.00	22.50	5.20	116.00	119.40	0.80	KGD 120-106	DAS 120-106	TPS/G 120-106-S
125.00	100.00	25.40	6.35	118.10	123.00	0.80	KGD 125-100	DAS 125-100	TPM 492-393
125.00	100.00	32.00	10.00	119.00	123.00	0.80			TPM 492-393-ISO
125.00	103.00	26.50	5.10	121.00	124.00	0.80		DAS 125-103	TPL 125-103
125.00	105.00	25.30	6.40	119.10	123.30	0.80			TPM 492-413
125.00	105.00	25.00	6.30	120.00	123.00	0.80			TPM 492-413-ISO
125.00	108.00	26.50	7.20	121.00	124.40	0.80	KGD 125-108	DAS 125-108	TPS/G 125-108
125.00	112.00	14.30	6.00	118.80	123.50	0.80			SPS 492-440

* For order processing, the computer code will be
e.g. CS 020-011 KGD, CS 020-011 DAS, CS 020-011 TPL

Compact Seal

(Metric Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
130.00	105.00	25.40	9.50	122.60	127.50	0.80	KGD 130-105	DAS 130-105	TPM 511-413
130.00	105.00	25.40	6.35	123.10	128.00	0.80	KGD 130-105/A	DAS 130-105/1	TPM 511-413/1
130.00	113.00	26.50	7.20	126.00	129.40	0.80		DAS 130-113	
135.00	110.00	25.00	12.70	128.00	133.00	0.80			H53-0091212
135.00	110.00	25.40	9.50	127.60	132.50	0.80	KGD 135-110	DAS 135-110	TPM 531-433
135.00	110.00	25.40	6.35	128.10	133.00	0.80	KGD 135-110/A	DAS 135-110/1	TPM 531-433/1
140.00	115.00	25.40	9.50	132.60	137.50	0.80	KGD 140-115	DAS 140-115	TPM 551-452
140.00	115.00	25.40	6.35	133.00	138.00	0.80	KGD 140-115/A	DAS 140-115/1	TPM 551-452/1
140.00	118.00	26.50	5.10	136.00	139.00	0.80		DAS 140-118	TPL 140-118
140.00	120.00	25.00	6.30	135.00	138.00	0.80			TPM 551-472-ISO
140.00	123.00	26.50	7.20	136.00	139.40	0.80		DAS 140-123	TPS/G 140-123
140.00	124.00	17.50	8.75	132.00	138.50	0.80			H65-0317710
145.00	120.00	25.40	9.50	137.60	142.50	0.80	KGD 145-120	DAS 145-120	TPM 570-472
145.00	120.00	25.40	6.35	138.30	142.95	0.80	KGD 145-120/A	DAS 145-120/1	TPM 570-472/1
150.00	125.00	25.00	12.70	143.00	148.00	0.80			H53-0091512
150.00	125.00	25.40	9.50	142.60	147.50	0.80	KGD 150-125	DAS 150-125	TPM 590-492
150.00	125.00	25.40	6.35	143.00	148.00	0.80	KGD 150-125/A	DAS 150-125/1	TPM 590-492/1
150.00	128.00	26.50	5.10	146.00	149.00	0.80		DAS 150-128	TPL 150-128
150.00	130.00	25.40	6.35	144.10	148.30	0.80			TPM 590-511-ISO
150.00	133.00	26.50	7.20	146.00	149.40	0.80		DAS 150-133	TPS/G 150-133-S
155.00	130.00	25.40	9.50	147.60	152.50	0.80	KGD 155-130	DAS 155-130	TPM 610-511
155.00	130.00	25.40	6.35	148.00	153.00	0.80	KGD 155-130/A	DAS 155-130/1	TPM 610-511/1
160.00	130.00	25.40	6.35	153.00	157.50	0.80	KGD 160-130	DAS 160-130	TPM 629-511
160.00	130.00	25.40	9.50	152.60	157.50	0.80	KGD 160-130/A	DAS 160-130/1	
160.00	135.00	25.40	9.50	152.60	157.50	0.80	KGD 160-135	DAS 160-135	TPM 629-531
160.00	130.00	32.00	10.00	154.00	158.00	0.80			TPM 629-531-ISO
160.00	138.00	26.50	5.10	156.00	159.00	0.80		DAS 160-138	TPL 160-138
160.00	140.00	25.00	6.30	155.00	158.00	0.80			TPM 629-551
160.00	140.00	25.00	12.50	151.40	158.50	0.80			H65-0315910
160.00	143.00	26.50	7.20	156.00	159.40	0.80		DAS 160-143	TPS/G 160-143-S
165.00	140.00	25.00	12.70	158.00	163.00	0.80			H53-1257612
165.00	140.00	25.40	9.50	157.60	162.50	0.80	KGD 165-140	DAS 165-140	TPM 649-551
165.00	145.00	25.40	6.40	159.15	163.30	0.80			MHM 649-570
170.00	140.00	25.40	6.40	162.95	167.90	0.80			MHM 669-551
170.00	145.00	25.40	12.70	161.70	167.10	0.80	KGD 170-145	DAS 170-145	TPM 669-570
170.00	148.00	26.50	5.10	166.00	169.00	0.80		DAS 170-148	TPL 170-148
175.00	150.00	25.40	12.70	166.70	172.10	0.80	KGD 175-150	DAS 175- 150	TPM 688-590
180.00	150.00	35.40	6.35	172.95	177.87	0.80		DAS 180-150	TPM 708-590
180.00	150.00	36.00	12.50	-	-	0.80			TPM 708-590-NF
180.00	155.00	25.40	12.70	171.70	177.10	0.80	KGD 180-155	DAS 180-155	TPM 708-610

* For order processing, the computer code will be
e.g. CS 020-011 KGD, CS 020-011 DAS, CS 020-011 TPL

(Metric Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
180.00	160.00	25.00	12.50	171.40	178.50	0.80			H65-0316010
180.00	163.00	26.50	7.20	176.00	179.40	0.80			TPS/G 180-163
185.00	160.00	25.40	12.70	176.70	182.10	0.80	KGD 185-160	DAS 185-160	TPM 728-629
190.00	165.00	25.40	12.70	181.70	187.00	0.80	KGD 190-165	DAS 190-165	TPM 748-649
190.00	170.00	30.50	6.40	182.90	187.90	0.80			MHM 748-669
195.00	170.00	25.40	12.70	186.70	192.00	0.80	KGD 195-170	DAS 195-170	TPM 767-669
200.00	170.00	30.00	15.00	192.00	197.00	0.80			H53-1270112
200.00	170.00	35.30	6.40	193.00	198.00	0.80			TPM 787-669
200.00	170.00	36.00	12.50	192.00	197.00	0.80			TPM 787-669-ISO
200.00	175.00	25.40	12.70	191.60	197.00	0.80	KGD 200-175	DAS 200-175	TPM 787-688
200.00	180.00	25.00	12.50	191.40	198.50	0.80			H65-0316910
200.00	180.00	31.50	9.20	196.00	199.40	0.80			TPS/G 200-180
210.00	185.00	25.40	12.70	201.60	207.00	0.80	KGD 210-185	DAS 210-185	TPM 826-728
220.00	190.00	30.00	15.00	212.00	217.00	0.80			H53-1714810
220.00	190.00	35.40	6.35	212.70	217.90	0.80		DAS 220-190	TPM 866-748
220.00	190.00	36.00	12.50	212.00	217.00	0.80			TPM 866-748-NF
220.00	195.00	25.40	12.70	211.60	217.00	0.80	KGD 220-195	DAS 220-195	TPM 866-767
230.00	205.00	25.40	12.70	221.60	227.00	0.80	KGD 230-205	DAS 230-205	TPM 905-807
240.00	215.00	25.40	12.70	231.60	237.00	0.80	KGD 240-215	DAS 240-215	TPM 944-846
250.00	220.00	30.00	15.00	242.00	247.00	0.80			H53-1264312
250.00	220.00	35.40	6.35	242.90	247.85	0.80	KGD 250-220	DAS 250-220	TPM 984-866
250.00	220.00	36.00	12.50	242.00	247.00	0.80			TPM 984-866b- ISO
250.00	225.00	25.40	12.70	241.60	247.00	0.80	KGD 250-225	DAS 250-225	TPM 984-886- ISO
250.00	225.00	31.50	6.60	246.00	249.00	0.80			H64-6601400
260.00	235.00	35.10	12.70	252.90	257.00	0.80			TPM 1024-925
280.00	250.00	30.00	15.00	272.00	274.00	0.80			H53-1261712
280.00	250.00	36.00	12.50	272.00	277.00	0.80			TPM 1102-984-NF
280.00	250.00	35.40	9.52	272.90	277.00	0.80			TPM 1102-984- ISO
320.00	290.00	36.00	12.50	312.00	317.00	0.80			TPM 1259-1141- ISO

* For order processing, the computer code will be
e.g. CS 020-011 KGD, CS 020-011 DAS, CS 020-011 TPL

Piston Seals (Double Acting)

H-780 (Metric Size)

H-780

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR-Polyester-POM	400	-30 +100	0.5

- A robust assembly designed specifically for one piece pistion.
- Extremely near resistant.
- Capable of working in medium duty application.
- Economic and efficient sealing designed.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5
250-320	10.0

(Metric Size)

Bore Dia.	Groove Dimensions			Reference	Reference	Bore Dia.	Groove Dimensions			Reference	Reference
D	d	L1	L2			D	d	L1	L2		
25.0	15.0	12.00	4.00	H780 025-015	5003710	90.0	70.0	22.40	6.35	H780 090-070	5000510
25.0	16.0	13.50	2.10	H780 025-016	5003810	90.0	76.0	22.50	5.20	H780 090-076	5005310
30.0	21.0	13.50	2.10	H780 030-021	5003910	95.0	75.0	22.40	6.35	H780 095-075	5000610
32.0	22.0	15.50	2.60	H780 032-022	5001420	100.0	75.0	22.40	6.35	H780 100-075	5001710
32.0	22.0	16.40	6.35	H780 032-022/1	5001410	100.0	80.0	25.00	6.35	H780 100-080	5004710
35.0	25.0	15.50	2.60	H780 035-025	5001520	100.0	82.0	22.50	3.60	H780 100-082	5004510
35.0	25.0	16.40	6.35	H780 035-025/1	5001510	100.0	86.0	22.50	5.20	H780 100-086	5005410
40.0	24.0	18.40	6.35	H780 040-024	5001310	105.0	80.0	22.40	6.35	H780 105-080	5001810
40.0	30.0	16.40	6.35	H780 040-030	5004010	110.0	85.0	22.40	6.35	H780 110-085	5001910
45.0	29.0	18.40	6.35	H780 045-029	5000710	115.0	90.0	22.40	6.35	H780 115-090	5002010
45.0	31.0	15.50	2.60	H780 045-031	5004110	120.0	95.0	22.40	6.35	H780 120-095	5002110
45.0	35.0	16.40	6.35	H780 045-035	5001610	125.0	100.0	25.40	6.35	H780 125-100	5002310
50.0	34.0	18.40	6.35	H780 050-034	5000810	130.0	105.0	25.40	6.35	H780 130-105	5002420
50.0	34.0	20.50	3.10	H780 050-034/1	5000820	130.0	105.0	25.40	9.50	H780 130-105/1	5002410
50.0	38.0	20.50	4.20	H780 050-038	5004810	135.0	110.0	25.40	9.50	H780 135-110	5002510
55.0	39.0	18.40	6.35	H780 055-039	5000910	140.0	115.0	25.40	6.35	H780 140-115	5002220
55.0	39.0	20.50	3.10	H780 055-039/1	5000920	140.0	115.0	25.40	9.50	H780 140-115/1	5002210
60.0	44.0	18.40	6.35	H780 060-044	5001010	145.0	120.0	25.40	9.50	H780 145-120	5002610
60.0	44.0	20.50	3.10	H780 060-044/1	5001020	150.0	125.0	25.40	9.50	H780 150-125	5002710
60.0	48.0	20.50	4.20	H780 060-048	5004910	155.0	130.0	25.40	9.50	H780 155-130	5002810
63.0	47.0	18.40	6.35	H780 063-047	5001110	160.0	130.0	25.40	9.50	H780 160-130	5004610
63.0	47.0	19.40	6.35	H780 063-047/1	5001120	160.0	135.0	25.40	9.50	H780 160-135	5005610
63.0	47.0	20.50	3.10	H780 063-047	5001130	165.0	140.0	25.40	9.50	H780 165-140	5002910
63.0	51.0	20.50	4.20	H780 063-051	5005010	170.0	145.0	25.40	12.70	H780 170-145	5003010
65.0	49.0	20.50	3.10	H780 065-049	5005510	175.0	150.0	25.40	12.70	H780 175-150	5003110
65.0	50.0	18.40	6.35	H780 065-050	5001210	180.0	155.0	25.40	12.70	H780 180-155	5003210
70.0	50.0	22.40	6.35	H780 070-050	5000210	185.0	160.0	25.40	12.70	H780 185-160	5003310
70.0	54.0	20.50	3.10	H780 070-054	5004210	190.0	165.0	25.40	12.70	H780 190-165	5003410
70.0	58.0	20.50	4.20	H780 070-058	5005110	195.0	170.0	25.40	12.70	H780 195-170	5003510
75.0	55.0	22.40	6.35	H780 075-055	5000310	200.0	175.0	25.40	12.70	H780 200-175	5003610
75.0	59.0	20.50	3.10	H780 075-059	5004310						
80.0	60.0	22.40	6.35	H780 080-060	5000110						
80.0	62.0	22.50	3.60	H780 080-062	5004410						
80.0	66.0	22.50	5.20	H780 080-066	5005210						
85.0	65.0	22.40	6.35	H780 085-065	5000410						

* For order processing, the computer code will be
e.g. CS 025-015-12/4 H780

Piston Seals (Double Acting)

DAS, SPS (Imperial Size)

(Size list on page 22)

DAS

SPS

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR-Polyester-POM	350	-30 +120	0.5

- Very compact design
- Easy assembly in one piece piston
- High wear resistance.
- Long life

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-230	7.5

Piston Seals (Double Acting)

H-65, H-53 (Imperial Size)

(Size list on page 22-23)

H-65

H-53

Type	Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
H-65	NBR-POM	200	-30 +120	0.5
H-53	NBR-Polyester-POM	500	-30 +100	0.5

- Very compact design
- Easy assembly in one piece piston
- High wear resistance.
- Long life

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-230	7.5

Compact Seal

(Imperial Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
25.40	17.45	8.71	3.17	21.06	23.80	0.40			H65-2221210
25.40	17.45	8.41	3.08	21.06	23.80	0.40		SPS 100-068	
26.97	19.05	7.92	1.47	22.86	26.36	0.40		SPS 106-075	
31.75	23.80	8.71	3.17	27.41	30.15	0.40			H65-2221310
31.75	23.80	8.41	3.08	27.41	30.15	0.40		SPS 125-094	
38.10	28.58	11.10	3.71	33.63	36.50	0.40		SPS 150-112	H65-2219610
44.45	28.57	19.05	6.35	39.87	43.12	0.40	DAS 1750-1125		
44.45	34.92	10.80	3.71	39.98	42.85	0.40		SPS 175-137	
44.45	34.92	12.45	6.13	41.60	43.44	0.40		SPS 175-137/1	
50.80	34.92	19.05	6.35	46.23	49.48	0.40	DAS 2000-1375	SPS 200-137	H53-6593410
50.80	41.28	11.10	3.81	46.28	49.20	0.40	DAS 2000-1625	SPS 200-162	H65-2224010
50.80	41.28	12.15	6.13	47.95	49.78	0.40		SPS 200-162/1	
53.97	38.10	19.05	6.35	49.40	52.70	0.40	DAS 2125-1500		
57.15	41.27	19.05	6.35	52.55	55.80	0.40		SPS 225-162	H53-6593510
57.15	47.63	11.10	3.81	52.71	55.55	0.40			H65-2221110
60.33	44.45	19.05	6.35	55.73	58.98	0.40	DAS 2375-1750	SPS 237-175	
60.33	50.80	10.80	3.71	55.75	58.72	0.40		SPS 237-200	
63.50	47.62	19.05	6.35	58.90	62.12	0.40	DAS 2500-1875	SPS 250-187	H53-6593610
63.50	50.80	16.21	6.13	58.93	62.48	0.40		SPS 250-200	
63.50	53.98	11.10	3.81	59.05	61.90	0.40		SPS 250-212	H65-2224110
63.50	53.97	11.10	5.80	59.00	62.12	0.40	DAS 2500-2125		
66.67	50.80	19.05	6.35	62.10	65.27	0.40	DAS 2625-2000		
69.85	50.80	23.80	6.35	64.06	68.20	0.40		SPS 275-200	H53-6593710
69.85	57.15	16.51	6.35	65.28	68.84	0.40		SPS 275-225	
69.85	60.33	11.10	3.81	65.41	68.25	0.40		SPS 275-237	H65-2219510
76.20	57.15	23.79	6.35	70.40	74.50	0.40	DAS 3000-2250	SPS 300-225	H53-1377612
76.20	60.32	19.39	6.13	70.41	75.18	0.40		SPS 300-237	
76.20	66.68	11.10	3.81	71.76	74.60	0.40		SPS 300-262	H65-2224210
82.55	63.50	23.80	6.35	76.78	81.03	0.40		SPS 325-250	H53-6593910
82.55	66.67	19.68	6.13	76.73	80.87	0.40		SPS 325-262	
82.55	73.03	11.10	3.81	78.11	80.95	0.40		SPS 325-287	H65-2219710
88.90	69.85	23.79	6.35	83.08	87.22	0.40	DAS 3500-2750	SPS 350-275	H53-0082412
88.90	72.39	19.68	7.37	83.08	87.88	0.40		SPS 350-285	
88.90	76.20	14.28	5.33	83.06	87.30	0.40		SPS 350-300	H65-0177610
95.25	76.20	23.80	6.35	89.41	93.55	0.40		SPS 375-300	
95.25	82.55	14.28	5.33	89.41	93.65	0.40		SPS 375-325	H65-0178810
101.60	82.55	23.80	6.35	95.76	99.90	0.40		SPS 400-325	H53-0082313
101.60	85.72	19.68	6.13	95.76	100.58	0.40		SPS 400-337	
101.60	88.90	14.28	5.33	95.76	100.00	0.40		SPS 400-350	H65-1172310
107.95	88.90	23.80	6.35	102.20	106.35	0.40			H53-0082211

* For order processing, the computer code will be e.g. CS 044.45-028.57-19.05/6.35 DAS (1750-1125),
CS 025.40-017.45-8.41/3.08 SPS, CS 025.40-017.45-8.71/3.17 H65

(Imperial Size)

Bore Dia.	Groove Dimensions						Reference	Reference	Reference
D	d	L1	L2	d1	d2	r max			
107.95	95.25	14.28	5.33	102.11	106.35	0.40			H65-0309210
114.30	88.90	31.75	6.35	107.49	112.47	0.40		SPS 450-350	H53-6294210
114.30	101.60	14.28	5.33	108.46	112.70	0.40			H65-0418910
120.65	107.95	14.28	5.33	114.81	119.05	0.80			H65-1155810
127.00	101.60	31.75	9.52	119.61	124.51	0.80		SPS 500-400	H53-6594310
127.00	107.95	24.46	6.13	121.20	125.98	0.80		SPS 500-425	
127.00	111.13	17.45	8.74	119.10	125.40	0.80			H65-1175410
133.35	117.47	17.45	8.74	125.43	131.75	0.80			H65-1173710
139.70	114.30	31.75	9.52	132.41	137.41	0.80			H53-6594410
139.70	123.83	17.45	8.74	131.78	138.10	0.80			H65-1173610
152.40	127.00	31.75	9.52	145.11	150.11	0.80		SPS 600-500	H53-6594510
152.40	133.35	25.40	12.70	145.08	150.80	0.80			H65-0300110
165.10	146.05	25.40	12.70	157.78	163.50	0.80			H65-0047010
177.80	158.75	25.40	12.70	170.48	176.20	0.80			H65-0314110
190.50	171.45	25.40	12.70	183.18	188.90	0.80			H65-0363410
203.20	184.15	25.40	12.70	195.88	201.60	0.80			H65-0045110
203.20	177.80	31.75	12.70	194.97	200.56	0.80		SPS 800-700	
228.60	209.55	25.40	12.70	221.28	227.00	0.80			H65-0045510

* For order processing, the computer code will be e.g. CS 044.45-028.57-19.05/6.35 DAS (1750-1125), CS 025.40-017.45-8.41/3.08 SPS, CS 025.40-017.45-8.71/3.17 H65

SPEC SEAL Seals & O-rings Specialist

Piston Seals (Double Acting)

TDE, DPW/L, H-58 (Metric Size)

TDE

DPW/L

H-58*

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR-Fabric-POM	450	-30 +120, (+100)*	0.5

- Designed for heavy hydraulic applications.
- Excellent sealing effect and abrasion resistance.
- Suitable for holding cylinder.
- Two pieces piston.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-280	7.5

(Metric Size)

Bore Dia.	Groove Dimensions					Reference	Reference
D	d	L1	L2	d1	d2		
25.00	12.00	12.40	6.35	21.45	23.75	TDE 098-047/D	
30.00	17.00	15.40	6.35	26.50	29.00	TDE 118-066	
32.00	19.00	15.40	6.35	28.40	30.90	TDE 125-075/D	
35.00	22.00	15.40	6.35	31.40	33.70	TDE 137-086	
40.00	24.00	18.40	6.35	35.40	38.70	TDE 157-094	
40.00	25.00	24.00	6.00	34.85	39.00	DPW 157-098/1L	H58-0472850
45.00	29.00	18.40	6.35	40.40	43.70	TDE 177-114	
50.00	30.00	25.40	6.35	44.30	48.30	TDE 196-118	
50.00	34.00	18.40	6.35	45.40	48.70	TDE 196-133	
50.00	35.00	24.00	6.00	44.85	48.50	DPW 196-137/1L	H58-0474650
55.00	39.00	18.40	6.35	50.40	53.70	TDE 216-153	
55.00	40.00	24.00	6.00	49.85	53.50	DPW 216-157/L	H58-0475050
60.00	40.00	31.00	7.00	53.85	58.50	DPW 236-157/1L	H58-0282050
60.00	44.00	18.40	6.35	55.40	58.70	TDE 236-173	
60.00	44.00	20.40	6.35	55.40	58.70	TDE 236-173/D	
63.00	43.00	31.00	7.00	56.85	61.50	DPW 248-169/L	H58-0646750
63.00	47.00	19.40	6.35	58.40	61.70	TDE 248-185	
63.00	48.00	24.00	6.00	57.85	61.50	DPW 248-188/L	H58-0205250
65.00	50.00	18.40	6.35	60.40	63.70	TDE 255-196	
65.00	50.00	24.00	6.00	59.85	63.50		H58-0383850
70.00	50.00	22.40	6.35	64.20	68.30	TDE 275-196	
70.00	50.00	25.40	6.35	64.20	68.30	TDE 275-196/D	
70.00	50.00	31.00	7.00	63.85	68.00	DPW 275-196/2L	H58-0294650
75.00	55.00	22.40	6.35	69.20	73.30	TDE 295-216	
75.00	55.00	25.40	6.35	69.20	73.30	TDE 295-216/D	
75.00	55.00	31.00	7.00	68.85	73.00		H58-0818650
75.00	56.00	24.40	6.35	69.20	73.30	TDE 295-220	
80.00	60.00	22.40	6.35	74.20	78.30	TDE 314-236	
80.00	60.00	25.40	6.35	74.20	78.40	TDE 314-236/D	
80.00	60.00	31.00	7.00	73.85	78.00	DPW 314-236/2L	H58-0294950
83.00	63.00	22.40	6.35	76.20	81.30	TDE 326-248	
85.00	65.00	22.40	6.35	79.20	83.30	TDE 334-255	
85.00	65.00	31.00	7.00	78.85	83.00		H58-0388650
90.00	70.00	22.40	6.35	84.20	88.30	TDE 354-275	
90.00	70.00	25.40	6.35	84.20	88.30	TDE 354-275/D	
90.00	70.00	31.00	7.00	83.85	88.00	DPW 354-275/1L	H58-0296050
95.00	75.00	22.40	6.35	89.20	93.30	TDE 374-295	
95.00	75.00	31.00	7.00	88.85	93.00		H58-0412750
100.00	75.00	22.00	6.45	93.24	98.00	TDE 393-295	H58-0034950
100.00	75.00	26.00	9.50	93.85	98.00		H58-0891650

* For order processing, the computer code will be
e.g. CS 025-012-12.4/6.35 TDE, CS 040-025-24/6 H58

Compact Seal

(Metric Size)

Bore Dia.	Groove Dimensions					Reference	Reference
D	d	L1	L2	d1	d2		
100.00	80.00	25.40	6.35	94.20	98.30	TDE 393-314	
100.00	80.00	31.00	7.00	93.85	98.00	DPW 393-314/L	H58-0295150
105.00	80.00	22.40	6.35	98.10	103.00	TDE 413-314	
105.00	80.00	38.00	9.50	98.85	103.00		H58-0413150
110.00	85.00	22.00	6.45	103.50	108.00	TDE 433-334/1	H58-1188250
110.00	85.00	25.00	6.45	103.50	108.00	TDE 433-334	H58-0820650
110.00	85.00	45.00	12.80	101.85	108.00		H58-2181350
110.00	90.00	25.40	6.35	104.10	108.30	TDE 433-354	
110.00	90.00	31.00	7.00	103.85	108.00	DPW 433-354/L	H58-0712450
115.00	90.00	22.40	6.35	108.10	113.00	TDE 452-354	
115.00	95.00	31.00	7.00	108.85	113.00		H58-0796450
120.00	95.00	22.40	6.35	113.10	118.00	TDE 472-374	
120.00	100.00	25.40	6.35	114.10	118.30	TDE 472-393	
120.00	100.00	31.00	7.00	113.85	118.00	DPW 472-393/L	H58-0296150
125.00	100.00	25.00	6.45	118.50	123.00	TDE 492-393	H58-1007450
125.00	100.00	32.40	6.35	118.10	123.00	TDE 492-393/1	
125.00	100.00	38.00	9.50	118.85	123.00	DPW 492-393/2L	H58-0418650
125.00	105.00	25.40	6.35	119.10	123.30	TDE 492-413	
130.00	104.00	38.00	9.50	123.85	128.00		H58-0244350
130.00	105.00	25.00	6.45	123.50	128.00	TDE 511-413	H58-0044850
135.00	110.00	25.40	6.35	128.10	133.00	TDE 531-433	
135.00	110.00	38.00	9.50	128.35	133.00		H58-0304350
140.00	115.00	25.00	6.45	133.50	138.00	TDE 551-452	H58-1008450
140.00	120.00	25.40	6.35	134.10	138.30	TDE 551-472	
140.00	120.00	31.00	7.00	133.85	138.00	DPW 551-472/L	H58-0250550
145.00	120.00	25.40	6.35	138.30	143.00	TDE 570-472	
145.00	125.00	31.00	7.00	138.85	143.00		H58-0640150
150.00	120.00	38.40	6.35	143.00	148.00	TDE 590-472	
150.00	120.00	44.00	9.50	143.85	148.00		H58-1289550
150.00	125.00	25.40	6.35	143.00	148.00	TDE 590-492	
150.00	125.00	38.00	6.35	143.50	148.00	DPW 590-492/1L	
155.00	130.00	25.40	6.35	148.00	153.00	TDE 610-511	
160.00	130.00	25.00	6.45	153.50	158.00	TDE 629-511	H58-1008250
160.00	135.00	38.00	9.50	153.85	158.00		H58-0080450
160.00	140.00	31.00	7.00	153.85	158.00	DPW 629-551/L	H58-0304650
170.00	140.00	25.40	6.35	163.00	168.00	TDE 669-551	
170.00	140.00	31.00	7.00	162.54	168.00		H58-1222250
170.00	150.00	31.00	7.00	163.85	168.00		H58-0303350
180.00	150.00	35.00	6.45	173.00	178.00	TDE 708-590	H58-0679850
180.00	160.00	31.00	7.00	173.85	178.00		H58-1283150

* For order processing, the computer code will be
e.g. CS 025-012-12.4/6.35 TDE, CS 040-025-24/6 H58

(Metric Size)

Bore Dia.	Groove Dimensions					Reference	Reference
D	d	L1	L2	d1	d2		
180.00	160.00	31.40	6.35	173.00	178.00	TDE 708-629	
190.00	160.00	35.40	6.35	183.00	188.00	TDE 748-629	
190.00	160.00	44.00	9.50	183.85	188.00		H58-0838450
200.00	170.00	35.40	6.35	193.00	198.00	TDE 787-669	
200.00	170.00	44.00	12.00	193.85	198.00		H58-0087150
200.00	175.00	38.00	9.50	193.85	198.00		H58-0838850
210.00	180.00	31.70	6.45	203.13	208.00		H58-1198450
210.00	180.00	32.40	6.35	202.70	208.00	TDE 826-708	
220.00	190.00	35.40	6.35	212.70	218.00	TDE 866-748	
220.00	200.00	31.00	7.00	213.85	218.00		H58-1056450
250.00	220.00	35.40	6.35	242.90	248.00	TDE 984-866	
250.00	220.00	44.00	12.00	243.85	248.00		H58-1056350
280.00	250.00	44.00	12.00	273.85	278.00		H58-1055550

* For order processing, the computer code will be
e.g. CS 025-012-12.4/6.35 TDE, CS 040-025-24/6 H58

SPEC SEAL
Seals & O-rings Specialist

Piston Seals (Double Acting)

DPW, DPW/L, H-58 (Imperial Size)

DPW

DPW/L

H-58*

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric+POM	450	-30 +120, (+100)*	0.5

- Designed for heavy hydraulic applications.
- Excellent sealing effect and abrasion resistance.
- Suitable for holding cylinder.
- Two pieces piston.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5

(Imperial Size)

Bore Dia.	Groove Dimensions					Reference	Reference
D	d	L1	L2	d1	d2		
25.40	15.87	11.88	6.35	22.42	24.48	DPW 100-062	
25.40	15.87	15.06	4.62	21.97	24.59	DPW 100-062/L	H58-1247650
31.75	19.05	15.87	6.35	28.22	30.68	DPW 125-075	
31.75	19.05	19.05	6.23	28.32	30.94	DPW 125-075/L	H58-0403750
34.92	22.22	19.05	6.23	31.52	34.11	DPW 137-087/L	
38.10	25.40	15.87	6.35	34.54	37.03	DPW 150-100	
38.10	25.40	19.05	6.23	34.67	37.29	DPW 150-100/L	H58-0422450
41.27	28.57	15.87	6.35	37.72	40.20	DPW 162-112	
44.45	28.57	19.05	6.35	39.88	43.13	DPW 175-112	
44.45	28.57	23.80	6.23	39.42	42.85	DPW 175-112/L	H58-0778250
47.62	31.75	23.80	6.35	42.65	46.61	DPW 187-125/LD	
50.80	34.92	19.05	6.35	46.23	49.48	DPW 200-137	H58-0639150
50.80	34.92	23.80	6.23	45.77	49.20	DPW 200-137/L	H58-0778450
53.97	38.10	19.05	6.35	49.38	52.68	DPW 212-150	
57.15	41.27	19.05	6.35	52.55	55.80	DPW 225-162	
57.15	41.27	23.80	6.23	52.12	55.55	DPW 225-162/L	H58-1432650
60.32	44.45	19.05	6.35	55.73	58.98	DPW 237-175	
60.32	44.45	23.80	6.23	55.30	58.72	DPW 237-175/L	H58-0939850
63.50	47.62	19.05	6.35	58.90	62.13	DPW 250-187	
63.50	47.62	23.80	6.23	58.47	61.90	DPW 250-187/L	H58-0867250
66.67	50.80	19.05	6.35	62.05	65.30	DPW 262-200	
66.67	50.80	23.80	6.23	61.67	65.07	DPW 262-200/L	H58-1371050
69.85	50.80	23.80	6.35	64.06	68.20	DPW 275-200	H58-0783250
69.85	50.80	30.15	6.23	63.04	68.25	DPW 275-200/L	H58-1369150
73.03	53.98	30.15	6.35	66.29	71.42		H58-0779650
76.20	57.15	23.80	6.35	70.41	74.55	DPW 300-225	H58-6502450
76.20	57.15	28.57	6.35	70.41	74.55	DPW 300-225/1	
76.20	57.15	30.15	6.23	69.39	74.60	DPW 300-225/L	H58-1098450
79.37	60.32	23.80	6.35	73.56	77.72	DPW 312-237	
82.55	63.50	23.80	6.35	76.73	80.87	DPW 325-250	H58-1154150
82.55	63.50	30.15	6.23	75.74	80.95	DPW 325-250/L	H58-0782450
85.72	66.67	25.40	6.35	78.99	84.12		H58-2199650
85.72	66.67	30.15	4.77	79.22	84.20	DPW 337-262/LD	
88.90	69.85	23.80	6.35	83.08	87.22	DPW 350-275	
88.90	69.85	30.15	6.23	82.09	87.30	DPW 350-275/L	H58-0437850
95.25	76.20	23.80	6.35	89.41	93.55	DPW 375-300	
95.25	76.20	30.15	6.23	88.44	93.65	DPW 375-300/L	H58-0410550
98.42	79.37	23.80	6.35	92.60	96.74	DPW 387-312	
98.43	79.38	30.15	6.35	91.69	96.82		H58-0295850
101.60	82.55	23.80	6.35	95.76	99.90	DPW 400-325	

* For order processing, the computer code will be
e.g. CS 025.4-015.87-11.88/6.35 DPW (100-062), CS 025.4-015.87-15.06/4.62 H58

Compact Seal

(Imperial Size)

Bore Dia.	Groove Dimensions					Reference	Reference
D	d	L1	L2	d1	d2		
101.60	82.55	30.15	6.23	94.79	100.00	DPW 400-325/L	H58-1407750
107.95	88.90	23.80	6.35	102.08	106.22	DPW 425-350	
107.95	88.90	30.15	6.35	101.22	106.35	DPW 425-350/L	H58-1128850
114.30	88.90	31.75	6.35	107.42	112.32	DPW 450-350	
114.30	88.90	38.10	6.35	107.42	112.32	DPW 450-350/1	
114.30	88.90	38.10	9.42	107.49	112.70	DPW 450-350/L	H58-0448850
120.65	95.25	31.75	6.35	113.74	118.64	DPW 475-375	H58-0038250
120.65	95.25	38.10	9.42	113.84	119.05	DPW 475-375/L	H58-1007050
127.00	101.60	31.75	6.35	120.09	124.99	DPW 500-400	
127.00	101.60	38.10	9.42	120.19	125.40	DPW 500-400/L	H58-0443050
133.35	107.95	31.75	6.35	126.41	131.32	DPW 525-425	
133.35	107.95	38.10	9.42	126.44	131.75	DPW 525-425/L	H58-0892250
139.70	114.30	31.75	6.35	132.77	137.67	DPW 550-450	
139.70	114.30	38.10	9.42	132.89	138.10	DPW 550-450/L	H58-0133250
146.05	120.65	31.75	6.35	139.06	143.99	DPW 575-475	
146.05	120.65	38.10	9.53	139.29	144.45		H58-1366950
152.40	127.00	31.75	6.35	145.44	150.34	DPW 600-500	H58-0557950
152.40	127.00	38.10	9.42	145.59	150.80	DPW 600-500/L	H58-1367050
158.75	133.35	38.10	9.53	151.99	157.15		H58-0083350
165.10	139.70	31.75	6.35	158.12	163.01	DPW 650-550	
165.10	139.70	38.10	9.53	158.39	163.50		H58-1164150
171.45	146.05	38.10	9.53	164.69	169.85		H58-1286150
177.80	152.40	31.75	6.35	170.79	175.69	DPW 700-600	
177.80	152.40	38.10	9.42	170.99	176.20	DPW 700-600/L	H58-1188850
190.50	158.75	47.63	9.53	183.90	188.90		H58-1255250
203.20	177.80	31.75	9.53	196.60	201.60		H58-0224350
228.60	196.85	47.63	9.53	222.00	227.00		H58-1266650
228.60	203.20	31.75	9.53	221.89	227.00		H58-1273750
254.00	228.60	31.75	9.53	247.40	252.40		H58-0697650

* For order processing, the computer code will be
e.g. CS 025.4-015.87-11.88/6.35 DPW (100-062), CS 025.4-015.87-15.06/4.62 H58

SPEC SEAL

Seals & O-rings Specialist

Piston Seals (Double Acting)

SM, SMM (Metric Size)

SM

SMM

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric-POM	400	-30 +120	0.8

- Excellent sealing effect in combination with good dynamic and static friction behavior.
- Good abrasion resistance.
- Closed or split installation groove.
- For medium duty application.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5

(Metric Size)

Bore Dia.	Groove Dimensions							Reference
D	d	L1	L2	d1	d2	d3	e	
25.0	17.0	13.5	3.2	21.0	24.4	14.0	2.1	SMM 025-017
30.0	22.0	13.5	3.2	26.0	29.4	19.0	2.1	SMM 030-022
32.0	24.0	15.5	3.2	28.0	31.4	21.0	3.1	SM 032-024
35.0	27.0	15.5	3.2	31.0	34.4	24.0	3.1	SM 035-027
40.0	32.0	15.5	3.2	36.0	39.4	29.0	3.1	SM 040-032
45.0	37.0	15.5	3.2	41.0	44.4	34.0	3.1	SM 045-037
50.0	38.0	20.5	4.2	46.0	49.4	-	-	SM 050-038
55.0	43.0	20.5	4.2	51.0	54.4	-	-	SM 055-043
60.0	48.0	20.5	4.2	56.0	59.4	-	-	SM 060-048
63.0	51.0	20.5	4.2	59.0	62.4	-	-	SM 063-051
65.0	53.0	20.5	4.2	61.0	64.4	-	-	SM 065-053
70.0	58.0	20.5	4.2	66.0	69.4	-	-	SM 070-058
75.0	63.0	20.5	4.2	71.0	74.4	-	-	SM 075-063
80.0	66.0	22.5	5.2	76.0	79.4	-	-	SMM 080-066
90.0	76.0	22.5	5.2	86.0	89.4	-	-	SM 090-076
100.0	86.0	22.5	5.2	96.0	99.4	-	-	SM 100-086
110.0	96.0	22.5	5.2	106.0	109.4	-	-	SM 110-096
120.0	106.0	22.5	5.2	116.0	119.4	-	-	SM 120-106
125.0	108.0	26.5	7.2	121.0	124.4	-	-	SM 125-108
140.0	123.0	26.5	7.2	136.0	139.4	-	-	SM 140-123
150.0	133.0	26.5	7.2	146.0	149.4	-	-	SM 150-133
160.0	143.0	26.5	7.2	156.0	159.4	-	-	SM 160-143
180.0	163.0	26.5	7.2	176.0	179.4	-	-	SM 180-163
200.0	180.0	31.5	9.2	196.0	199.4	-	-	SM 200-180
220.0	200.0	31.5	9.2	216.0	219.4	-	-	SM 220-200
250.0	230.0	31.5	9.2	246.0	249.4	-	-	SM 250-230

* For order processing, the computer code will be
e.g. CS 025-017 SMM

Piston Seals (Double Acting)

PDE, DSM (Metric & Imperial Size)

PDE, DSM

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric-POM	700	-30 +120	0.5

- Effective sealing during vibration and shock loading.
- High sealing efficiency.
- Extrusion resistance at high pressure.
- Two pieces piston.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5
250-360	10.0

(Metric Size)

Bore Dia.	Groove Dimensions					Reference (For order processing)	Reference	Reference
D	d	L1	L2	d1	d2			
45.00	29.00	32.00	6.40	38.70	43.80	CS 045-029 PDE	PDE 177-114/1	DSM 177-114/1A
50.00	34.00	32.00	6.40	43.70	48.80	CS 050-034 PDE	PDE 196-133/1	DSM 196-133/1A
55.00	40.00	32.00	6.40	48.70	52.80	CS 055-040 PDE	PDE 216-157/1	DSM 216-157/1A
60.00	44.00	32.00	6.40	53.70	57.80	CS 060-044 PDE	PDE 236-173/1	DSM 236-173/1A
63.00	47.00	32.00	6.40	56.70	60.80	CS 063-047 PDE	PDE 248-185/1	DSM 248-185/1A
65.00	49.00	32.00	6.35	58.70	62.80	CS 065-049 PDE		DSM 255-192/1A
70.00	50.00	35.00	9.50	62.60	67.50	CS 070-050 PDE	PDE 275-196/1	DSM 275-196/1A
75.00	55.00	35.00	9.50	67.50	72.50	CS 075-055 PDE	PDE 295-216/1	DSM 295-216/1A
80.00	60.00	35.00	9.50	72.60	77.50	CS 080-060 PDE	PDE 314-236/1	DSM 314-236/1A
80.00	64.00	32.00	9.52	72.62	77.50	CS 080-064 PDE		DSM 314-251/1A
85.00	65.00	35.00	9.50	77.60	82.50	CS 085-065 PDE	PDE 334-255/1	DSM 334-255/1A
90.00	70.00	35.00	9.50	82.50	87.70	CS 090-070 PDE	PDE 354-275/1	DSM 354-275/1A
90.00	74.00	32.00	9.52	82.87	87.80	CS 090-074 PDE		DSM 354-291/1A
95.00	75.00	35.00	9.50	87.60	92.50	CS 095-075 PDE	PDE 374-295/1	DSM 374-295/1A
100.00	80.00	35.00	9.50	92.60	97.50	CS 100-080 PDE	PDE 393-314/1	DSM 393-314/1A
105.00	85.00	35.00	9.52	97.60	102.50	CS 105-085 PDE		DSM 413-334/1A
110.00	85.00	45.00	12.70	101.70	107.30	CS 110-085 PDE	PDE 433-334/1	DSM 433-334/1A
110.00	90.00	35.00	9.50	102.70	107.50	CS 110-090 PDE	PDE 433-354/1	DSM 433-354/1A
115.00	90.00	45.00	12.70	106.70	112.30	CS 115-090 PDE	PDE 452-354/1	DSM 452-354/1A
120.00	95.00	45.00	12.70	111.80	117.30	CS 120-095 PDE	PDE 472-374/1	DSM 472-374/1A
120.00	100.00	35.00	9.50	112.80	117.50	CS 120-100 PDE	PDE 472-393/1	DSM 472-393/1A
125.00	100.00	45.00	12.70	116.80	122.30	CS 125-100 PDE	PDE 492-393/1	DSM 492-393/1A
130.00	105.00	45.00	12.70	121.80	127.30	CS 130-105 PDE	PDE 511-413/1	DSM 511-413/1A
130.00	110.00	35.00	9.50	122.80	127.50	CS 130-110 PDE	PDE 511-433/1	DSM 511-433/1A
135.00	110.00	45.00	12.70	126.80	132.30	CS 135-110 PDE	PDE 531-433/1	DSM 531-433/1A
140.00	115.00	45.00	12.70	131.70	137.30	CS 140-115 PDE	PDE 551-452/1	DSM 551-452/1A
140.00	120.00	35.00	9.50	132.80	137.30	CS 140-120 PDE	PDE 551-472/1	DSM 551-472/1A
145.00	120.00	45.00	12.70	136.70	142.30	CS 145-120 PDE	PDE 570-472/1	DSM 570-472/1A
150.00	125.00	45.00	12.70	141.70	147.30	CS 150-125 PDE	PDE 590-492/1	DSM 590-492/1A
160.00	135.00	45.00	12.70	151.70	157.10	CS 160-135 PDE	PDE 629-531/1	DSM 629-531/1A
165.00	135.00	45.00	12.70	158.00	162.10	CS 165-135 PDE		DSM 649-531/1A
170.00	140.00	45.00	12.70	163.00	167.80	CS 170-140 PDE	PDE 669-551/1	DSM 669-551/1A
180.00	155.00	45.00	12.70	171.70	177.10	CS 180-155 PDE	PDE 708-610/1	DSM 708-610/1A
185.00	160.00	45.00	12.70	176.70	182.10	CS 185-160 PDE	PDE 728-629/1	DSM 728-629/1A
190.00	165.00	45.00	12.70	181.70	187.10	CS 190-165 PDE	PDE 748-649/1	DSM 748-649/1A
200.00	175.00	45.00	12.70	191.70	197.10	CS 200-175 PDE	PDE 787-688/1	DSM 787-688/1A
210.00	185.00	45.00	12.70	201.70	207.10	CS 210-185 PDE	PDE 826-728/1	DSM 826-728/1A
220.00	195.00	45.00	12.70	211.70	217.10	CS 220-195 PDE	PDE 866-767/1	DSM 866-767/1A
230.00	205.00	45.00	12.70	221.70	227.10	CS 230-205 PDE	PDE 905-807/1	DSM 905-807/1A
240.00	215.00	45.00	12.70	231.70	237.10	CS 240-215 PDE	PDE 944-846/1	DSM 944-846/1A

Compact Seal

(Metric Size)

Bore Dia.	Groove Dimensions					Reference (For order processing)	Reference	Reference
D	d	L1	L2	d1	d2			
250.00	225.00	45.00	12.70	241.70	247.10	CS 250-225 PDE	PDE 984-886/1	DSM 984-886/1A
260.00	235.00	45.00	12.70	251.70	257.10	CS 260-235 PDE	PDE 1024-925/1	DSM 1024-925/1A
270.00	245.00	45.00	12.70	261.70	267.10	CS 270-245 PDE	PDE 1062-955/1	DSM 1062-955/1A
280.00	255.00	45.00	12.70	271.70	277.10	CS 280-255 PDE	PDE 1102-1004/1	DSM 1102-1004/1A
290.00	265.00	45.00	12.70	281.70	287.10	CS 290-265 PDE	PDE 1141-1043/1	DSM 1141-1043/1A
300.00	275.00	45.00	12.70	291.70	297.10	CS 300-275 PDE	PDE 1181-1082/1	DSM 1181-1082/1A
360.00	335.00	44.50	12.70	351.76	357.30	CS 360-335 PDE		DSM 1417-1318/1A

(Imperial Size)

Bore Dia.	Groove Dimensions					Reference (For order processing)	Reference
D	d	L1	L2	d1	d2		
63.50	47.62	31.75	6.35	57.25	61.30	CS 250-187 PDE	DSM 250-187/1A
92.07	73.02	34.92	9.52	84.66	89.60	CS 362-287 PDE	DSM 362-287/1A
95.25	76.20	34.92	9.52	87.86	92.80	CS 375-300 PDE	DSM 375-300/1A
101.60	82.55	34.92	9.52	94.20	99.10	CS 400-325 PDE	DSM 400-325/1A
114.30	88.90	44.45	12.70	106.12	111.60	CS 450-350 PDE	DSM 450-350/1A
127.00	101.60	44.45	12.70	118.80	124.30	CS 500-400 PDE	DSM 500-400/1A
139.70	114.30	44.45	12.70	131.47	137.00	CS 550-450 PDE	DSM 550-450/1A
152.40	127.00	44.45	12.70	144.15	149.70	CS 600-500 PDE	DSM 600-500/1A
177.80	152.40	44.45	12.70	169.50	175.10	CS 700-600 PDE	DSM 700-600/1A

SPEC SEAL

Seals & O-rings Specialist

PTFE Seal - 211

Piston Seals (Double Acting)

SP-55-211 (Metric & Imperial Size)

SP-55-211

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Bronze - O Ring	400	-40 +200	15

- No stick-slip effect.
- Suitable for non lubricating fluids depending on seal material.
- High wear resistance.
- Suitable for most hydraulic fluids.
- Available for all cylinder diameters up to 2.500 mm.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 3.75	2.0
5.50	3.0
7.75	4.0
10.50	5.5
12.25	7.0

Installation Dimensions

Series No.	Bore Dia. D			Groove Dia.	Groove Width.	Radius	Radial Clearance F max.*			O-Ring Cross-Section
	Standard Application	Light Application	Heavy-Duty Application	d	L	r1	100 Bar	200 Bar	400 Bar	
A	8 - 14.9	15 - 39.9	-	D - 4.9	2.2	0.4	0.30	0.20	0.15	1.78
B	15 - 39.9	40 - 79.9	-	D - 7.5	3.2	0.6	0.40	0.25	0.15	2.62
C	40 - 79.9	80 - 132.9	15 - 39.9	D - 11.0	4.2	1.0	0.40	0.25	0.20	3.53
D	80 - 132.9	133 - 329.9	40 - 79.9	D - 15.5	6.3	1.3	0.50	0.30	0.20	5.33
E	133 - 329.9	330 - 669.9	80 - 132.9	D - 21.0	8.1	1.8	0.60	0.35	0.25	7.00
F	330 - 669.9	670 - 999.9	133 - 329.9	D - 24.5	8.1	1.8	0.60	0.35	0.25	7.00
G	670 - 999.9	-	330 - 669.9	D - 28.0	9.5	2.5	0.70	0.50	0.30	8.40
H	> 1000			D - 38.0	13.8	3.0	1.00	0.70	0.60	12.00

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
8.0	3.1	2.2	006	SP-55-211-0080	S55044-0080	ER-39-820-8
10.0	5.1	2.2	009	SP-55-211-0100	S55044-0100	ER-39-820-10
12.0	7.1	2.2	011	SP-55-211-0120	S55044-0120	ER-39-820-12
15.0	7.5	3.2	109	SP-55-211-0150	S55044-0150	ER-39-820-15
16.0	8.5	3.2	109	SP-55-211-0160	S55044-0160	ER-39-820-16
18.0	10.5	3.2	111	SP-55-211-0180	S55044-0180	ER-39-820-18
20.0	12.5	3.2	112	SP-55-211-0200	S55044-0200	ER-39-820-20
22.0	14.5	3.2	113	SP-55-211-0220	S55044-0220	ER-39-820-22
24.0	16.5	3.2	114	SP-55-211-0240	S55044-0240	ER-39-820-24
25.0	17.5	3.2	115	SP-55-211-0250	S55044-0250	ER-39-820-25
25.4	17.9	3.2	115	SP-55-211-0254	S55044-0254	ER-39-820-25.4
28.0	20.5	3.2	117	SP-55-211-0280	S55044-0280	ER-39-820-28
28.5	21.0	3.2	117	SP-55-211-0285	S55044-0285	ER-39-820-28.5
30.0	22.5	3.2	118	SP-55-211-0300	S55044-0300	ER-39-820-30
31.7	24.2	3.2	119	SP-55-211-0317	S55044-0317	ER-39-820-31.7
32.0	24.5	3.2	119	SP-55-211-0320	S55044-0320	ER-39-820-32
35.0	27.5	3.2	121	SP-55-211-0350	S55044-0350	ER-39-820-35
36.0	28.5	3.2	122	SP-55-211-0360	S55044-0360	ER-39-820-36
38.0	30.5	3.2	123	SP-55-211-0380	S55044-0380	ER-39-820-38
39.0	31.5	3.2	124	SP-55-211-0390	S55044-0390	ER-39-820-39
40.0	29.0	4.2	216	SP-55-211-0400	S55044-0400	ER-39-820-40
42.0	31.0	4.2	217	SP-55-211-0420	S55044-0420	ER-39-820-42
44.5	33.5	4.2	219	SP-55-211-0445	S55044-0445	ER-39-820-44.5
45.0	34.0	4.2	219	SP-55-211-0450	S55044-0450	ER-39-820-45
48.0	37.0	4.2	221	SP-55-211-0480	S55044-0480	ER-39-820-48

PTFE Seal - 211

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
50.0	39.0	4.2	222	SP-55-211-0500	S55044-0500	ER-39-820-50
50.8	39.8	4.2	222	SP-55-211-0508	S55044-0508	ER-39-820-50.8
52.0	41.0	4.2	223	SP-55-211-0520	S55044-0520	ER-39-820-52
55.0	44.0	4.2	224	SP-55-211-0550	S55044-0550	ER-39-820-55
57.1	46.1	4.2	224	SP-55-211-0571	S55044-0571	ER-39-820-57.1
60.0	49.0	4.2	225	SP-55-211-0600	S55044-0600	ER-39-820-60
63.0	52.0	4.2	226	SP-55-211-0630	S55044-0630	ER-39-820-63
63.5	52.5	4.2	226	SP-55-211-0635	S55044-0635	ER-39-820-63.5
64.0	53.0	4.2	226	SP-55-211-0640	S55044-0640	ER-39-820-64
65.0	54.0	4.2	227	SP-55-211-0650	S55044-0650	ER-39-820-65
69.8	58.8	4.2	228	SP-55-211-0698	S55044-0698	ER-39-820-69.8
70.0	59.0	4.2	228	SP-55-211-0700	S55044-0700	ER-39-820-70
70.0	54.5	6.3	330	SP-55-211-0700D	S55042-0700	ER-39-819-70
75.0	64.0	4.2	230	SP-55-211-0750	S55044-0750	ER-39-820-75
76.2	65.2	4.2	230	SP-55-211-0762	S55044-0762	ER-39-820-76.2
80.0	64.5	6.3	333	SP-55-211-0800	S55044-0800	ER-39-820-80
80.0	59.0	8.1	58*7	SP-55-211-0800E	S55042-0800	ER-39-819-80
82.5	67.0	6.3	334	SP-55-211-0825	S55044-0825	ER-39-820-82.5
85.0	69.5	6.3	335	SP-55-211-0850	S55044-0850	ER-39-820-85
85.0	64.0	8.1	64*7	SP-55-211-0850E	S55042-0850	ER-39-819-85
89.0	73.5	6.3	336	SP-55-211-0890	S55044-0890	ER-39-820-89
90.0	74.5	6.3	336	SP-55-211-0900	S55044-0900	ER-39-820-90
90.0	69.0	8.1	68*7	SP-55-211-0900E	S55042-0900	ER-39-819-90
95.0	79.5	6.3	338	SP-55-211-0950	S55044-0950	ER-39-820-95
95.0	74.0	8.1	73*7	SP-55-211-0950E	S55042-0950	ER-39-819-95
100.0	84.5	6.3	339	SP-55-211-1000	S55044-1000	ER-39-820-100
100.0	79.0	8.1	79*7	SP-55-211-1000E	S55042-1000	ER-39-819-100
101.6	86.1	6.3	340	SP-55-211-1016	S55044-1016	ER-39-820-101.6
105.0	89.5	6.3	341	SP-55-211-1050	S55044-1050	ER-39-820-105
105.0	84.0	8.1	83*7	SP-55-211-1050E	S55042-1050	ER-39-819-105
110.0	94.5	6.3	343	SP-55-211-1100	S55044-1100	ER-39-820-110
110.0	89.0	8.1	89*7	SP-55-211-1100E	S55042-1100	ER-39-819-110
114.3	98.8	6.3	344	SP-55-211-1143	S55044-1143	ER-39-820-114.3
115.0	99.5	6.3	344	SP-55-211-1150	S55044-1150	ER-39-820-115
115.0	94.0	8.1	94*7	SP-55-211-1150E	S55042-1150	ER-39-819-115
120.0	104.5	6.3	346	SP-55-211-1200	S55044-1200	ER-39-820-120
120.0	99.0	8.1	99*7	SP-55-211-1200E	S55042-1200	ER-39-819-120
125.0	109.5	6.3	347	SP-55-211-1250	S55044-1250	ER-39-820-125
125.0	104.0	8.1	101*7	SP-55-211-1250E	S55042-1250	ER-39-819-125
127.0	111.5	6.3	348	SP-55-211-1270	S55044-1270	ER-39-820-127

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
130.0	114.5	6.3	349	SP-55-211-1300	S55044-1300	ER-39-820-130
130.0	109.0	8.1	106*7	SP-55-211-1300E	S55042-1300	ER-39-819-130
132.0	116.5	6.3	350	SP-55-211-1320	S55044-1320	ER-39-820-132
133.0	112.0	8.1	425	SP-55-211-1330	S55044-1330	ER-39-820-133
135.0	114.0	8.1	425	SP-55-211-1350	S55044-1350	ER-39-820-135
140.0	119.0	8.1	426	SP-55-211-1400	S55044-1400	ER-39-820-140
145.0	124.0	8.1	428	SP-55-211-1450	S55044-1450	ER-39-820-145
150.0	129.0	8.1	430	SP-55-211-1500	S55044-1500	ER-39-820-150
154.0	133.0	8.1	431	SP-55-211-1540	S55044-1540	ER-39-820-154
155.0	134.0	8.1	431	SP-55-211-1550	S55044-1550	ER-39-820-155
160.0	139.0	8.1	433	SP-55-211-1600	S55044-1600	ER-39-820-160
165.0	144.0	8.1	434	SP-55-211-1650	S55044-1650	ER-39-820-165
170.0	149.0	8.1	436	SP-55-211-1700	S55044-1700	ER-39-820-170
175.0	154.0	8.1	437	SP-55-211-1750	S55044-1750	ER-39-820-175
180.0	159.0	8.1	438	SP-55-211-1800	S55044-1800	ER-39-820-180
190.0	169.0	8.1	439	SP-55-211-1900	S55044-1900	ER-39-820-190
200.0	179.0	8.1	441	SP-55-211-2000	S55044-2000	ER-39-820-200
210.0	189.0	8.1	443	SP-55-211-2100	S55044-2100	ER-39-820-210
220.0	199.0	8.1	444	SP-55-211-2200	S55044-2200	ER-39-820-220
230.0	209.0	8.1	445	SP-55-211-2300	S55044-2300	ER-39-820-230
240.0	219.0	8.1	446	SP-55-211-2400	S55044-2400	ER-39-820-240
250.0	229.0	8.1	447	SP-55-211-2500	S55044-2500	ER-39-820-250
260.0	239.0	8.1	447	SP-55-211-2600	S55044-2600	ER-39-820-260
270.0	249.0	8.1	448	SP-55-211-2700	S55044-2700	ER-39-820-270
280.0	259.0	8.1	449	SP-55-211-2800	S55044-2800	ER-39-820-280
290.0	269.0	8.1	450	SP-55-211-2900	S55044-2900	ER-39-820-290
300.0	279.0	8.1	451	SP-55-211-3000	S55044-3000	ER-39-820-300
310.0	289.0	8.1	451	SP-55-211-3100	S55044-3100	ER-39-820-310
320.0	299.0	8.1	452	SP-55-211-3200	S55044-3200	ER-39-820-320
330.0	305.5	8.1	453	SP-55-211-3300	S55044-3300	ER-39-820-330
340.0	315.5	8.1	453	SP-55-211-3400	S55044-3400	ER-39-820-340
350.0	325.5	8.1	454	SP-55-211-3500	S55044-3500	ER-39-820-350
360.0	335.5	8.1	455	SP-55-211-3600	S55044-3600	ER-39-820-360
370.0	345.5	8.1	456	SP-55-211-3700	S55044-3700	ER-39-820-370
380.0	355.5	8.1	457	SP-55-211-3800	S55044-3800	ER-39-820-380
390.0	365.5	8.1	457	SP-55-211-3900	S55044-3900	ER-39-820-390
400.0	375.5	8.1	458	SP-55-211-4000	S55044-4000	ER-39-820-400
410.0	385.5	8.1	459	SP-55-211-4100	S55044-4100	ER-39-820-410
420.0	395.5	8.1	460	SP-55-211-4200	S55044-4200	ER-39-820-420
430.0	405.5	8.1	461	SP-55-211-4300	S55044-4300	ER-39-820-430

PTFE Seal - 211

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
440.0	415.5	8.1	461	SP-55-211-4400	S55044-4400	ER-39-820-440
450.0	425.5	8.1	462	SP-55-211-4500	S55044-4500	ER-39-820-450
460.0	435.5	8.1	463	SP-55-211-4600	S55044-4600	ER-39-820-460
470.0	445.5	8.1	464	SP-55-211-4700	S55044-4700	ER-39-820-470
480.0	455.5	8.1	464	SP-55-211-4800	S55044-4800	ER-39-820-480
490.0	465.5	8.1	465	SP-55-211-4900	S55044-4900	ER-39-820-490
500.0	475.5	8.1	466	SP-55-211-5000	S55044-5000	ER-39-820-500
510.0	485.5	8.1	467	SP-55-211-5100	S55044-5100	ER-39-820-510
520.0	495.5	8.1	468	SP-55-211-5200	S55044-5200	ER-39-820-520
530.0	505.5	8.1	468	SP-55-211-5300	S55044-5300	ER-39-820-530
540.0	515.5	8.1	469	SP-55-211-5400	S55044-5400	ER-39-820-540
550.0	525.5	8.1	469	SP-55-211-5500	S55044-5500	ER-39-820-550
560.0	535.5	8.1	470	SP-55-211-5600	S55044-5600	ER-39-820-560
570.0	545.5	8.1	545.47*7	SP-55-211-5700	S55044-5700	ER-39-820-570
580.0	555.5	8.1	545.47*7	SP-55-211-5800	S55044-5800	ER-39-820-580
590.0	565.5	8.1	471	SP-55-211-5900	S55044-5900	ER-39-820-590
600.0	575.5	8.1	471	SP-55-211-6000	S55044-6000	ER-39-820-600
610.0	585.5	8.1	472	SP-55-211-6100	S55044-6100	ER-39-820-610
620.0	595.5	8.1	472	SP-55-211-6200	S55044-6200	ER-39-820-620
630.0	605.5	8.1	596.27*7	SP-55-211-6300	S55044-6300	ER-39-820-630
640.0	615.5	8.1	473	SP-55-211-6400	S55044-6400	ER-39-820-640
650.0	625.5	8.1	473	SP-55-211-6500	S55044-6500	ER-39-820-650
660.0	635.5	8.1	474	SP-55-211-6600	S55044-6600	ER-39-820-660
670.0	642.0	9.5	640*8.4	SP-55-211-6700	S55044-6700	ER-39-820-670
680.0	652.0	9.5	650*8.4	SP-55-211-6800	S55044-6800	ER-39-820-680
690.0	662.0	9.5	660*8.4	SP-55-211-6900	S55044-6900	ER-39-820-690
700.0	672.0	9.5	670*8.4	SP-55-211-7000	S55044-7000	ER-39-820-700
710.0	682.0	9.5	680*8.4	SP-55-211-7100	S55044-7100	ER-39-820-710

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. *SP-55 - 21 1 - 0080*

Seal ring material code

Seal profile

O ring material code

Bore diameter x 10

SPEC SEAL

Seals & O-rings Specialist

Piston Sealing Set

Piston Seals (Double Acting)

KR, GRC (Metric Size)

KR

GRC

Material	Pressure (Bar)	Temp. (°C)	Speed (m/s)
PU - NBR	400	-35 +110	0.5

- High wear resistance.
- Low friction.
- Stability of the sliding ring under rapid pressure changes guaranteed by the rectangular expander.
- High extrusion resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5
250-400	9.0

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Piston Dia. D1	Prefix No.	Reference (For order processing)	Reference (For order processing)
16.0	8.5	3.2	15.7			GRC 016-008.5-03.2
16.0	11.0	2.2	15.7			GRC 016-011-02.2
18.0	10.5	3.2	17.7			GRC 018-010.5-03.2
20.0	12.5	3.2	19.7	0020	KR 020-012.5-03.2	GRC 020-012.5-03.2
20.0	15.0	2.2	19.7			GRC 020-015-02.2
25.0	17.5	3.2	24.7	0025	KR 025-017.5-03.2	GRC 025-017.5-03.2
25.0	14.0	4.2	24.7			GRC 025-014-04.2
30.0	22.5	3.2	29.7	0030	KR 030-022.5-03.2	GRC 030-022.5-03.2
32.0	24.5	3.2	31.7	0032	KR 032-024.5-03.2	GRC 032-024.5-03.2
32.0	21.0	4.2	31.7	1032	KR 032-021-04.2	GRC 032-021-04.2
35.0	27.5	3.2	34.7	0035	KR 035-027.5-03.2	GRC 035-027.5-03.2
36.0	28.5	3.2	35.7			GRC 036-028.5-03.2
40.0	32.5	3.2	39.7	3040	KR 040-032.5-03.2	
40.0	29.0	4.2	39.7	0040	KR 040-029-04.2	GRC 040-029-04.2
40.0	24.5	6.3	39.6	1040	KR 040-024.5-06.3	
40.0	27.0	6.3	39.6	2040	KR 040-027-06.3	
45.0	34.0	4.2	44.7	0045	KR 045-034-04.2	GRC 045-034-04.2
45.0	32.0	6.3	44.6	1045	KR 045-032-06.3	
50.0	39.0	4.2	49.7	0050	KR 050-039-04.2	
50.0	34.5	6.3	49.6	1050	KR 050-034.5-06.3	GRC 050-034.5-06.3
50.0	37.0	6.3	49.6	2050	KR 050-037-06.3	
50.0	39.0	4.2	49.7			GRC 050-039-04.2
55.0	44.0	4.2	54.7	0055	KR 055-044-04.2	GRC 055-044-04.2
55.0	39.5	6.3	54.6	1055	KR 055-039.5-06.3	
58.0	45.0	6.3	57.6	0058	KR 058-045-06.3	
60.0	49.0	4.2	59.7	0060	KR 060-049-04.2	
60.0	44.5	6.3	59.6	1060	KR 060-044.5-06.3	GRC 060-044.5-06.3
60.0	49.0	4.2	59.7			GRC 060-049-04.2
63.0	52.0	4.2	62.7	0063	KR 063-052-04.2	
63.0	53.0	5.0	62.7	1063	KR 063-053-05	
63.0	47.5	6.3	62.6	2063	KR 063-047.5-06.3	GRC 063-047.5-06.3
63.0	50.0	6.3	62.6	3063	KR 063-050-06.3	
63.0	52.0	4.2	62.7			GRC 063-052-04.2
65.0	52.0	6.3	64.6	0065	KR 065-052-06.3	
65.0	54.0	4.2	64.7			GRC 065-054-04.2
65.0	54.0	6.3	64.6	1065	KR 065-054-06.3	
70.0	59.0	4.2	69.7	0070	KR 070-059-04.2	GRC 070-059-04.2
70.0	54.5	6.3	69.6	1070	KR 070-054.5-06.3	
70.0	57.0	6.3	69.6	2070	KR 070-057-06.3	
75.0	64.0	4.2	74.7	1075	KR 075-064-04.2	GRC 075-064-04.2

Piston Sealing Set

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Piston Dia. D1	Prefix No.	Reference (For order processing)	Reference (For order processing)
75.0	59.5	6.3	74.6	0075	KR 075-059.5-06.3	
75.0	62.0	6.3	74.6	2075	KR 075-062-06.3	
80.0	69.0	4.2	79.7	4080	KR 080-069-04.2	
80.0	64.5	6.3	79.6	0080	KR 080-064.5-06.3	GRC 080-064.5-06.3
80.0	66.5	6.3	79.6	1080	KR 080-066.5-06.3	
80.0	59.0	8.1	79.5	2080	KR 080-059-08.1	GRC 080-059-08.1
80.0	59.0	10.5	79.5	3080	KR 080-059-10.5	
85.0	69.5	6.3	84.6			GRC 085-069.5-06.3
85.0	71.5	6.3	84.6	0085	KR 085-071.5-06.3	
90.0	74.5	6.3	89.6	0090	KR 090-074.5-06.3	GRC 090-074.5-06.3
90.0	69.0	8.1	89.5	1090	KR 090-069-08.1	GRC 090-069-08.1
90.0	69.0	10.5	89.5	2090	KR 090-069-10.5	
95.0	79.5	6.3	94.6	0095	KR 095-079.5-06.3	GRC 095-079.5-06.3
100.0	84.5	6.3	99.6	0100	KR 100-084.5-06.3	GRC 100-084.5-06.3
100.0	86.5	6.3	99.6	1100	KR 100-086.5-06.3	
100.0	79.0	8.1	99.5	2100	KR 100-079-08.1	GRC 100-079-08.1
105.0	84.5	6.3	104.6	2105	KR 105-084.5-06.3	
105.0	89.5	6.3	104.6	0105	KR 105-089.5-06.3	GRC 105-089.5-06.3
110.0	94.5	6.3	109.6	0110	KR 110-094.5-06.3	GRC 110-094.5-06.3
110.0	89.0	8.1	109.5	1110	KR 110-089-08.1	GRC 110-089-08.1
110.0	89.0	10.5	109.5	2110	KR 110-089-10.5	
115.0	94.0	8.1	114.5	0115	KR 115-094-08.1	
115.0	99.5	6.3	114.6			GRC 115-099.5-06.3
120.0	104.5	6.3	119.6	0120	KR 120-104.5-06.3	GRC 120-104.5-06.3
120.0	99.0	10.5	119.5	1120	KR 120-099-10.5	
125.0	109.5	6.3	124.6	0125	KR 125-109.5-06.3	GRC 125-109.5-06.3
125.0	104.0	8.1	124.5	1125	KR 125-104-08.1	GRC 125-104-08.1
125.0	104.0	10.5	124.5	2125	KR 125-104-10.5	
130.0	114.5	6.3	129.6			GRC 130-114.5-06.3
140.0	119.0	10.5	139.5	0140	KR 140-119-10.5	
140.0	119.0	12.5	139.5	1140	KR 140-119-12.5	
140.0	119.0	8.1	139.5	2140	KR 140-119-08.1	GRC 140-119-08.1
145.0	124.0	8.1	144.5			GRC 145-124-08.1
150.0	129.0	8.1	149.5			GRC 150-129-08.1
150.0	129.0	10.5	149.5	0150	KR 150-129-10.5	
155.0	134.0	8.1	154.5			GRC 155-134-08.1
160.0	144.5	6.3	159.5			GRC 160-144.5-06.3
160.0	139.0	8.1	159.5	0160	KR 160-139-08.1	GRC 160-139-08.1
170.0	149.0	8.1	169.5			GRC 170-149-08.1
180.0	159.0	8.1	179.5	0180	KR 180-159-08.1	GRC 180-159-08.1

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Piston Dia. D1	Prefix No.	Reference (for order processing)	Reference (for order processing)
200.0	179.0	8.1	199.5	0200	KR 200-179-08.1	GRC 200-179-08.1
200.0	175.0	12.5	199.5	1200	KR 200-175-12.5	
220.0	199.0	8.1	219.5			GRC 220-199-08.1
250.0	225.5	8.1	249.5			GRC 250-225.5-08.1
250.0	229.0	8.1	249.5			GRC 250-229-08.1
320.0	299.0	8.1	319.5			GRC 320-299-08.1
320.0	295.5	8.1	319.5			GRC 320-295.5-08.1
400.0	375.5	8.1	399.4			GRC 400-375.5-08.1
400.0	370.0	12.5	399.4			GRC 400-370-12.5

SPEC SEAL
Seals & O-rings Specialist

Piston Sealing Set - H754

Piston Seals (Double Acting)

H-754 (Metric Size)

H-754

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU - O Ring	350	-40 +110	1

- Low break-out and operating friction levels.
- Rapid recovery of face after assembly.
- Compatible with most hydraulic fluids.
- Excellent wear resistance.
- Available in metric sizes.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
S	C
≤ 3.75	2.0
5.50	3.0
7.75	4.0
10.50	5.5
12.25	7.0

Piston Sealing Set - H754

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Reference (For order processing)	Reference (For order processing)
15.0	7.5	3.2	H754 015-007.5-3.2	4446410
16.0	8.5	3.2	H754 016-008.5-3.2	4400610
20.0	12.5	3.2	H754 020-012.5-3.2	4362310
25.0	17.5	3.2	H754 025-017.5-3.2	4339610
30.0	22.5	3.2	H754 030-022.5-3.2	4339710
32.0	24.5	3.2	H754 032-024.5-3.2	4339810
35.0	27.5	3.2	H754 035-027.5-3.2	4352410
40.0	29.0	4.2	H754 040-029.0-4.2	4339210
45.0	34.0	4.2	H754 045-034.0-4.2	4342310
50.0	34.5	6.3	H754 050-034.5-6.3	4427410
50.0	39.0	4.2	H754 050-039.0-4.2	4327110
55.0	39.5	6.3	H754 055-039.5-6.3	4355610
55.0	44.0	4.2	H754 055-044.0-4.2	4465510
60.0	44.5	6.3	H754 060-044.5-6.3	4390710
60.0	49.0	4.2	H754 060-049.0-4.2	4327010
63.0	47.5	6.3	H754 063-047.5-6.3	4431110
63.0	50.0	6.3	H754 063-050.0-6.3	4472310
63.0	52.0	4.2	H754 063-052.0-4.2	4326910
65.0	49.5	6.3	H754 065-049.5-6.3	4362010
65.0	52.0	6.3	H754 065-052.0-6.3	4384910
65.0	54.0	4.2	H754 065-054.0-4.2	4353010
70.0	57.0	6.3	H754 070-057.0-6.3	4390810
70.0	59.0	4.2	H754 070-059.0-4.2	4326810
75.0	64.0	4.2	H754 075-064.0-4.2	4339910
80.0	64.5	6.3	H754 080-064.5-6.3	4270910
85.0	69.5	6.3	H754 085-069.5-6.3	4564010
90.0	74.5	6.3	H754 090-074.5-6.3	4372710
100.0	84.5	6.3	H754 100-084.5-6.3	4339310
105.0	89.5	6.3	H754 105-089.5-6.3	4372510
110.0	94.5	6.3	H754 110-094.5-6.3	4419310
115.0	99.5	6.3	H754 115-099.5-6.3	4355810
120.0	99.0	8.1	H754 120-099.0-8.1	4535010
120.0	104.5	6.3	H754 120-104.5-6.3	4465410
125.0	104.0	8.1	H754 125-104.0-8.1	4376510
125.0	109.5	6.3	H754 125-109.5-6.3	4340010
130.0	109.0	8.1	H754 130-109.0-8.1	4402410
130.0	114.5	6.3	H754 130-114.5-6.3	4342210
135.0	114.0	8.1	H754 135-114.0-8.1	4535110
140.0	119.0	8.1	H754 140-119.0-8.1	4340110
140.0	124.5	6.3	H754 140-124.5-6.3	4499410
150.0	129.0	8.1	H754 150-129.0-8.1	4396910
160.0	139.0	8.1	H754 160-139.0-8.1	4340210
165.0	144.0	8.1	H754 165-144.0-8.1	4452210
170.0	149.0	8.1	H754 170-149.0-8.1	4340310
180.0	159.0	8.1	H754 180-159.0-8.1	4340410
190.0	169.0	8.1	H754 190-169.0-8.1	4342410
200.0	179.0	8.1	H754 200-179.0-8.1	4340510
210.0	189.0	8.1	H754 210-189.0-8.1	4351510
225.0	204.0	8.1	H754 225-204.0-8.1	4512810
240.0	230.0	8.1	H754 240-230.0-8.1	4553610
250.0	229.0	8.1	H754 250-229.0-8.1	4393710
300.0	279.0	8.1	H754 300-279.0-8.1	4572810

PTFE Seal - 8401

Piston Seals (Double Acting)

SP-11-8401 (Metric & Imperial Size)

SP-11-8401

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE - O Ring	350	-40 +200	15

- Compact groove dimensions and simple installation.
- Low friction without stick-slip.
- Resistance against wear and extrusion

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 50	3.0
50-140	4.0
140-200	6.0
200-310	8.0

Installation Dimensions

Series No.	Bore Dia. D		Groove Dia.	Groove Width.	Radius	Radial Clearance F max.*				O-Ring Cross-Section
	Standard Range	Extended Range	d	L	r1	20 Bar	100 Bar	200 Bar	350 Bar	
A	5 - 13.9	5 - 139.9	D - 2.9	2.4	0.4	0.10	0.10	0.08	0.05	1.78
B	14 - 24.9	8 - 259.9	D - 4.5	3.6	0.4	0.15	0.15	0.10	0.07	2.62
C	25 - 45.9	12 - 469.9	D - 6.2	4.8	0.6	0.25	0.20	0.15	0.08	3.53
D	46 - 124.9	20 - 669.9	D - 9.4	7.1	0.8	0.35	0.25	0.20	0.10	5.33
E	125 - 669.9	80 - 999.9	D - 12.2	9.5	0.8	0.50	0.30	0.25	0.15	7.00
F	670 - 999.9	125 - 999.9	D - 15.0	10.0	1.0	0.60	0.40	0.30	0.20	8.40

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width L	O-Ring No.	Reference (For order processing)
8.0	5.1	2.4	008	SP-11-8401-0080
10.0	7.1	2.4	010	SP-11-8401-0100
12.0	9.1	2.4	011	SP-11-8401-0120
15.0	10.5	3.6	110	SP-11-8401-0150
16.0	11.5	3.6	111	SP-11-8401-0160
18.0	13.5	3.6	112	SP-11-8401-0180
20.0	15.5	3.6	114	SP-11-8401-0200
22.0	17.5	3.6	115	SP-11-8401-0220
24.0	19.5	3.6	116	SP-11-8401-0240
25.0	18.8	4.8	209	SP-11-8401-0250
25.4	19.2	4.8	210	SP-11-8401-0254
28.0	21.8	4.8	212	SP-11-8401-0280
30.0	23.8	4.8	213	SP-11-8401-0300
32.0	25.8	4.8	214	SP-11-8401-0320
35.0	28.8	4.8	216	SP-11-8401-0350
40.0	33.8	4.8	219	SP-11-8401-0400
42.0	35.8	4.8	220	SP-11-8401-0420
45.0	38.8	4.8	222	SP-11-8401-0450
48.0	38.6	7.1	325	SP-11-8401-0480
50.0	40.6	7.1	326	SP-11-8401-0500
50.8	41.4	7.1	326	SP-11-8401-0508
52.0	42.6	7.1	326	SP-11-8401-0520
55.0	45.6	7.1	327	SP-11-8401-0550
60.0	50.6	7.1	329	SP-11-8401-0600
63.0	53.6	7.1	330	SP-11-8401-0630
65.0	55.6	7.1	330	SP-11-8401-0650
70.0	60.6	7.1	332	SP-11-8401-0700
75.0	65.6	7.1	333	SP-11-8401-0750
80.0	70.6	7.1	335	SP-11-8401-0800
85.0	75.6	7.1	337	SP-11-8401-0850

PTFE Seal - 8401

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width L	O-Ring No.	Reference (For order processing)
90.0	80.6	7.1	338	SP-11-8401-0900
95.0	85.6	7.1	340	SP-11-8401-0950
100.0	90.6	7.1	341	SP-11-8401-1000
105.0	95.6	7.1	343	SP-11-8401-1050
110.0	100.6	7.1	344	SP-11-8401-1100
115.0	105.6	7.1	346	SP-11-8401-1150
120.0	110.6	7.1	348	SP-11-8401-1200
125.0	112.8	9.5	425	SP-11-8401-1250
130.0	117.8	9.5	426	SP-11-8401-1300
135.0	122.8	9.5	427	SP-11-8401-1350
140.0	127.8	9.5	429	SP-11-8401-1400
145.0	132.8	9.5	430	SP-11-8401-1450
150.0	137.8	9.5	432	SP-11-8401-1500
155.0	142.8	9.5	433	SP-11-8401-1550
160.0	147.8	9.5	435	SP-11-8401-1600
165.0	152.8	9.5	437	SP-11-8401-1650
170.0	157.8	9.5	437	SP-11-8401-1700
175.0	162.8	9.5	438	SP-11-8401-1750
180.0	167.8	9.5	439	SP-11-8401-1800
190.0	177.8	9.5	441	SP-11-8401-1900
200.0	187.8	9.5	442	SP-11-8401-2000
210.0	197.8	9.5	444	SP-11-8401-2100
220.0	207.8	9.5	445	SP-11-8401-2200
230.0	217.8	9.5	446	SP-11-8401-2300
240.0	227.8	9.5	447	SP-11-8401-2400
250.0	237.8	9.5	447	SP-11-8401-2500
260.0	272.2	9.5	450	SP-11-8401-2600
270.0	257.8	9.5	449	SP-11-8401-2700
280.0	267.8	9.5	450	SP-11-8401-2800
300.0	287.8	9.5	451	SP-11-8401-3000

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

SPEC SEAL

Seals & O-rings Specialist

PTFE Seal Set - SPGW

Piston Seals (Double Acting)

SPGW (Metric Size)

SPGW

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Bronze - NBR - PA	500	-40 +120	1.5

- High extrusion resistance.
- Excellent sealing efficiency.
- High wear resistance.
- For closed or split installation groove.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-110	5.0
110-250	6.5
250-320	7.5

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Piston Dia. D1	Seal Height H	Reference (For order processing)
50.0	36.0	9.0	49.5	8.5	SPGW-050
60.0	46.0	9.0	59.5	8.5	SPGW-060
70.0	55.0	11.0	69.5	10.5	SPGW-070
80.0	65.0	11.0	79.5	10.5	SPGW-080
90.0	75.0	11.0	89.5	10.5	SPGW-090
100.0	85.0	12.5	99.5	12.0	SPGW-100
108.0	93.0	12.5	107.5	12.0	SPGW-108
110.0	95.0	12.5	109.5	12.0	SPGW-110
120.0	105.0	12.5	119.5	12.0	SPGW-120
125.0	102.0	16.0	124.5	15.5	SPGW-125
130.0	107.0	16.0	129.5	15.5	SPGW-130
140.0	117.0	16.0	139.5	15.5	SPGW-140
150.0	127.0	16.0	149.5	15.5	SPGW-150
160.0	137.0	16.0	159.5	15.5	SPGW-160
170.0	147.0	16.0	169.5	15.5	SPGW-170
180.0	157.0	16.0	179.5	15.5	SPGW-180
185.0	162.0	16.0	184.5	15.5	SPGW-185
190.0	167.0	16.0	189.5	15.5	SPGW-190
200.0	177.0	16.0	199.5	15.5	SPGW-200
210.0	187.0	16.0	209.5	15.5	SPGW-210
220.0	197.0	16.0	219.5	15.5	SPGW-220
225.0	202.0	16.0	224.5	15.5	SPGW-225
230.0	207.0	16.0	229.5	15.5	SPGW-230
240.0	217.0	16.0	239.5	15.5	SPGW-240
250.0	222.0	17.5	249.5	17.0	SPGW-250
260.0	232.0	17.5	259.5	17.0	SPGW-260
270.0	242.0	17.5	269.5	17.0	SPGW-270
272.0	244.0	17.5	271.5	17.0	SPGW-272
280.0	252.0	17.5	279.5	17.0	SPGW-280
287.0	259.0	17.5	286.5	17.0	SPGW-287
300.0	272.0	17.5	299.5	17.0	SPGW-300
320.0	292.0	17.5	319.5	17.0	SPGW-320

Rubber Seal - RGU

Piston Seals (Double Acting)

RGU (Metric Size)

RGU

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	140 (210)	-25 +100	1

- Double acting seal designed.
- Excellent frictional resistance.
- Twisting and distortion resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
40-80	2.5
80-90	3.0
90 >	4.0

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width		Piston Dia.	Reference (For order processing)
D	d	H	L	L1*	d1	
40.0	30.0	6.5	7.0	11.0	39.5	RGU-040
45.0	35.0	6.5	7.0	11.0	44.5	RGU-045
50.0	40.0	6.5	7.0	11.0	49.5	RGU-050
55.0	45.0	6.5	7.0	11.0	54.4	RGU-055
60.0	50.0	6.5	7.0	11.0	59.4	RGU-060
63.0	53.0	6.5	7.0	11.0	62.4	RGU-063
65.0	55.0	6.5	7.0	12.0	64.4	RGU-065
70.0	60.0	6.5	7.0	12.0	69.4	RGU-070
75.0	65.0	6.5	7.0	12.0	74.4	RGU-075
80.0	67.0	8.0	8.5	13.5	79.4	RGU-080
85.0	72.0	8.0	8.5	13.5	84.4	RGU-085
90.0	77.0	8.0	8.5	13.5	89.4	RGU-090
100.0	85.0	9.0	10.0	16.0	99.4	RGU-100

* L1 Groove for RGU used with back up ring can stand pressure up to 210 Bar

SPEC SEAL
Seals & O-rings Specialist

Rubber Seal - HSD

Piston Seals (Double Acting)

HSD (Metric Size)

HSD

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	140 (210)	-10 +80	1 (0.5)

- Double acting seal designed.
- Enable to minimize the size of pistons.
- Twisting and distortion resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
40-80	2.5
80-90	3.0
90 >	4.0

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width		Piston Dia.	Reference (For order processing)
D	d	H	L	L1*	d1	
20.0	14.0	1.9	2.4	4.4	19.5	HSD-20
25.0	17.0	2.6	3.2	5.2	24.5	HSD-25
30.0	22.0	2.6	3.2	5.2	29.5	HSD-30
32.0	24.0	2.6	3.2	5.2	31.5	HSD-32
35.0	27.0	2.6	3.2	5.2	34.5	HSD-35
40.0	32.0	2.6	3.2	5.2	39.5	HSD-40
40.0	30.0	3.4	4.0	7.0	39.5	HSD-40A
45.0	35.0	3.4	4.0	7.0	44.5	HSD-45
50.0	40.0	3.4	4.0	7.0	49.5	HSD-50
55.0	45.0	3.4	4.0	7.0	54.4	HSD-55
60.0	50.0	3.4	4.0	7.0	59.4	HSD-60
63.0	53.0	3.4	4.0	7.0	62.4	HSD-63
65.0	55.0	3.4	4.0	7.0	64.4	HSD-65
70.0	55.0	5.2	6.0	10.0	69.4	HSD-70
80.0	65.0	5.2	6.0	10.0	79.4	HSD-80
90.0	75.0	5.2	6.0	10.0	89.4	HSD-90
100.0	85.0	5.2	6.0	10.0	99.4	HSD-100

* L1 Groove for HSD used with back up ring can stand pressure up to 210 Bar

SPEC SEAL
Seals & O-rings Specialist

Piston Sealing Set - S5000

Piston Seals (Double Acting)

S-5000, PS1500 (Inch Size)

S-5000, PS1500

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Glass, PU - O- Ring	350	-40 +110	1

- Lubrication not required.
- Stick / Slip / Breakaway problems eliminated.
- Easy installation and removal.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

Piston Sealing Set - S5000

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Bore Dia. D	Groove Dia. d	Groove Width L	O-Ring No.	Reference (For order processing)
0.500	0.240	0.083	009	S-5000-008
0.625	0.365	0.083	011	S-5000-010
0.750	0.490	0.083	013	S-5000-012
1.000	0.740	0.083	017	S-5000-016
1.125	0.865	0.083	019	S-5000-018
1.250	0.990	0.083	021	S-5000-020
1.500	1.240	0.083	025	S-5000-024
1.625	1.235	0.122	123	S-5000-026
1.750	1.360	0.122	125	S-5000-028
2.000	1.606	0.130	129	S-5000-032
2.250	1.856	0.130	133	S-5000-036
2.500	2.106	0.130	137	S-5000-040
2.750	2.356	0.130	141	S-5000-044
3.000	2.606	0.130	145	S-5000-048
3.250	2.856	0.130	149	S-5000-052
3.500	3.106	0.130	151	S-5000-056
3.750	3.356	0.130	152	S-5000-060
4.000	3.606	0.130	153	S-5000-064
4.250	3.856	0.130	154	S-5000-068
4.500	4.106	0.130	155	S-5000-072
4.750	4.356	0.130	156	S-5000-076
5.000	4.606	0.130	157	S-5000-080
5.250	4.856	0.130	158	S-5000-084
5.500	5.106	0.130	159	S-5000-088
5.750	5.232	0.160	251	S-5000-092
6.000	5.482	0.160	253	S-5000-096
6.250	5.732	0.160	255	S-5000-100
6.500	5.982	0.160	257	S-5000-104
6.750	6.232	0.160	258	S-5000-108
7.000	6.482	0.160	259	S-5000-112
7.250	6.732	0.160	260	S-5000-116
7.500	6.982	0.160	261	S-5000-120
7.750	7.232	0.160	262	S-5000-124
8.000	7.482	0.160	263	S-5000-128
8.250	7.732	0.160	264	S-5000-132
8.500	7.982	0.160	265	S-5000-136

Piston Sealing Set - R5100

Piston Seals (Double Acting)

R-5100, PS1850 (Inch Size)

R5100, PS1850

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Glass, PU - NBR	350	-40 +110	1

- Bi-directional sealing.
- Easy installation and removal.
- Piston design simplified.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

Piston Sealing Set - R5100

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Square Ring No.	Reference (For order processing)
1.000	0.691	0.129	115	R-5100-016
1.250	0.941	0.129	119	R-5100-020
1.500	1.191	0.129	123	R-5100-024
1.750	1.441	0.129	127	R-5100-028
2.000	1.691	0.129	131	R-5100-032
2.250	1.941	0.129	135	R-5100-036
2.500	2.191	0.129	139	R-5100-040
2.750	2.441	0.129	143	R-5100-044
3.000	2.462	0.283	333	R-5100-048
3.250	2.712	0.283	335	R-5100-052
3.500	2.962	0.283	337	R-5100-056
3.750	3.212	0.283	339	R-5100-060
4.000	3.462	0.283	341	R-5100-064
4.250	3.712	0.283	343	R-5100-068
4.500	3.962	0.283	345	R-5100-072
4.750	4.212	0.283	347	R-5100-076
5.000	4.462	0.283	349	R-5100-080
5.250	4.504	0.378	425	R-5100-084
5.500	4.754	0.378	427	R-5100-088
5.750	5.004	0.378	429	R-5100-092
6.000	5.254	0.378	431	R-5100-096
6.500	5.754	0.378	435	R-5100-104
7.000	6.254	0.378	438	R-5100-112
7.500	6.754	0.378	440	R-5100-120
8.000	7.254	0.378	442	R-5100-128
8.500	7.754	0.378	444	R-5100-136
9.000	8.137	0.378	445	R-5100-144
9.500	8.637	0.378	446	R-5100-152
10.000	9.137	0.378	447	R-5100-160

Piston Sealing Set - H755

Piston Seals (Double Acting)

H-755, H-770 (Inch Size)

H-755

H-770

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU - NBR	350	-40 +110	1

- Low break-out and operating friction levels.
- Rapid recovery of face after assembly.
- Compatible with most hydraulic fluids.
- Excellent wear resistance.
- Ideal for use with wear rings.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

Extrusion Gap F		
Pressure	S>0.200	S<0.200
100 bar	0.030	0.025
160 bar	0.025	0.020
250 bar	0.020	0.015
350 bar	0.010	0.005

Chamfers	
S	C
0.154	0.100
0.269	0.150
0.373	0.200
0.431	0.200

Piston Sealing Set - H755

(Inch Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Reference (For order processing)	Reference
1.000	0.691	0.129	H755 - 1000	8910000
1.250	0.941	0.129	H755 - 1250	8910100
1.250	1.008	0.187	H770 - 1250	4554412
1.500	1.191	0.129	H755 - 1500	8910200
1.750	1.441	0.129	H755 - 1750	8910300
2.000	1.606	0.129	H755 - 2000/A	8913100
2.000	1.630	0.281	H770 - 2000	4553512
2.000	1.691	0.129	H755 - 2000	8910400
2.250	1.941	0.129	H755 - 2250	8910500
2.500	2.106	0.283	H755 - 2500/A	4439310
2.500	2.130	0.281	H770 - 2500	4490012
2.500	2.191	0.129	H755 - 2500	8910600
2.750	2.441	0.129	H755 - 2750	8910700
3.000	2.462	0.283	H755 - 3000	8910800
3.000	2.630	0.281	H770 - 3000	4349412
3.250	2.712	0.283	H755 - 3250	8910900
3.250	2.880	0.281	H770 - 3250	4349512
3.500	2.962	0.283	H755 - 3500	8911000
3.500	3.130	0.281	H770 - 3500	4349612
3.750	3.212	0.283	H755 - 3750	8911100
3.750	3.380	0.281	H770 - 3750	4349712
4.000	3.462	0.283	H755 - 4000	8911200
4.000	3.630	0.281	H770 - 4000	4349812
4.250	3.712	0.283	H755 - 4250	8911300
4.250	3.880	0.281	H770 - 4250	4349912
4.500	3.962	0.283	H755 - 4500	8911400
4.500	4.130	0.281	H770 - 4500	4350012
4.750	4.212	0.283	H755 - 4750	8911500
4.750	4.380	0.281	H770 - 4750	4350112
5.000	4.462	0.283	H755 - 5000	8911600
5.000	4.630	0.281	H770 - 5000	4350212
5.250	4.504	0.378	H755 - 5250	8911700
5.500	4.754	0.378	H755 - 5500	8911800
5.750	5.004	0.378	H755 - 5750	8913200
6.000	5.254	0.378	H755 - 6000	8911900
6.250	5.504	0.378	H755 - 6250	8912000
6.500	5.754	0.378	H755 - 6500	8912100
7.000	6.250	0.312	H755 - 7000/A	4394810
7.000	6.254	0.378	H755 - 7000	8912200
7.250	6.504	0.378	H755 - 7250	8912300
7.500	6.754	0.378	H755 - 7500	8912400
8.000	7.254	0.378	H755 - 8000	8912500
8.500	7.754	0.378	H755 - 8500	8912600
9.000	8.137	0.378	H755 - 9000	8912700
9.500	8.637	0.378	H755 - 9500	8912800
10.000	9.137	0.378	H755 -10000	8912900

Piston T - Seal

Piston Seals (Double Acting)

TP (Inch Size)

TP

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR - POM	350	-30 +120	1

- High extrusion resistance.
- Usable in standard o-ring groove.
- Non spiralling.
- Easy installation.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

Piston T - Seal

(Inch Size)

Nominal Size			Bore Dia.	Groove Dia.	Groove Width	Piston Dia.	O-Ring No.	Reference (For ordering)
OD	ID	S	D	d	L	d1		
3/8	3/16	3/32	.375 ±.001	.190 +.002-.000	.150 +.005-.000	.371 ±.001	106	TP-001
7/16	1/4	3/32	.437	.252	.150	.433	108	TP-002
1/2	5/16	3/32	.500	.315	.150	.496	109	TP-003
9/16	5/16	1/8	.562	.317	.185	.558	203	TP-004
5/8	3/8	1/8	.625	.380	.185	.621	204	TP-005
11/16	7/16	1/8	.687	.442	.185	.683	205	TP-006
3/4	1/2	1/8	.750	.505	.185	.746	206	TP-007
13/16	9/16	1/8	.812	.567	.185	.808	207	TP-008
7/8	5/8	1/8	.875	.630	.185	.871	208	TP-009
15/16	11/16	1/8	.937	.692	.185	.933	209	TP-010
1	3/4	1/8	1.001	.756	.185	.997	210	TP-011
1-1/16	13/16	1/8	1.063	.818	.185	1.059	211	TP-012
1-1/8	7/8	1/8	1.126	.881	.185	1.122	212	TP-013
1-3/16	15/16	1/8	1.188	.943	.185	1.184	213	TP-014
1-1/4	1	1/8	1.251	1.006	.185	1.247	214	TP-015
1-5/16	1-1/16	1/8	1.313	1.068	.185	1.309	215	TP-016
1-3/8	1-1/8	1/8	1.376	1.131	.185	1.372	216	TP-017
1-7/16	1-3/16	1/8	1.438	1.193	.185	1.434	217	TP-018
1-1/2	1-1/4	1/8	1.501	1.256	.185	1.497	218	TP-019
1-9/16	1-5/16	1/8	1.563	1.318	.185	1.559	219	TP-020
1-5/8	1-3/8	1/8	1.626	1.381	.185	1.622	220	TP-021
1-3/4	1-1/2	1/8	1.751	1.506	.185	1.747	222	TP-022
1-7/8	1-1/2	3/16	1.876	1.502	.280	1.872	325	TP-023
2	1-5/8	3/16	2.001	1.627	.280	1.997	326	TP-024
2-1/8	1-3/4	3/16	2.126	1.752	.280	2.122	327	TP-025
2-1/4	1-7/8	3/16	2.251	1.877	.280	2.247	328	TP-026
2-3/8	2	3/16	2.376	2.002	.280	2.372	329	TP-027
2-1/2	2-1/8	3/16	2.501	2.127	.280	2.497	330	TP-028
2-5/8	2-1/4	3/16	2.626	2.252	.280	2.620	331	TP-029
2-3/4	2-3/8	3/16	2.751 ±.002	2.377 +.003-.001	.280	2.745 ±.002	332	TP-030
2-7/8	2-1/2	3/16	2.876	2.502	.280	2.870	333	TP-031
3	2-5/8	3/16	3.001	2.627	.280	2.995	334	TP-032
3-1/8	2-3/4	3/16	3.126	2.752	.280	3.120	335	TP-033
3-1/4	2-7/8	3/16	3.251	2.877	.280	3.245	336	TP-034
3-1/2	3-1/8	3/16	3.502	3.128	.280	3.496	338	TP-035
3-5/8	3-1/4	3/16	3.627 ±.002	3.253 +.003-.001	.280	3.621 ±.002	339	TP-036
3-3/4	3-3/8	3/16	3.752	3.378	.280	3.746	340	TP-037
3-7/8	3-1/2	3/16	3.877	3.503	.280	3.871	341	TP-038
4	3-5/8	3/16	4.002	3.628	.280	3.996	342	TP-039
4-1/8	3-3/4	3/16	4.127	3.753	.280	4.121	343	TP-040

SPEC SEAL Seals & O-rings Specialist

Piston T - Seal

(Inch Size)

Nominal Size			Bore Dia.	Groove Dia.	Groove Width	Piston Dia.	O-Ring No.	Reference (For ordering)
OD	ID	S	D	d	L	d1		
4-1/4	3-7/8	3/16	4.252 ±.002	3.878 +.003-.001	.280 +.005-.001	4.246 ±.002	344	TP-041
4-3/8	4	3/16	4.377	4.003	.280	4.371	345	TP-042
4-1/2	4-1/8	3/16	4.502	4.128	.280	4.496	346	TP-043
4-5/8	4-1/4	3/16	4.627	4.253	.280	4.621	347	TP-044
4-3/4	4-3/8	3/16	4.752	4.378	.280	4.746	348	TP-045
4-7/8	4-1/2	3/16	4.877	4.503	.280	4.871	349	TP-046
5	4-5/8	3/16	5.003	4.629	.280	4.997	350	TP-047
5-1/8	4-5/8	1/4	5.128	4.649	.366	5.122	426	TP-048
5-1/4	4-3/4	1/4	5.253	4.774	.366	5.247	427	TP-049
5-3/8	4-7/8	1/4	5.378	4.889	.366	5.372	428	TP-050
5-1/2	5	1/4	5.503	5.024	.366	5.497	429	TP-051
5-5/8	5-1/8	1/4	5.628	5.149	.366	5.622	430	TP-052
5-3/4	5-1/4	1/4	5.753	5.274	.366	5.747	431	TP-053
5-7/8	5-3/8	1/4	5.878	5.399	.366	5.874	432	TP-054
6	5-1/2	1/4	6.003	5.524	.366	5.997	433	TP-055
6-1/8	5-5/8	1/4	6.128	5.649	.366	6.122	434	TP-056
6-1/4	5-3/4	1/4	6.253	5.774	.366	6.247	435	TP-057
6-1/2	6	1/4	6.503 ±.003	6.024 +.004-.002	.366	6.495 ±.003	437	TP-058
6-3/4	6-1/4	1/4	6.753	6.274	.366	6.745	438	TP-059
7	6-1/2	1/4	7.003	6.524	.366	6.995	439	TP-060
7-1/4	6-3/4	1/4	7.253	6.774	.366	7.245	440	TP-061
7-1/2	7	1/4	7.503	7.024	.366	7.495	441	TP-062
7-3/4	7-1/4	1/4	7.753	7.274	.366	7.745	442	TP-063
8	7-1/2	1/4	8.003	7.524	.366	7.995	443	TP-064
8-1/4	7-3/4	1/4	8.253	7.774	.366	8.245	444	TP-065
8-1/2	8	1/4	8.503	8.024	.366	8.495	445	TP-066
9	8-1/2	1/4	9.003	8.524	.366	8.995	446	TP-067
9-1/2	9	1/4	9.503	9.024	.366	9.495	447	TP-068
10	9-1/2	1/4	10.003	9.524	.366	9.995	448	TP-069
10-1/2	10	1/4	10.503	10.024	.366	10.495	449	TP-070
11	10-1/2	1/4	11.003	10.524	.366	10.995	450	TP-071
11-1/2	11	1/4	11.503	11.021	.366	11.495	451	TP-072
12	11-1/2	1/4	12.003	11.524	.366	11.995	452	TP-073
14	13-1/2	1/4	14.003	13.524	.366	13.995	456	TP-077
15-1/2	15	1/4	15.503	15.024	.366	15.495	459	TP-080
16	15-1/2	1/4	16.003	15.524	.366	15.995	460	TP-081
17	16-1/2	1/4	17.003	16.524	.366	16.995	462	TP-083

SPEC SEAL

Seals & O-rings Specialist

Piston Sealing Set - PSM

Piston Seals (Double Acting)

PSM (Inch Size)

PSM

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU - NBR	350	-50 +105	0.5

- Rolling and twisting resistance.
- Good extrusion resistance.
- Usable in standard o-ring and quad ring groove.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Bore Dia.	Groove Dia.	Groove Width	Seal Height	Piston Dia.	Reference (For order processing)
D	d	L	H	d1	
1.750	1.500	0.185	0.165	1.749	PSM-222
2.000	1.625	0.280	0.265	1.999	PSM-326
2.250	1.875	0.280	0.265	2.249	PSM-328
2.375	2.000	0.280	0.265	2.374	PSM-329
2.500	2.125	0.280	0.265	2.499	PSM-330
2.750	2.375	0.280	0.265	2.749	PSM-332
3.000	2.625	0.280	0.265	2.999	PSM-334
3.250	2.875	0.280	0.265	3.249	PSM-336
3.500	3.125	0.280	0.265	3.499	PSM-338
3.750	3.375	0.280	0.265	3.749	PSM-340
4.000	3.625	0.280	0.265	3.999	PSM-342
4.250	3.875	0.280	0.265	4.249	PSM-344
4.500	4.125	0.280	0.265	4.499	PSM-346
4.625	4.250	0.280	0.265	4.624	PSM-347
5.000	4.625	0.280	0.265	4.999	PSM-350
5.500	5.020	0.365	0.350	5.499	PSM-429
6.000	5.520	0.365	0.350	5.999	PSM-433
6.500	6.020	0.365	0.350	6.499	PSM-437
7.000	6.520	0.365	0.350	6.999	PSM-439
7.500	7.020	0.365	0.350	7.499	PSM-441
8.000	7.520	0.365	0.350	7.999	PSM-443
8.500	8.020	0.365	0.350	8.499	PSM-445
9.000	8.520	0.365	0.350	8.999	PSM-446

SPEC SEAL Seals & O-rings Specialist

Piston Seal - PSC

Piston Seals (Double Acting)

PSC, PSP (Inch Size)

PSC, PSP

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
Fluorotrel - O Ring	350	- 50 +120	0.5

- High extrusion and abrasion resistance.
- Double acting piston seal designed.
- Usable in standard o-ring and quad ring groove.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Seal Height H	Piston Dia. d1	Reference (For order processing)
1.125	0.879	0.185	0.150	1.123	PSC-212
1.375	1.129	0.185	0.150	1.373	PSC-216
1.500	1.254	0.185	0.150	1.498	PSC-218
1.500	1.254	0.304	0.265	1.498	PSC-218-WB
1.750	1.504	0.185	0.150	1.748	PSC-222
1.750	1.504	0.304	0.265	1.748	PSC-222-WB
1.875	1.500	0.280	0.255	1.873	PSC-325
2.000	1.625	0.280	0.255	1.998	PSC-326
2.000	1.625	0.424	0.370	1.998	PSC-326-WB
2.250	1.875	0.280	0.255	2.248	PSC-328
2.375	2.000	0.280	0.255	2.373	PSC-329
2.500	2.125	0.280	0.255	2.498	PSC-330
2.500	2.125	0.424	0.370	2.498	PSC-330-WB
2.750	2.374	0.280	0.255	2.747	PSC-332
3.000	2.624	0.280	0.255	2.997	PSC-334
3.000	2.624	0.424	0.370	2.997	PSC-334-WB
3.250	2.874	0.280	0.255	3.247	PSC-336
3.375	3.000	0.280	0.255	3.373	PSC-337
3.500	3.125	0.280	0.255	3.498	PSC-338
3.500	3.125	0.424	0.370	3.498	PSC-338-WB
3.625	3.250	0.280	0.255	3.623	PSC-339
3.750	3.375	0.280	0.255	3.748	PSC-340
4.000	3.625	0.280	0.255	3.998	PSC-342
4.000	3.625	0.424	0.370	3.998	PSC-342-WB
4.250	3.875	0.280	0.255	4.248	PSC-344
4.500	4.125	0.280	0.255	4.498	PSC-346
4.625	4.250	0.280	0.255	4.623	PSC-347
5.000	4.626	0.280	0.255	4.999	PSC-350
5.500	5.021	0.365	0.320	4.499	PSC-429
6.000	5.521	0.365	0.320	5.999	PSC-433
6.000	5.521	0.579	0.500	5.999	PSC-433-WB
6.500	6.020	0.365	0.320	6.498	PSC-437
7.000	6.520	0.365	0.320	6.998	PSC-439
7.500	7.020	0.365	0.320	7.498	PSC-441
7.750	7.270	0.365	0.320	7.748	PSC-442
8.000	7.520	0.365	0.320	7.998	PSC-443
8.250	7.770	0.365	0.320	8.248	PSC-444
8.500	8.020	0.365	0.320	8.498	PSC-445
9.000	8.520	0.365	0.320	8.998	PSC-446
9.500	9.020	0.365	0.320	9.498	PSC-447
10.000	9.520	0.365	0.320	9.998	PSC-448
10.500	10.020	0.365	0.320	10.498	PSC-449
11.000	10.520	0.365	0.320	10.998	PSC-450
11.500	11.020	0.365	0.320	11.498	PSC-451
12.000	11.520	0.365	0.320	11.998	PSC-452
12.500	12.020	0.365	0.320	12.498	PSC-453
13.000	12.520	0.365	0.320	12.998	PSC-454
14.000	13.520	0.365	0.320	13.998	PSC-456

Piston Seal - PSU

Piston Seals (Double Acting)

PSU (Inch Size)

PSU

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU Composite	350	- 50 +105	0.5

- One piece double acting seal made of cast polyurethane.
- Highly resistant to abrasion.
- Low friction

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Bore Dia.	Groove Dia.	Piston Dia.	Groove Width	Seal step Height	Reference (For order processing)
D	d	D1	L	H	
1.500	1.000	1.499	0.394	0.375	PSU-1.500-1.000-0.375
1.500	1.125	1.499	0.263	0.250	PSU-1.500-1.125-0.250
1.500	1.250	1.499	0.196	0.187	PSU-1.500-1.250-0.187
1.750	1.250	1.749	0.394	0.375	PSU-1.750-1.250-0.375
1.750	1.375	1.749	0.263	0.250	PSU-1.750-1.375-0.250
1.750	1.375	1.749	0.526	0.500	PSU-1.750-1.375-0.500
2.000	1.500	1.999	0.394	0.375	PSU-2.000-1.500-0.375
2.000	1.625	1.999	0.328	0.312	PSU-2.000-1.625-0.312
2.000	1.625	1.999	0.394	0.375	PSU-2.000-1.625-0.375
2.250	1.875	2.249	0.328	0.312	PSU-2.250-1.875-0.312
2.500	2.000	2.499	0.394	0.375	PSU-2.500-2.000-0.375
2.500	2.125	2.499	0.328	0.312	PSU-2.500-2.125-0.312
2.500	2.125	2.499	0.394	0.375	PSU-2.500-2.125-0.375
3.000	2.500	2.999	0.394	0.375	PSU-3.000-2.500-0.375
3.000	2.500	2.999	0.550	0.500	PSU-3.000-2.500-0.500
3.000	2.625	2.999	0.328	0.312	PSU-3.000-2.625-0.312
3.000	2.625	2.999	0.394	0.375	PSU-3.000-2.625-0.375
3.250	2.750	3.249	0.577	0.550	PSU-3.250-2.750-0.550
3.250	2.875	3.249	0.328	0.312	PSU-3.250-2.875-0.312
3.500	3.000	3.499	0.394	0.375	PSU-3.500-3.000-0.375
3.500	3.125	3.499	0.328	0.312	PSU-3.500-3.125-0.312
3.500	3.125	3.499	0.394	0.375	PSU-3.500-3.125-0.375
3.750	3.375	3.749	0.328	0.312	PSU-3.750-3.375-0.312
4.000	3.500	3.999	0.394	0.375	PSU-4.000-3.500-0.375
4.000	3.625	3.999	0.394	0.375	PSU-4.000-3.625-0.375
4.500	4.000	4.499	0.394	0.375	PSU-4.500-4.000-0.375
4.500	4.000	4.499	0.591	0.562	PSU-4.500-4.000-0.562
5.000	4.375	4.999	0.526	0.500	PSU-5.000-4.375-0.500
5.000	4.500	4.999	0.394	0.375	PSU-5.000-4.500-0.375
5.000	4.500	4.999	0.526	0.500	PSU-5.000-4.500-0.500
5.000	4.500	4.999	0.591	0.562	PSU-5.000-4.500-0.562
5.250	4.750	5.249	0.591	0.562	PSU-5.250-4.750-0.562
5.500	5.000	5.499	0.394	0.375	PSU-5.500-5.000-0.375
6.000	5.500	5.999	0.394	0.375	PSU-6.000-5.500-0.375
6.000	5.500	5.999	0.591	0.562	PSU-6.000-5.500-0.562
6.500	6.000	6.499	0.591	0.562	PSU-6.500-6.000-0.562

NOTE : Larger sizes are available. Please contact a Sales Representative for more information.

SPEC SEAL
Seals & O-rings Specialist

Piston Seals (Single Acting)

Design	Ref.	Material	Pressure (BAR)	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	GT-3	NBR+Fabric	700	-30 +100	0.5	●		78
	H-51	NBR+Fabric	700	-30 +100	0.5	●		78
	RSE, TTE UHP, UNP	PU	400	-40 +95	0.6	●		80
	C2	NBR	160	-25 +100	0.5	●	●	86
	GPY	NBR	175 (250)	-30 +100	1 (0.5)	●		90
	RGY	NBR	140 (210)	-25 +100	1 (0.5)	●		92
	SGY	NBR	210	-45 +100	0.5	●		94
	SP-55-271 DK25	PTFE+Bronze - O-ring	400	-40 +200	15	●	●	96
	SP-11-2000 DK19	PTFE-Stainless Spring	450	-150 +225	15	●	●	100
	SW+RR	NBR+Fabric-POM	450	-30 +120	0.5	●		104

Note : Packing used with back up ring can stand pressure show in ( ).

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SPEC SEAL

Seals & O-rings Specialist

Piston V-Packing

Piston Seals (Single Acting)

GT-3, H-51 (Metric Size)

GT-3

H-51

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric	700	-30 +100	0.5

- Exceptional wear resistance.
- Pre-load adjustment capability.
- Excellent behavior in harsh condition.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5
250-500	10.0

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width L	Reference (For order processing)	Reference (For order processing)	Reference
30.0	20.0	9.3		F-030-020-09.3 H51	4208310
40.0	25.0	11.5	F-040-025-11.5 GT3	F-040-025-11.5 H51	4208010
45.0	30.0	11.5	F-045-030-11.5 GT3		
50.0	35.0	11.5	F-050-035-11.5 GT3	F-050-035-11.5 H51	4207610
55.0	40.0	11.5	F-055-040-11.5 GT3	F-055-040-11.5 H51	4207110
60.0	45.0	11.5	F-060-045-11.5 GT3	F-060-045-11.5 H51	4207210
63.0	48.0	13.0	F-063-048-13.0 GT3	F-063-048-13.0 H51	4207410
70.0	50.0	15.2	F-070-050-15.2 GT3	F-070-050-15.2 H51	4208210
80.0	60.0	15.2	F-080-060-15.2 GT3	F-080-060-15.2 H51	4208110
90.0	70.0	21.2	F-090-070-21.2 GT3	F-090-070-21.2 H51	4207710
100.0	80.0	21.2	F-100-080-21.2 GT3	F-100-080-21.2 H51	4207510
110.0	90.0	21.2	F-110-090-21.2 GT3	F-110-090-21.2 H51	4207910
115.0	95.0	21.2	F-115-095-21.2 GT3		
125.0	100.0	25.8	F-125-100-25.8 GT3	F-125-100-25.8 H51	4207810
140.0	115.0	25.8	F-140-115-25.8 GT3	F-140-115-25.8 H51	4208410
150.0	120.0	29.0	F-150-120-29.0 GT3	F-150-120-29.0 H51	4208510
160.0	130.0	29.0	F-160-130-29.0 GT3	F-160-130-29.0 H51	4208710
180.0	150.0	31.5	F-180-150-31.5 GT3	F-180-150-31.5 H51	4208610
200.0	170.0	33.5	F-200-170-33.5 GT3	F-200-170-33.5 H51	4209010
220.0	190.0	33.5	F-220-190-33.5 GT3		
225.0	195.0	33.5	F-225-195-33.5 GT3	F-225-195-33.5 H51	6582110
240.0	210.0	33.5	F-240-210-33.5 GT3		
250.0	220.0	33.5	F-250-220-33.5 GT3	F-250-220-33.5 H51	6582310
275.0	245.0	33.5		F-275-245-33.5 H51	6582410
280.0	250.0	33.5	F-280-250-33.5 GT3		
300.0	270.0	33.5	F-300-270-33.5 GT3	F-300-270-33.5 H51	6582510
320.0	290.0	33.5	F-320-290-33.5 GT3	F-320-290-33.5 H51	6582610
320.0	280.0	41.5	F-320-280-41.5 GT3		
360.0	320.0	41.5	F-360-320-41.5 GT3		
400.0	360.0	41.5	F-400-360-41.5 GT3		
450.0	410.0	41.5	F-450-410-41.5 GT3		
500.0	460.0	41.5	F-500-460-41.5 GT3		

Piston U-Cup

Piston Seals (Single Acting)

RSE, TTE, UHP, UNP (Metric Size)

RSE, TTE, UHP, UNP

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-40 +95	0.6

- Simple groove design.
- High abrasion resistance.
- Long service life.
- Effective sealing effect even with poor mating surface finish.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Pressure	Clearance F Max	
Bar	D <60 mm	D >60 mm
50	0.40	0.50
100	0.30	0.40
200	0.20	0.30
300	0.15	0.20
400	0.10	0.15

(Metric Size)

Bore Dia. D	Groove Dia. d	Seal Height H	Groove Width L	Fitting Dia. d1	Reference	Reference	Reference
12.0	5.0	5.5	6.0	8.0	RSE 012-005	UC 005-012-05.5 TTE	
14.0	8.0	6.3	6.8	11.0	RSE 014-008	UC 008-014-06.3 TTE	
16.0	10.0	6.0	6.5	13.0	RSE 016-010/1	UC 010-016-06 TTE	
16.0	10.0	8.0	9.0	13.0	RSE 016-010	UC 010-016-08 TTE	
20.0	12.0	6.5	7.5	15.0	RSE 020-012	UC 012-020-06.5 TTE	
20.0	14.0	5.5	6.0	17.0	RSE 020-014	UC 014-020-05.5 TTE	
22.0	12.0	8.0	9.0	16.0	RSE 022-012	UC 012-022-08 TTE	
25.0	10.0	10.0	11.0	14.0	RSE 025-010	UC 010-025-10 TTE	
25.0	15.0	8.0	9.0	19.0	RSE 025-015	UC 015-025-08 TTE	
30.0	15.0	10.0	11.0	19.0	RSE 030-015	UC 015-030-10 TTE	
30.0	20.0	8.0	9.0	24.0	RSE 030-020	UC 020-030-08 TTE	
30.0	22.0	6.5	7.0	25.0	RSE 030-022	UC 022-030-06.5 TTE	
32.0	22.0	8.0	9.0	26.0	RSE 032-022/1	UC 022-032-08 TTE	
32.0	22.0	10.0	11.0	26.0	RSE 032-022	UC 022-032-010 TTE	
32.0	26.0	5.0	6.0	28.0	RSE 032-026	UC 026-032-05 TTE	
34.0	22.0	8.4	9.4	26.0	RSE 034-022/1		
34.0	22.0	9.0	10.0	26.0	RSE 034-022	UC 022-034-09 TTE	
35.0	20.0	10.0	11.0	25.0	RSE 035-020	UC 020-035-10 TTE	
35.0	25.0	8.0	9.0	29.0	RSE 035-025	UC 025-035-08 TTE	
35.0	27.0	10.0	11.0	30.0	RSE 035-027	UC 027-035-10 TTE	
36.5	24.0	6.2	7.0	28.0	RSE 036.5-024	UC 024-036.5-06.2 TTE	
37.0	21.0	12.0	13.0	25.0	RSE 037-021	UC 021-037-12 TTE	
38.0	31.0	4.7	5.2	34.0	RSE 038-031	UC 031-038-04.7 TTE	
40.0	25.0	10.0	11.0	30.0	RSE 040-025	UC 025-040-10 TTE	
40.0	30.0	6.5	7.0	34.0			UHP-040
40.0	30.0	6.5	7.5	34.0	RSE 040-030/1	UC 030-040-06.5 TTE	
40.0	30.0	10.0	11.0	34.0	RSE 040-030	UC 030-040-10 TTE	
40.0	32.0	8.0	9.0	35.0	RSE 040-032	UC 032-040-08 TTE	
40.0	33.0	8.0	9.0	36.0	RSE 040-033	UC 033-040-08 TTE	
42.0	32.0	10.0	11.0	36.0	RSE 042-032	UC 032-042-10 TTE	
42.0	34.5	4.2	4.7	37.0	RSE 042-034.5	UC 034.5-042-04.2 TTE	
43.0	25.0	9.0	10.0	29.0	RSE 043-025	UC 025-043-09 TTE	
44.0	20.0	11.0	12.0	25.0	RSE 044-020	UC 020-044-11 TTE	
45.0	28.5	12.0	13.0	33.0	RSE 045-028.5	UC 028.5-045-12 TTE	
45.0	30.0	10.0	11.0	35.0	RSE 045-030	UC 030-045-10 TTE	
50.0	30.0	12.0	13.0	35.0	RSE 050-030	UC 030-050-12 TTE	
50.0	32.0	10.0	11.0	35.0	RSE 050-032	UC 032-050-10 TTE	
50.0	35.0	8.5	9.5	40.0	RSE 050-035/1	UC 035-050-08.5 TTE	
50.0	35.0	10.0	11.0	40.0	RSE 050-035	UC 035-050-10 TTE	
50.0	40.0	5.0	5.5	44.0	RSE 050-040/1	UC 040-050-05 TTE	

* For order processing, the computer code will be
e.g. UC 005-012-05.5 RSE, UC 005-012-05.5 TTE

Piston U-Cup

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width	Fitting Dia.	Reference	Reference	Reference
D	d	H	L	d1			
50.0	40.0	6.5	7.0	44.0		UC 040-050-06.5 TTE	UHP-050
50.0	40.0	10.0	11.0	44.0	RSE 050-040	UC 040-050-10 TTE	
50.0	42.0	5.0	6.0	46.0		UC 042-050-05 TTE	
50.0	42.0	5.7	6.5	45.0	RSE 050-042/2	UC 042-050-05.7 TTE	
50.0	42.0	8.0	9.0	45.0	RSE 050-042/1	UC 042-050-08 TTE	
50.0	42.0	10.0	11.0	45.0	RSE 050-042	UC 042-050-10 TTE	
50.8	40.8	7.0	8.0	45.0	RSE 050.8-040.8	UC 040.8-050.8-07 TTE	
52.0	42.0	10.0	10.6	46.0	RSE 052-042	UC 042-052-10 TTE	
55.0	40.0	10.0	11.0	45.0	RSE 055-040	UC 040-055-10 TTE	
55.0	47.0	5.7	6.3	50.0	RSE 055-047	UC 047-055-05.7 TTE	
60.0	40.0	12.0	13.0	45.0	RSE 060-040	UC 040-060-12 TTE	
60.0	40.0	13.5	14.5	45.0	RSE 060-040/1	UC 040-060-13.5 TTE	
60.0	45.0	10.0	11.0	50.0	RSE 060-045	UC 045-060-10 TTE	
60.0	50.0	5.0	5.5	54.0	RSE 060-050/1	UC 050-060-05 TTE	
60.0	50.0	7.0	8.0	54.0	RSE 060-050	UC 050-060-07 TTE	
60.0	50.0	10.0	11.0	54.0	RSE 060-050/2	UC 050-060-10 TTE	
60.0	52.0	8.0	9.0	55.0	RSE 060-052	UC 052-060-08 TTE	
63.0	43.0	12.0	13.0	47.0	RSE 063-043	UC 043-063-12 TTE	
63.0	45.0	10.0	11.0	50.0	RSE 063-045	UC 045-063-10 TTE	
63.0	48.0	10.0	11.0	53.0	RSE 063-048/1	UC 048-063-10 TTE	
63.0	48.0	12.0	13.0	53.0	RSE 063-048	UC 048-063-12 TTE	
63.0	53.0	6.5	7.0	57.0			UHP-063
63.0	53.0	7.0	8.0	57.0	RSE 063-053	UC 053-063-07 TTE	
63.0	53.0	12.0	13.0	57.0	RSE 063-053/1	UC 053-063-12 TTE	
65.0	45.0	12.0	13.0	50.0	RSE 065-045/1	UC 045-065-12 TTE	
65.0	45.0	13.5	14.5	50.0	RSE 065-045	UC 045-065-13.5 TTE	
65.0	50.0	10.0	11.0	55.0	RSE 065-050	UC 050-065-10 TTE	
65.0	50.0	12.0	13.0	55.0	RSE 065-050/1	UC 050-065-12 TTE	
65.0	55.0	10.0	11.0	59.0	RSE 065-055/1	UC 055-065-10 TTE	
65.0	55.0	13.5	14.5	59.0	RSE 065-055	UC 055-065-13.5 TTE	
68.0	48.0	10.0	11.0	53.0	RSE 068-048	UC 048-068-10 TTE	
70.0	50.0	12.0	13.0	55.0	RSE 070-050	UC 050-070-12 TTE	
70.0	50.0	13.5	14.5	55.0	RSE 070-050/1	UC 050-070-13.5 TTE	
70.0	50.0	15.0	16.0	55.0	RSE 070-050/2	UC 050-070-15 TTE	
70.0	55.0	9.5	10.5	60.0	RSE 070-055/1	UC 055-070-09.5 TTE	
70.0	55.0	12.0	13.0	60.0	RSE 070-055	UC 055-070-12 TTE	
70.0	60.0	7.2	8.0	64.0	RSE 070-060	UC 060-070-07.2 TTE	
70.0	60.0	12.0	13.0	64.0	RSE 070-060/1	UC 060-070-12 TTE	
70.0	60.0	13.5	14.5	64.0	RSE 070-060/2	UC 060-070-13.5 TTE	
70.0	62.0	7.5	8.5	65.0	RSE 070-062	UC 062-070-07.5 TTE	

* For order processing, the computer code will be
e.g. UC 005-012-05.5 RSE, UC 005-012-05.5 TTE

(Metric Size)

Bore Dia. D	Groove Dia. d	Seal Height H	Groove Width L	Fitting Dia. d1	Reference	Reference	Reference
72.0	58.0	12.0	13.0	62.0	RSE 072-058	UC 058-072-12 TTE	
75.0	50.0	14.0	15.0	55.0	RSE 075-050		
75.0	55.0	13.5	14.5	60.0	RSE 075-055		
75.0	65.0	5.0	5.5	69.0	RSE 075-065/1		
75.0	65.0	6.7	7.5	69.0	RSE 075-065/3	UC 065-075-06.7 TTE	
75.0	65.0	7.0	8.0	69.0	RSE 075-065/4	UC 065-075-07 TTE	
75.0	65.0	10.0	11.0	69.0	RSE 075-065/2	UC 065-075-10 TTE	
75.0	65.0	13.5	14.5	69.0	RSE 075-065	UC 065-075-13.5 TTE	
80.0	60.0	12.0	13.0	65.0	RSE 080-060	UC 060-080-12 TTE	
80.0	60.0	13.5	14.5	65.0	RSE 080-060/1	UC 060-080-13.5 TTE	
80.0	65.0	12.0	13.0	70.0	RSE 080-065	UC 065-080-12 TTE	
80.0	70.0	7.0	8.0	74.0	RSE 080-070	UC 070-080-07 TTE	
80.0	70.0	12.0	13.0	74.0	RSE 080-070/1	UC 070-080-12 TTE	
80.0	71.0	6.5	7.0	74.0			UHP-080
80.0	72.0	12.0	13.0	75.0	RSE 080-072	UC 072-080-12 TTE	
85.0	65.0	13.5	14.5	70.0	RSE 085-065	UC 065-085-13.5 TTE	
85.0	75.0	10.0	11.0	79.0	RSE 085-075/1	UC 075-085-10 TTE	
85.0	75.0	12.0	13.0	79.0	RSE 085-075	UC 075-085-12 TTE	
90.0	70.0	12.0	13.0	75.0	RSE 090-070	UC 070-090-12 TTE	
90.0	70.0	13.5	14.5	75.0	RSE 090-070/1	UC 070-090-13.5 TTE	
90.0	75.0	12.0	13.0	80.0	RSE 090-075	UC 075-090-12 TTE	
90.0	80.0	5.0	5.5	84.0	RSE 090-080/2	UC 080-090-05 TTE	
90.0	80.0	6.5	7.0	84.0			UHP-090
90.0	80.0	10.0	11.0	84.0	RSE 090-080/1	UC 080-090-10 TTE	
90.0	80.0	13.0	14.0	84.0	RSE 090-080	UC 080-090-13 TTE	
95.0	75.0	13.5	14.5	80.0	RSE 095-075	UC 075-095-13.5 TTE	
95.0	85.0	6.7	7.5	89.0	RSE 095-085/2	UC 085-095-06.7 TTE	
95.0	85.0	7.0	8.0	89.0	RSE 095-085	UC 085-095-07 TTE	
95.0	85.0	8.5	9.5	89.0	RSE 095-085/1	UC 085-095-08.5 TTE	
95.0	85.0	13.5	14.5	89.0	RSE 095-085/3	UC 085-095-13.5 TTE	
100.0	80.0	10.0	11.0	85.0	RSE 100-080/2	UC 080-100-10 TTE	
100.0	80.0	12.0	13.0	85.0	RSE 100-080	UC 080-100-12 TTE	
100.0	80.0	13.5	14.5	85.0	RSE 100-080/1	UC 080-100-13.5 TTE	
100.0	85.0	9.5	10.0	90.0			UHP-100
100.0	85.0	12.0	13.0	90.0	RSE 100-085	UC 085-100-12 TTE	
100.0	86.0	12.0	13.0	90.0	RSE 100-086	UC 086-100-12 TTE	
100.0	90.0	7.0	8.0	94.0	RSE 100-090	UC 090-100-07 TTE	
100.0	90.0	10.5	11.5	94.0	RSE 100-090/1	UC 090-100-10.5 TTE	
101.6	80.0	12.0	13.0	85.0	RSE 101.6-080	UC 080-101.6-12 TTE	
105.0	90.0	12.0	13.0	95.0	RSE 105-090	UC 090-105-12 TTE	

* For order processing, the computer code will be
e.g. UC 005-012-05.5 RSE, UC 005-012-05.5 TTE

Piston U-Cup

(Metric Size)

Bore Dia. D	Groove Dia. d	Seal Height H	Groove Width L	Fitting Dia. d1	Reference	Reference	Reference
110.0	90.0	12.0	13.0	95.0	RSE 110-090	UC 090-110-12 TTE	
110.0	95.0	12.0	13.0	100.0	RSE 110-095	UC 095-110-12 TTE	
110.0	100.0	7.0	8.0	104.0	RSE 110-100	UC 100-110-07 TTE	
110.0	100.0	13.5	14.5	104.0	RSE 110-100/1	UC 100-110-13.5 TTE	
115.0	100.0	10.5	11.5	105.0	RSE 115-100	UC 100-115-10.5 TTE	
115.0	105.0	13.5	14.5	109.0	RSE 115-105	UC 105-115-13.5 TTE	
120.0	95.0	12.0	13.0	100.0	RSE 120-095	UC 095-120-12 TTE	
120.0	100.0	12.0	13.0	105.0	RSE 120-100	UC 100-120-12 TTE	
120.0	100.0	13.5	14.5	105.0	RSE 120-100/1	UC 100-120-13.5 TTE	
120.0	103.0	16.0	17.0	108.0	RSE 120-103	UC 103-120-16 TTE	
125.0	105.0	12.0	13.0	110.0	RSE 125-105	UC 105-125-12 TTE	
125.0	105.0	15.0	16.0	110.0	RSE 125-105/1	UC 105-125-15 TTE	
125.0	112.0	9.0	9.5	116.0			UHP-125
125.0	115.0	7.0	8.0	119.0	RSE 125-115	UC 115-125-07 TTE	
125.0	115.0	15.0	16.0	119.0	RSE 125-115/1	UC 115-125-15 TTE	
130.0	110.0	12.0	13.0	115.0	RSE 130-110	UC 110-130-12 TTE	
130.0	110.0	15.0	16.0	115.0	RSE 130-110/1	UC 110-130-15 TTE	
130.0	120.0	13.5	14.5	124.0	RSE 130-120	UC 120-130-13.5 TTE	
140.0	114.0	12.0	13.0	119.0	RSE 140-114	UC 114-140-12 TTE	
140.0	120.0	12.0	13.0	125.0	RSE 140-120	UC 120-140-12 TTE	
140.0	125.0	9.5	10.0	130.0			UHP-140
150.0	125.0	13.5	14.5	130.0	RSE 150-125	UC 125-150-13.5 TTE	
150.0	130.0	15.0	16.0	135.0	RSE 150-130	UC 130-150-15 TTE	
150.0	136.0	9.0	9.5	140.0			UHP-150
150.0	140.0	7.0	8.0	144.0	RSE 150-140	UC 140-150-07 TTE	
160.0	140.0	13.5	14.5	145.0	RSE 160-140	UC 140-160-13.5 TTE	
160.0	145.0	9.5	10.0	150.0			UHP-160
160.0	148.0	7.1	7.5	153.0	RSE 160-148	UC 148-160-07.1 TTE	
170.0	150.0	15.0	16.0	155.0	RSE 170-150	UC 150-170-15 TTE	
174.8	165.2	7.3	7.5	170.0	RSE 174.8-165.2	UC 165.2-174.8-07.3 TTE	
180.0	155.0	16.0	17.0	160.0			UNP-180
180.0	160.0	13.5	14.5	165.0	RSE 180-160	UC 160-180-13.5 TTE	
180.0	165.0	9.5	10.0	170.0			UHP-180
180.0	166.0	15.5	16.5	170.0	RSE 180-166	UC 166-180-15.5 TTE	
190.0	165.0	16.0	17.0	170.0			UNP-190
190.0	170.0	15.0	16.0	175.0	RSE 190-170	UC 170-190-15 TTE	
200.0	175.0	16.0	17.0	180.0			UNP-200
200.0	180.0	12.5	13.0	185.0			UHP-200
205.0	180.0	16.0	17.0	185.0			UNP-205
215.0	190.0	16.0	17.0	195.0			UNP-215

* For order processing, the computer code will be
e.g. UC 005-012-05.5 RSE, UC 005-012-05.5 TTE

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width	Fitting Dia.	Reference	Reference	Reference
D	d	H	L	d1			
220.0	200.0	12.5	13.0	205.0			UHP-220
224.0	199.0	16.0	17.0	204.0			UNP-224
224.0	204.0	12.5	13.0	209.0			UHP-224
237.0	212.0	19.0	20.0	217.0			UNP-237
250.0	225.0	19.0	20.0	230.0			UNP-250
250.0	230.0	12.5	13.0	235.0			UHP-250
261.0	236.0	19.0	20.0	241.0			UNP-261
275.0	250.0	19.0	20.0	255.0			UNP-275
280.0	250.0	18.0	19.0	256.0	RSE 280-250	UC 250-280-18 TTE	
280.0	255.0	19.0	20.0	261.0			UNP-280
295.0	265.0	19.0	20.0	271.0			UNP-295
300.0	270.0	19.0	20.0	276.0			UNP-300
310.0	280.0	19.0	20.0	286.0			UNP-310
320.0	285.0	20.0	21.0	290.0	RSE 320-285	UC 285-320-20 TTE	
330.0	300.0	19.0	20.0	306.0			UNP-330

* For order processing, the computer code will be
e.g. UC 005-012-05.5 RSE, UC 005-012-05.5 TTE

SPEC SEAL
Seals & O-rings Specialist

Rubber U-Cup - C2

Piston Seals (Single Acting)

C2 (Metric & Imperial Size)

C2

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	160	- 25 +100	0.5

- Excellent sealing performance.
- Extremely low friction.
- Small seal housing designed.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 mm	≤ 4 mm
Surface of housing	≤ 1.8 mm	≤ 10 mm
Sides of housing	≤ 3.0 mm	≤ 16 mm

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Seal Height H	Groove Width L	Fitting Dia. d1	Prefix No.	Reference (For order processing)
4.0	1.5	1.7	2.0	3.0	0010	UC 001.5-004-01.7 C2
5.0	2.0	2.2	2.5	4.0	0014	UC 002-005-02.2 C2
6.0	2.5	2.0	2.3	4.5	0023	UC 002.5-006-02 C2
6.0	3.0	3.0	3.5	5.0	0025	UC 003-006-03 C2
7.5	4.0	2.0	2.3	6.0	0033	UC 004-007.5-02 C2
8.0	3.0	3.5	4.0	5.5	0035	UC 003-008-03.5 C2
8.0	5.0	4.0	4.5	7.0	0045	UC 005-008-04 C2
9.5	4.5	3.5	4.0	7.0	0065	UC 004.5-009.5-03.5 C2
10.0	3.0	4.0	4.5	6.5	1010	UC 003-010-04 C2
10.0	5.0	3.5	4.0	7.5	1020	UC 005-010-03.5 C2
10.0	6.0	4.2	4.7	8.0	1029	UC 006-010-04.2 C2
11.0	6.0	4.0	4.5	8.5	1035	UC 006-011-04 C2
12.0	6.0	4.0	4.5	9.0	1040	UC 006-012-04 C2
12.0	8.0	3.0	3.5	10.0	1045	UC 008-012-03 C2
13.0	7.0	4.0	4.5	10.0	1055	UC 007-013-04 C2
13.5	8.0	4.0	4.5	11.0	1058	UC 008-013.5-04 C2
14.0	6.0	5.5	6.0	10.0	1063	UC 006-014-05.5 C2
14.0	8.0	4.0	4.5	11.0	1066	UC 008-014-04 C2
15.0	7.0	5.5	6.0	11.0	1070	UC 007-015-05.5 C2
15.7	10.0	4.0	4.5	12.5	1073	UC 010-015.7-04 C2
16.0	8.0	5.5	6.0	12.0	1080	UC 008-016-05.5 C2
16.0	10.0	4.0	4.5	13.0	1083	UC 010-016-04 C2
16.0	10.0	6.0	6.5	13.0	1086	UC 010-016-06 C2
17.5	11.7	3.0	3.5	14.8	1088	UC 011.7-017.5-03 C2
18.0	10.0	5.5	6.0	14.0	1092	UC 010-018-05.5 C2
19.05	10.5	5.5	6.0	14.0	1097	UC 010.5-019.05-05.5 C2
20.0	10.0	7.0	7.5	15.0	2005	UC 010-020-07 C2
20.0	12.0	5.5	6.0	16.0	2010	UC 012-020-05.5 C2
20.0	14.0	4.2	4.7	17.0	2012	UC 014-020-04.2 C2
22.0	14.0	5.5	6.0	18.0	2020	UC 014-022-05.5 C2
24.0	16.0	5.5	6.0	20.0	2030	UC 016-024-05.5 C2
25.0	17.0	5.5	6.0	21.0	2040	UC 017-025-05.5 C2
26.0	18.0	5.5	6.0	22.0	2050	UC 018-026-05.5 C2
28.0	18.0	8.0	8.5	23.0	2060	UC 018-028-08 C2
28.0	20.0	5.5	6.0	24.0	2065	UC 020-028-05.5 C2
30.0	16.0	10.0	11.0	23.0	3005	UC 016-030-10 C2
30.0	18.0	8.0	8.5	24.0	3010	UC 018-030-08 C2
30.0	20.0	7.0	7.5	25.0	3015	UC 020-030-07 C2
30.0	22.0	5.5	6.0	26.0	3018	UC 022-030-05.5 C2
32.0	22.0	5.0	5.5	27.0	3025	UC 022-032-05 C2
32.0	22.0	7.0	7.5	27.0	3030	UC 022-032-07 C2
32.0	24.0	5.5	6.0	28.0	3035	UC 024-032-05.5 C2
32.0	25.6	4.3	4.8	29.0	3038	UC 025.6-032-04.3 C2
35.0	25.0	7.0	7.5	30.0	3050	UC 025-035-07 C2
36.0	26.0	7.0	7.5	31.0	3055	UC 026-036-07 C2

Rubber U-Cup - C2

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Seal Height H	Groove Width L	Fitting Dia. d1	Prefix No.	Reference (For order processing)
37.0	21.0	12.0	13.0	29.0	3060	UC 021-037-12 C2
37.0	29.0	5.5	6.0	33.0	3063	UC 029-037-05.5 C2
38.0	28.0	7.0	7.5	33.0	3065	UC 028-038-07 C2
39.69	26.99	6.35	6.85	33.5	3093	UC 026.99-039.69-06.35 C2
40.0	30.0	7.0	7.5	35.0	4005	UC 030-040-07 C2
40.0	32.0	5.5	6.0	36.0	4010	UC 032-040-05.5 C2
45.0	29.0	12.0	13.0	40.0	4029	UC 029-045-12 C2
45.0	35.0	7.0	7.5	40.0	4035	UC 035-045-07 C2
46.0	36.0	7.0	7.5	41.0	4045	UC 036-046-07 C2
45.0	37.0	6.0	6.5	41.0	4047	UC 037-045-06 C2
48.0	40.0	5.5	6.0	44.0	4065	UC 040-048-05.5 C2
50.0	36.0	10.0	11.0	43.0	5005	UC 036-050-10 C2
50.0	40.0	7.0	7.5	45.0	5010	UC 040-050-07 C2
50.0	42.0	8.0	8.5	46.0	5012	UC 042-050-08 C2
50.8	41.28	7.93	8.43	51.0	5016	UC 041.28-050.8-07.93 C2
52.0	36.0	12.0	13.0	44.0	5020	UC 036-052-12 C2
52.0	42.0	7.0	7.5	48.0	5025	UC 042-052-07 C2
55.0	45.0	7.0	7.5	50.0	5045	UC 045-055-07 C2
60.0	40.0	12.0	13.0	50.0	6005	UC 040-060-12 C2
60.0	50.0	7.0	7.5	55.0	6010	UC 050-060-07 C2
60.0	50.0	10.0	11.0	55.0	6011	UC 050-060-10 C2
62.0	46.0	12.0	13.0	52.0	6020	UC 046-062-12 C2
62.0	47.0	10.0	11.0	51.5	6023	UC 047-062-10 C2
62.0	52.0	7.0	7.5	57.0	6028	UC 052-062-07 C2
63.0	45.0	12.0	13.0	54.0	6040	UC 045-063-12 C2
63.0	53.0	7.0	7.5	58.0	6035	UC 053-063-070 C2
65.0	49.0	12.0	13.0	57.0	6045	UC 049-065-12 C2
65.0	53.0	10.0	11.0	59.0	6050	UC 053-065-10 C2
65.0	55.0	7.0	7.5	60.0	6055	UC 055-065-07 C2
67.0	57.0	7.0	7.5	62.0	6063	UC 057-067-07 C2
68.0	48.0	14.0	15.0	58.0	6065	UC 048-068-14 C2
68.0	58.0	7.0	7.5	63.0	6070	UC 058-068-07 C2
70.0	50.0	14.0	15.0	60.0	7005	UC 050-070-14 C2
70.0	54.0	12.0	13.0	62.0	7010	UC 054-070-12 C2
70.0	58.0	8.5	9.5	64.0	7020	UC 058-070-08.5 C2
74.0	62.0	8.5	9.5	68.0	7035	UC 062-074-08.5 C2
75.0	55.0	12.0	13.0	65.0	7045	UC 055-075-12 C2
75.0	59.0	12.0	13.0	67.0	7047	UC 059-075-12 C2
75.0	63.0	8.5	9.5	69.0	7050	UC 063-075-08.5 C2
80.0	60.0	14.0	15.0	70.0	8005	UC 060-080-14 C2
80.0	63.0	16.0	17.0	71.5	8008	UC 063-080-16 C2
80.0	64.0	8.0	8.5	72.0	8011	UC 064-080-08 C2
80.0	68.0	8.5	9.5	74.0	8015	UC 068-080-08.5 C2
85.0	73.0	8.5	9.5	79.0	8045	UC 073-085-08.5 C2
90.0	70.0	12.0	13.0	80.0	9015	UC 070-090-12 C2

SPEC SEAL Seals & O-rings Specialist

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Seal Height H	Groove Width L	Fitting Dia. d1	Prefix No.	Reference (Fo order processing)
90.0	78.0	8.5	9.5	84.0	9025	UC 078-090-08.5 C2
98.43	85.73	9.52	10.32	92.0	9085	UC 085.73-098.43-09.52 C2
100.0	80.0	15.0	16.0	90.0	A010	UC 080-100-15 C2
100.0	85.0	9.5	10.5	92.5	A014	UC 085-100-09.5 C2
100.0	85.0	12.0	13.0	92.5	A015	UC 085-100-12 C2
100.0	88.0	8.5	9.5	94.0	A020	UC 088-100-08.5 C2
100.0	90.0	7.0	7.5	95.0	A025	UC 090-100-07 C2
105.0	85.0	15.0	16.0	95.0	A040	UC 085-105-15 C2
110.0	95.0	10.0	11.0	102.5	B010	UC 095-110-10 C2
115.0	95.0	14.0	15.0	105.0	B015	UC 095-115-14 C2
120.0	100.0	15.0	16.0	110.0	C015	UC 100-120-15 C2
120.0	105.0	10.0	11.0	112.5	C017	UC 105-120-10 C2
125.0	105.0	16.0	17.0	115.0	C024	UC 105-125-16 C2
125.0	110.0	10.0	11.0	117.5	C025	UC 110-125-10 C2
130.0	115.0	10.0	11.0	122.5	D010	UC 115-130-10 C2
135.0	115.0	14.0	15.0	125.0	D020	UC 115-135-14 C2
136.0	116.0	14.0	15.0	126.0	D025	UC 116-136-14 C2
140.0	115.0	18.0	19.0	127.5	E010	UC 115-140-18 C2
140.0	120.0	14.0	15.0	130.0	E015	UC 120-140-14 C2
140.0	125.0	10.0	11.0	132.5	E020	UC 125-140-10 C2
145.0	130.0	10.0	11.0	137.5	E040	UC 130-145-10 C2
150.0	135.0	10.0	11.0	142.5	F015	UC 135-150-10 C2
155.0	130.0	18.0	19.0	142.5	F025	UC 130-155-18 C2
155.0	135.0	15.0	16.0	145.0	F030	UC 135-155-15 C2
160.0	130.0	25.0	26.0	145.0	G011	UC 130-160-25 C2
160.0	140.0	14.0	15.0	150.0	G015	UC 140-160-14 C2
160.0	145.0	10.0	11.0	152.5	G020	UC 145-160-10 C2
175.0	145.0	18.0	19.0	160.0	H010	UC 145-175-18 C2
175.0	155.0	14.0	15.0	165.0	H020	UC 155-175-14 C2
180.0	150.0	25.0	26.0	165.0	J012	UC 150-180-25 C2
180.0	160.0	14.0	15.0	170.0	J015	UC 160-180-14 C2
190.0	170.0	14.0	15.0	180.0	K015	UC 170-190-14 C2
200.0	170.0	25.0	26.0	185.0	L009	UC 170-200-25 C2
200.0	180.0	14.0	15.0	190.0	L015	UC 180-200-14 C2
220.0	200.0	14.0	15.0	210.0	M015	UC 200-220-14 C2
225.0	200.0	17.5	18.5	212.5	M025	UC 200-225-17.5 C2
240.0	220.0	14.0	15.0	230.0	N015	UC 220-240-14 C2
250.0	230.0	14.0	15.0	240.0	N030	UC 230-250-14 C2
260.0	240.0	14.0	15.0	250.0	O015	UC 240-260-14 C2
280.0	260.0	14.0	15.0	270.0	P015	UC 260-280-14 C2
300.0	280.0	15.0	16.0	290.0	Q010	UC 280-300-15 C2
315.0	290.0	17.0	18.0	302.5	Q020	UC 290-315-17 C2
350.0	320.0	21.0	22.0	335.0	Q030	UC 320-350-21 C2

Rubber U-Cup - GPY

Piston Seals (Single Acting)

GPY (Metric Size)

GPY

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	175 (250)	-30 +100	1 (0.5)

- High wear resistance.
- Radial force resistance.
- Free from damages by back pressure.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
32-63	4.0
63-100	5.0
100-140	6.0
140-250	7.0

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width.		Fitting Dia.	Reference (For order processing)
D	d	H	L	L1*	d1	
32.0	22.0	6.2	7.0	9.0	31.0	GPY-032
40.0	30.0	6.2	7.0	9.0	39.0	GPY-040
45.0	35.0	6.2	7.0	9.0	44.0	GPY-045
50.0	40.0	6.2	7.0	9.0	49.0	GPY-050
55.0	45.0	6.2	7.0	9.0	54.0	GPY-055
60.0	50.0	6.2	7.0	9.0	59.0	GPY-060
63.0	53.0	6.2	7.0	9.0	62.0	GPY-063
65.0	52.0	7.7	8.5	11.0	63.5	GPY-065
70.0	57.0	7.7	8.5	11.0	68.5	GPY-070
75.0	62.0	7.7	8.5	11.0	73.5	GPY-075
80.0	65.0	9.2	10.0	12.5	78.5	GPY-080
85.0	70.0	9.2	10.0	12.5	83.5	GPY-085
90.0	75.0	9.2	10.0	12.5	88.5	GPY-090
100.0	80.0	12.0	13.0	16.0	98.0	GPY-100
110.0	90.0	12.0	13.0	16.0	108.0	GPY-110
120.0	100.0	12.0	13.0	16.0	118.0	GPY-120
125.0	105.0	12.0	13.0	16.0	123.0	GPY-125
130.0	110.0	12.0	13.0	16.0	128.0	GPY-130
140.0	120.0	12.0	13.0	16.0	138.0	GPY-140
150.0	125.0	16.0	17.0	20.0	148.0	GPY-150
160.0	135.0	16.0	17.0	20.0	158.0	GPY-160
180.0	155.0	16.0	17.0	20.0	178.0	GPY-180
200.0	175.0	16.0	17.0	20.0	198.0	GPY-200
250.0	225.0	16.0	17.0	20.0	248.0	GPY-250

* L1 Groove for GPY used with 1 back up ring can stand pressure up to 250 Bar

SPEC SEAL Seals & O-rings Specialist

Rubber U-Cup - RGY

Piston Seals (Single Acting)

RGY (Metric Size)

RGY

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	140 (210)	-25 +100	1 (0.5)

- Free from damages by back pressure.
- Long service life.
- improved wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
32-63	4.0
63-100	5.0
100-140	6.0
140-250	7.0

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width.		Fitting Dia.	Reference (For order processing)
D	d	H	L	L1*	d1	
40	30	6.2	7.0	8.5	39	RGY-40
45	35	6.2	7.0	8.5	44	RGY-45
50	40	6.2	7.0	8.5	49	RGY-50
55	45	6.2	7.0	8.5	54	RGY-55
60	50	6.2	7.0	8.5	59	RGY-60
63	53	6.2	7.0	8.5	62	RGY-63
65	55	6.2	7.0	8.5	64	RGY-65
70	60	6.2	7.0	8.5	69	RGY-70
70	57	8.2	9.0	11.0	69	RGY-70B
75	65	6.2	7.0	8.5	74	RGY-75
75	62	8.2	9.0	11.0	74	RGY-75B
80	70	6.2	7.0	8.5	79	RGY-80
80	71	6.2	7.0	8.5	79	RGY-80A
80	65	9.2	10.0	12.0	79	RGY-80B
90	80	6.2	7.0	8.5	89	RGY-90
90	75	9.2	10.0	12.0	88	RGY-90B
100	85	9.2	10.0	12.0	98	RGY-100
110	95	9.2	10.0	12.0	108	RGY-110
120	106	8.7	9.5	11.5	118	RGY-120
125	112	8.7	9.5	11.5	123	RGY-125
140	125	9.2	10.0	12.0	138	RGY-140
150	136	8.7	9.5	11.5	148	RGY-150
160	145	9.2	10.0	12.0	158	RGY-160
180	165	9.2	10.0	12.0	178	RGY-180
200	180	12.2	13.0	15.5	198	RGY-200
224	204	12.2	13.0	15.5	222	RGY-224
250	230	12.2	13.0	15.5	248	RGY-250

* L1 Groove for RGY used with 1 back up ring can stand pressure up to 280 Bar

Rubber U-Cup - SGY

Piston Seals (Single Acting)

SGY (Metric Size)

SGY

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	210	-45 +100	0.5

- High pressure applications.
- High frequency conditions.
- Exceptional low stick slip.
- Usable both regular and servere cold environments.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
32-63	4.0
63-100	5.0
100-140	6.0
140-250	7.0

(Metric Size)

Bore Dia.	Groove Dia.	Seal Height	Groove Width.		Fitting Dia.	Fitting Dia.	Reference (For order processing)
D	d	H	L	L1*	d1	d2	
40	30	6.3	7.0	8.5	39	39.5	SGY-40A
45	35	6.3	7.0	8.5	44	44.5	SGY-45A
50	40	6.3	7.0	8.5	49	49.5	SGY-50A
55	45	6.3	7.0	8.5	54	54.4	SGY-55A
60	50	6.3	7.0	8.5	59	59.4	SGY-60A
65	55	6.3	7.0	8.5	64	64.4	SGY-65
70	60	6.3	7.0	8.5	69	69.4	SGY-70
70	57	7.7	8.5	10.5	69	69.4	SGY-70A
75	65	6.3	7.0	8.5	74	74.4	SGY-75
75	62	7.7	8.5	10.5	74	74.4	SGY-75A
80	71	6.3	7.0	8.5	79	79.4	SGY-80
80	65	9.2	10.0	12.0	79	79.4	SGY-80A
85	75	6.3	7.0	8.5	84	84.4	SGY-85
85	70	9.2	10.0	12.0	84	84.4	SGY-85A
90	80	6.3	7.0	8.5	89	89.4	SGY-90
90	75	9.2	10.0	12.0	89	89.4	SGY-90A
95	80	9.2	10.0	12.0	94	94.4	SGY-95A
95	85	6.3	7.0	8.5	94	94.4	SGY-95B
100	85	9.2	10.0	12.0	98	99.4	SGY-100
105	90	9.2	10.0	12.0	103	104.4	SGY-105
110	95	9.2	10.0	12.0	108	109.4	SGY-110
115	100	9.2	10.0	12.0	113	114.4	SGY-115
120	106	8.7	9.5	11.5	118	119.4	SGY-120
125	112	9.2	10.0	12.0	123	124.3	SGY-125
130	115	8.7	9.5	11.5	128	129.3	SGY-130
140	125	9.2	10.0	12.0	138	139.3	SGY-140
150	136	8.7	9.5	11.5	148	149.3	SGY-150
160	145	9.2	10.0	12.0	158	159.3	SGY-160
180	165	9.2	10.0	12.0	178	179.3	SGY-180
200	180	12.0	13.0	15.5	198	199.2	SGY-200

* L1 Groove for SGY used with 1 back up ring can stand pressure up to 210 Bar

SPEC SEAL Seals & O-rings Specialist

PTFE Seal - 271

Piston Seals (Single Acting)

SP-55-271, DK25 (Metric & Imperial Size)

SP-55-271, DK25

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Bronze - O Ring	400	-40 +200	15

- Simple groove design, one-piece piston.
- Stick-slip free operation for precise control.
- High abrasion and extrusion resistance.
- Wide range of application.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

S	C
< 3.65	2.0
5.35	3.0
7.55	4.0
10.25	5.5
12.00	7.0

Installation Dimensions

Series No.	Bore Dia. D			Groove Dia.	Groove Width.	Radius	Radial Clearance F max.*			O-Ring Cross-Section
	Standard Application	Light Application	Heavy-Duty Application	d	L	r1	100 Bar	200 Bar	400 Bar	
A	8 - 16.9	17 - 26.9	-	D - 4.9	2.2	0.4	0.30	0.20	0.15	1.78
B	17 - 26.9	27 - 59.9	-	D - 7.3	3.2	0.6	0.40	0.25	0.15	2.62
C	27 - 59.9	60 - 199.9	17 - 26.9	D - 10.7	4.2	1.0	0.40	0.25	0.20	3.53
D	60 - 199.9	200 - 255.9	27 - 59.9	D - 15.1	6.3	1.3	0.50	0.30	0.20	5.33
E	200 - 255.9	256 - 669.9	60 - 199.9	D - 20.5	8.1	1.8	0.60	0.35	0.25	7.00
F	256 - 669.9	670 - 999.9	200 - 255.9	D - 24.0	8.1	1.8	0.60	0.35	0.25	7.00
G	670 - 999.9	-	256 - 669.9	D - 27.3	9.5	2.5	0.70	0.50	0.30	8.40
H	≥ 1000			D - 38.0	13.8	3.0	1.00	0.70	0.60	12.00

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
8.0	3.1	2.2	006	SP-55-271-0080	S55014-0080	ER-39-850-8
10.0	5.1	2.2	009	SP-55-271-0100	S55014-0100	ER-39-850-10
12.0	7.1	2.2	011	SP-55-271-0120	S55014-0120	ER-39-850-12
15.0	10.1	2.2	012	SP-55-271-0150	S55014-0150	ER-39-850-15
18.0	10.7	3.2	111	SP-55-271-0180	S55014-0180	ER-39-850-18
20.0	12.7	3.2	112	SP-55-271-0200	S55014-0200	ER-39-850-20
22.0	14.7	3.2	113	SP-55-271-0220	S55014-0220	ER-39-850-22
25.0	17.7	3.2	115	SP-55-271-0250	S55014-0250	ER-39-850-25
25.4	18.1	3.2	115	SP-55-271-0254	S55014-0254	ER-39-850-25.4
28.0	17.3	4.2	209	SP-55-271-0280	S55014-0280	ER-39-850-28
28.5	17.8	4.2	209	SP-55-271-0285	S55014-0285	ER-39-850-28.5
30.0	19.3	4.2	210	SP-55-271-0300	S55014-0300	ER-39-850-30
31.7	21.0	4.2	211	SP-55-271-0317	S55014-0317	ER-39-850-31.7
32.0	21.3	4.2	211	SP-55-271-0320	S55014-0320	ER-39-850-32
35.0	24.3	4.2	213	SP-55-271-0350	S55014-0350	ER-39-850-35
36.0	25.3	4.2	214	SP-55-271-0360	S55014-0360	ER-39-850-36
38.0	27.3	4.2	215	SP-55-271-0380	S55014-0380	ER-39-850-38
39.0	28.3	4.2	215	SP-55-271-0390	S55014-0390	ER-39-850-39
40.0	29.3	4.2	216	SP-55-271-0400	S55014-0400	ER-39-850-40
42.0	31.3	4.2	217	SP-55-271-0420	S55014-0420	ER-39-850-42
44.5	33.8	4.2	219	SP-55-271-0445	S55014-0445	ER-39-850-44.5
45.0	34.3	4.2	219	SP-55-271-0450	S55014-0450	ER-39-850-45
48.0	37.3	4.2	221	SP-55-271-0480	S55014-0480	ER-39-850-48
50.0	39.3	4.2	222	SP-55-271-0500	S55014-0500	ER-39-850-50
50.8	40.1	4.2	222	SP-55-271-0508	S55014-0508	ER-39-850-50.8
52.0	41.3	4.2	223	SP-55-271-0520	S55014-0520	ER-39-850-52
55.0	44.3	4.2	224	SP-55-271-0550	S55014-0550	ER-39-850-55
57.1	46.4	4.2	224	SP-55-271-0571	S55014-0571	ER-39-850-57.1
60.0	44.9	6.3	327	SP-55-271-0600	S55014-0600	ER-39-850-60
63.0	47.9	6.3	328	SP-55-271-0630	S55014-0630	ER-39-850-63

PTFE Seal - 271

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
63.5	48.4	6.3	328	SP-55-271-0635	S55014-0635	ER-39-850-63.5
64.0	48.9	6.3	328	SP-55-271-0640	S55014-0640	ER-39-850-64
65.0	49.9	6.3	328	SP-55-271-0650	S55014-0650	ER-39-850-65
69.8	54.7	6.3	330	SP-55-271-0698	S55014-0698	ER-39-850-69.8
70.0	54.9	6.3	330	SP-55-271-0700	S55014-0700	ER-39-850-70
75.0	59.9	6.3	332	SP-55-271-0750	S55014-0750	ER-39-850-75
76.2	61.1	6.3	332	SP-55-271-0762	S55014-0762	ER-39-850-76.2
80.0	64.9	6.3	333	SP-55-271-0800	S55014-0800	ER-39-850-80
82.5	67.4	6.3	334	SP-55-271-0825	S55014-0825	ER-39-850-82.5
85.0	69.9	6.3	335	SP-55-271-0850	S55014-0850	ER-39-850-85
89.0	73.9	6.3	336	SP-55-271-0890	S55014-0890	ER-39-850-89
90.0	74.9	6.3	336	SP-55-271-0900	S55014-0900	ER-39-850-90
95.0	79.9	6.3	337	SP-55-271-0950	S55014-0950	ER-39-850-95
100.0	84.9	6.3	340	SP-55-271-1000	S55014-1000	ER-39-850-100
101.6	86.5	6.3	340	SP-55-271-1016	S55014-1016	ER-39-850-101.6
105.0	89.9	6.3	341	SP-55-271-1050	S55014-1050	ER-39-850-105
110.0	94.9	6.3	343	SP-55-271-1100	S55014-1100	ER-39-850-110
114.3	99.2	6.3	344	SP-55-271-1143	S55014-1143	ER-39-850-114.3
115.0	99.9	6.3	344	SP-55-271-1150	S55014-1150	ER-39-850-115
120.0	104.9	6.3	346	SP-55-271-1200	S55014-1200	ER-39-850-120
125.0	109.9	6.3	347	SP-55-271-1250	S55014-1250	ER-39-850-125
127.0	111.9	6.3	348	SP-55-271-1270	S55014-1270	ER-39-850-127
130.0	114.9	6.3	349	SP-55-271-1300	S55014-1300	ER-39-850-130
132.0	116.9	6.3	349	SP-55-271-1320	S55014-1320	ER-39-850-132
133.0	117.9	6.3	350	SP-55-271-1330	S55014-1330	ER-39-850-133
135.0	119.9	6.3	351	SP-55-271-1350	S55014-1350	ER-39-850-135
140.0	124.9	6.3	352	SP-55-271-1400	S55014-1400	ER-39-850-140
145.0	129.9	6.3	353	SP-55-271-1450	S55014-1450	ER-39-850-145
150.0	134.9	6.3	355	SP-55-271-1500	S55014-1500	ER-39-850-150
154.0	138.9	6.3	356	SP-55-271-1540	S55014-1540	ER-39-850-154
155.0	139.9	6.3	356	SP-55-271-1550	S55014-1550	ER-39-850-155
160.0	144.9	6.3	358	SP-55-271-1600	S55014-1600	ER-39-850-160
165.0	149.9	6.3	360	SP-55-271-1650	S55014-1650	ER-39-850-165
170.0	154.9	6.3	361	SP-55-271-1700	S55014-1700	ER-39-850-170
175.0	159.9	6.3	362	SP-55-271-1750	S55014-1750	ER-39-850-175
180.0	164.9	6.3	363	SP-55-271-1800	S55014-1800	ER-39-850-180
190.0	174.9	6.3	364	SP-55-271-1900	S55014-1900	ER-39-850-190
200.0	179.5	8.1	441	SP-55-271-2000	S55014-2000	ER-39-850-200
210.0	189.5	8.1	443	SP-55-271-2100	S55014-2100	ER-39-850-210
220.0	199.5	8.1	444	SP-55-271-2200	S55014-2200	ER-39-850-220
230.0	209.5	8.1	445	SP-55-271-2300	S55014-2300	ER-39-850-230
240.0	219.5	8.1	446	SP-55-271-2400	S55014-2400	ER-39-850-240
250.0	229.5	8.1	447	SP-55-271-2500	S55014-2500	ER-39-850-250
260.0	236.0	8.1	447	SP-55-271-2600	S55014-2600	ER-39-850-260
270.0	246.0	8.1	448	SP-55-271-2700	S55014-2700	ER-39-850-270

(Metric & Imperial Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
280.0	256.0	8.1	449	SP-55-271-2800	S55014-2800	ER-39-850-280
290.0	266.0	8.1	449	SP-55-271-2900	S55014-2900	ER-39-850-290
300.0	276.0	8.1	451	SP-55-271-3000	S55014-3000	ER-39-850-300
310.0	286.0	8.1	451	SP-55-271-3100	S55014-3100	ER-39-850-310
320.0	296.0	8.1	452	SP-55-271-3200	S55014-3200	ER-39-850-320
330.0	306.0	8.1	453	SP-55-271-3300	S55014-3300	ER-39-850-330
340.0	316.0	8.1	453	SP-55-271-3400	S55014-3400	ER-39-850-340
350.0	326.0	8.1	454	SP-55-271-3500	S55014-3500	ER-39-850-350
360.0	336.0	8.1	455	SP-55-271-3600	S55014-3600	ER-39-850-360
370.0	346.0	8.1	456	SP-55-271-3700	S55014-3700	ER-39-850-370
380.0	356.0	8.1	457	SP-55-271-3800	S55014-3800	ER-39-850-380
390.0	366.0	8.1	457	SP-55-271-3900	S55014-3900	ER-39-850-390
400.0	376.0	8.1	458	SP-55-271-4000	S55014-4000	ER-39-850-400
410.0	386.0	8.1	459	SP-55-271-4100	S55014-4100	ER-39-850-410
420.0	396.0	8.1	460	SP-55-271-4200	S55014-4200	ER-39-850-420
430.0	406.0	8.1	461	SP-55-271-4300	S55014-4300	ER-39-850-430
440.0	416.0	8.1	461	SP-55-271-4400	S55014-4400	ER-39-850-440
450.0	426.0	8.1	462	SP-55-271-4500	S55014-4500	ER-39-850-450
460.0	436.0	8.1	463	SP-55-271-4600	S55014-4600	ER-39-850-460
470.0	446.0	8.1	464	SP-55-271-4700	S55014-4700	ER-39-850-470
480.0	456.0	8.1	464	SP-55-271-4800	S55014-4800	ER-39-850-480
490.0	466.0	8.1	ASA 93	SP-55-271-4900	S55014-4900	ER-39-850-490
500.0	476.0	8.1	466	SP-55-271-5000	S55014-5000	ER-39-850-500
510.0	486.0	8.1	467	SP-55-271-5100	S55014-5100	ER-39-850-510
520.0	496.0	8.1	468	SP-55-271-5200	S55014-5200	ER-39-850-520
530.0	506.0	8.1	468	SP-55-271-5300	S55014-5300	ER-39-850-530
540.0	516.0	8.1	469	SP-55-271-5400	S55014-5400	ER-39-850-540
550.0	526.0	8.1	469	SP-55-271-5500	S55014-5500	ER-39-850-550
560.0	536.0	8.1	470	SP-55-271-5600	S55014-5600	ER-39-850-560
570.0	546.0	8.1	ASA 100	SP-55-271-5700	S55014-5700	ER-39-850-570
580.0	556.0	8.1	ASA 100	SP-55-271-5800	S55014-5800	ER-39-850-580
590.0	566.0	8.1	471	SP-55-271-5900	S55014-5900	ER-39-850-590
600.0	576.0	8.1	471	SP-55-271-6000	S55014-6000	ER-39-850-600
610.0	586.0	8.1	472	SP-55-271-6100	S55014-6100	ER-39-850-610
620.0	596.0	8.1	472	SP-55-271-6200	S55014-6200	ER-39-850-620
630.0	606.0	8.1	ASA 104	SP-55-271-6300	S55014-6300	ER-39-850-630
640.0	616.0	8.1	473	SP-55-271-6400	S55014-6400	ER-39-850-640
650.0	626.0	8.1	473	SP-55-271-6500	S55014-6500	ER-39-850-650
660.0	636.0	8.1	474	SP-55-271-6600	S55014-6600	ER-39-850-660
670.0	642.7	9.5	640 * 8.4	SP-55-271-6700	S55014-6700	ER-39-850-670
680.0	652.7	9.5	650 * 8.4	SP-55-271-6800	S55014-6800	ER-39-850-680
690.0	662.7	9.5	660 * 8.4	SP-55-271-6900	S55014-6900	ER-39-850-690
700.0	672.7	9.5	670 * 8.4	SP-55-271-7000	S55014-7000	ER-39-850-700
710.0	682.7	9.5	680 * 8.4	SP-55-271-7100	S55014-7100	ER-39-850-710

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

PTFE Seal - 2000

Piston Seals (Single Acting)

SP-11-2000, DK19 (Metric Size)

SP-11-2000, DK19

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Stainless Spring	450	-150 +225	15

- Resistant to most fluids and chemicals.
- Low coefficients of friction.
- Can handle rapid changes in temperature.
- Stick-slip free.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

S	C
1.45	4.2
2.25	4.7
3.10	5.2
4.70	8.2
6.10	11.9

Installation Dimensions for grooves made for O-ring without back-up ring

Series No.	Bore Dia. D		Groove Dia.	Groove Width.	Radius	Step Height	Radial Clearance F max.*			
	Standard Range	Extended Range	d	L	r1	X Min.	20 Bar	100 Bar	200 Bar	400 Bar
2000	6 - 13.9	6 - 40.0	D - 2.9	2.4	0.4	0.4	0.20	0.10	0.08	0.05
2010	14 - 24.9	10 - 200.0	D - 4.5	3.6	0.4	0.6	0.25	0.15	0.10	0.07
2020	25 - 45.9	16 - 400.0	D - 6.2	4.8	0.6	0.7	0.35	0.20	0.15	0.08
2030	46 - 124.9	28 - 700.0	D - 9.4	7.1	0.8	0.8	0.50	0.25	0.20	0.10
2040	125 - 999.9	45 - 999.9	D - 12.2	9.5	0.8	0.9	0.60	0.30	0.25	0.12

Installation Dimensions for grooves made for O-ring with one back-up ring

Series No.	Bore Dia. D		Groove Dia.	Groove Width.	Radius	Step Height	Radial Clearance F max.*			
	Standard Range	Extended Range	d	L	r1	X Min.	20 Bar	100 Bar	200 Bar	400 Bar
2200	6 - 13.9	6 - 40.0	D - 2.9	3.80	0.4	0.4	0.20	0.10	0.08	0.05
2210	14 - 24.9	10 - 200.0	D - 4.5	4.65	0.4	0.6	0.25	0.15	0.10	0.07
2220	25 - 45.9	16 - 400.0	D - 6.2	5.70	0.6	0.7	0.35	0.20	0.15	0.08
2230	46 -124.9	28 - 700.0	D - 9.4	8.50	0.8	0.8	0.50	0.25	0.20	0.10
2240	125 -999.9	45 - 999.9	D - 12.2	11.20	0.8	0.9	0.60	0.30	0.25	0.12

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	Reference (For order processing)
6.0	3.1	2.4	SP-11-2000-0060
8.0	5.1	2.4	SP-11-2000-0080
10.0	7.1	2.4	SP-11-2000-0100
12.0	9.1	2.4	SP-11-2000-0120
14.0	9.5	3.6	SP-11-2010-0140
15.0	10.5	3.6	SP-11-2010-0150
16.0	11.5	3.6	SP-11-2010-0160
18.0	13.5	3.6	SP-11-2010-0180
20.0	15.5	3.6	SP-11-2010-0200
22.0	17.5	3.6	SP-11-2010-0220
25.0	18.8	4.8	SP-11-2020-0250
28.0	21.8	4.8	SP-11-2020-0280
30.0	23.8	4.8	SP-11-2020-0300
32.0	25.8	4.8	SP-11-2020-0320
35.0	28.8	4.8	SP-11-2020-0350

PTFE Seal - 2000

(Metric Size)

Bore Dia. D	Groove Dia. d	Groove Width. L	Reference (For order processing)
40.0	33.8	4.8	SP-11-2020-0400
42.0	35.8	4.8	SP-11-2020-0420
45.0	38.8	4.8	SP-11-2020-0450
48.0	38.6	7.1	SP-11-2030-0480
50.0	40.6	7.1	SP-11-2030-0500
52.0	42.6	7.1	SP-11-2030-0520
55.0	45.6	7.1	SP-11-2030-0550
56.0	46.6	7.1	SP-11-2030-0560
60.0	50.6	7.1	SP-11-2030-0600
63.0	53.6	7.1	SP-11-2030-0630
65.0	55.6	7.1	SP-11-2030-0650
70.0	60.6	7.1	SP-11-2030-0700
75.0	65.6	7.1	SP-11-2030-0750
80.0	70.6	7.1	SP-11-2030-0800
85.0	75.6	7.1	SP-11-2030-0850
90.0	80.6	7.1	SP-11-2030-0900
95.0	85.6	7.1	SP-11-2030-0950
100.0	90.6	7.1	SP-11-2030-1000
110.0	100.6	7.1	SP-11-2030-1100
115.0	105.6	7.1	SP-11-2030-1150
120.0	110.6	7.1	SP-11-2030-1200
125.0	112.8	9.5	SP-11-2040-1250
130.0	117.8	9.5	SP-11-2040-1300
135.0	122.8	9.5	SP-11-2040-1350
140.0	127.8	9.5	SP-11-2040-1400
150.0	137.8	9.5	SP-11-2040-1500
160.0	147.8	9.5	SP-11-2040-1600
170.0	157.8	9.5	SP-11-2040-1700
180.0	167.8	9.5	SP-11-2040-1800
190.0	177.8	9.5	SP-11-2040-1900
200.0	187.8	9.5	SP-11-2040-2000
210.0	197.8	9.5	SP-11-2040-2100
220.0	207.8	9.5	SP-11-2040-2200
230.0	217.8	9.5	SP-11-2040-2300
240.0	227.8	9.5	SP-11-2040-2400
250.0	237.8	9.5	SP-11-2040-2500
280.0	267.8	9.5	SP-11-2040-2800
300.0	287.8	9.5	SP-11-2040-3000
320.0	307.8	9.5	SP-11-2040-3200
350.0	337.8	9.5	SP-11-2040-3500

SPEC SEAL Seals & O-rings Specialist

(Metric Size)

Bore Dia.	Groove Dia.	Groove Width.	Reference (For order processing)
D	d	L	
400.0	387.8	9.5	SP-11-2040-4000
420.0	407.8	9.5	SP-11-2040-4200
450.0	437.8	9.5	SP-11-2040-4500
480.0	467.8	9.5	SP-11-2040-4800
500.0	487.8	9.5	SP-11-2040-5000

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. *SP-11 - 2000 - 0060*

Seal ring material code

Series No.

Bore diameter x 10

SPEC SEAL
Seals & O-rings Specialist

Piston Sealing Set - SW+RR

Piston Seals (Single Acting)

SW+RR (Metric Size)

SW+RR

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric-POM	450	-340 +120	0.5

- Excellent sealing performance.
- Good extrusion resistance.
- Excellent wear resistance.
- Easier installation.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C
< 60	4.0
60-120	5.0
120-130	6.5

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Bore Dia.	Groove Dimensions						RR Height	Reference (For order processing)	Reference
D	d	L1	d1	d2	d3	L2	h		
40.0	26.0	9.5	35.4	38.7	21.6	3.1	6.0	CS 040-026-09.5 SW+RR	SW 157 102/1 +RR
45.0	35.0	9.0	42.0	44.1	30.6	2.6	5.0	CS 045-035-09 SW+RR	SW 177 137/5 +RR
50.0	30.0	14.5	44.3	48.3	25.6	3.3	6.5	CS 050-030-14.5 SW+RR	SW 196 118/1 +RR
50.0	40.0	10.5	46.2	48.7	35.6	2.6	5.0	CS 050-040-10.5 SW+RR	SW 196 157/2 +RR
55.0	40.0	11.0	50.4	53.7	35.6	3.1	6.0	CS 055-040-11 SW+RR	SW 216 157/1 +RR
60.0	40.0	14.5	54.2	58.3	35.6	3.3	6.5	CS 060-040-14.5 SW+RR	SW 236 157/2 +RR
63.0	45.0	11.0	58.4	61.6	40.6	3.1	6.0	CS 063-045-11 SW+RR	SW 248 177 +RR
65.0	45.0	14.5	59.3	63.1	40.6	3.3	6.5	CS 065-045-14.5 SW+RR	SW 255 177/1 +RR
65.0	50.0	11.0	60.2	63.2	45.6	3.1	6.0	CS 065-050-11 SW+RR	SW 255 196/2 +RR
70.0	50.0	14.5	64.2	68.3	45.6	3.3	6.5	CS 070-050-14.5 SW+RR	SW 275 196/1 +RR
80.0	60.0	14.5	74.2	78.3	55.6	3.3	6.5	CS 080-060-14.5 SW+RR	SW 314 236/1 +RR
80.0	65.0	11.5	75.4	78.6	60.6	3.1	6.0	CS 080-065-11.5 SW+RR	SW 314 255 +RR
85.0	70.0	12.5	80.3	83.6	65.6	3.1	6.0	CS 085-070-12.5 SW+RR	SW 334 275 +RR
90.0	70.0	14.5	84.2	88.3	65.6	3.3	6.5	CS 090-070-14.5 SW+RR	SW 354 275/1 +RR
95.0	75.0	14.5	89.2	93.3	70.6	3.3	6.5	CS 095-075-14.5 SW+RR	SW 374 295/1 +RR
100.0	80.0	14.5	94.2	98.3	75.6	3.3	6.5	CS 100-080-14.5 SW+RR	SW 393 314/1 +RR
104.5	85.0	13.0	98.8	102.6	80.6	3.1	6.0	CS 104.5-085-13 SW+RR	SW 411 334 +RR
105.0	85.0	13.0	99.1	103.3	80.6	3.3	6.5	CS 105-085-13 SW+RR	SW 413 334/2 +RR
105.0	85.0	14.5	99.1	103.3	80.6	3.3	6.5	CS 105-085-14.5 SW+RR	SW 413 334/1 +RR
110.0	90.0	13.0	104.1	108.3	85.6	3.3	6.5	CS 110-090-13 SW+RR	SW 433 354/2 +RR
115.0	95.0	14.5	109.0	113.3	90.6	3.3	6.5	CS 115-095-14.5 SW+RR	SW 452 374 +RR
120.0	100.0	13.0	114.1	118.3	95.6	3.3	6.5	CS 120-100-13 SW+RR	SW 472 393/1 +RR
125.0	105.0	13.0	119.1	123.3	100.6	3.3	6.5	CS 125-105-13 SW+RR	SW 492 413/1 +RR
130.0	110.0	12.5	123.1	128.0	100.6	3.3	6.5	CS 130-110-12.5 SW+RR	SW 511 433 +RR

SPEC SEAL
Seals & O-rings Specialist

Piston & Rod Seals

Design	Ref.	Material	Pressure (BAR)	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	UPN	PU	400	-40 +95	0.6	●		108
	RSS TTU	PU	400	-40 +95	0.6	●		108
	H-601	PU	400	-45 +110	1	●	●	109
	UNS	PU	350 (700)	-25 +80	1	●		110
	UHS	PU	210 (450)	-25 +80	1	●		110
	MPS	Urethane	400	-40 +100	0.5	●		122
	SKY	NBR	140 (210)	-10 +80	1 (0.5)	●		128
	SKY-F	FPM	140 (210)	-5 +150	0.5	●		128
	KY	NBR	150 (300)	-10 +80	1 (0.5)	●		129
	USH	NBR	140 (210)	-25 +100	1	●		138
	USH-F	FPM	140 (210)	-10 +150	1	●		138
	EVUM	NBR	120	-30 +110	0.25	●		142
	V- Packing F	NBR+Fabric	400	-30 +120	0.5	●	●	146,152
	POLYPAK	Molythane	350	-35 +95	0.5		●	156
	POLYSEAL	Lubrithane	350	-54 +93	0.5		●	157

Note : Packing used with back up ring can stand pressure show in ( ).

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SPEC SEAL

Seals & O-rings Specialist

U-Cup

Piston & Rod Seals

UPN, RSS, TTU (Metric Size)

(Size list on page 111-121)

UPN

RSS, TTU

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-40 +95	0.6

- Low cost, economical solution.
- Simple, easy-construction groove.
- Easy installation.
- Exceptional wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Pressure	Clearance F Max	
Bar	d <60 mm	d >60 mm
50	0.40	0.50
100	0.30	0.40
200	0.20	0.30
300	0.15	0.20
400	0.10	0.15

Piston & Rod Seals

H-601 (Metric Size)

(Size list on page 111-121)

H-601

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	45 +110	1

- General purpose seal.
- Excellent temperature resistance.
- Ease of installation.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Pressure	Clearance F Max	
Bar	d <60 mm	d >60 mm
50	0.40	0.50
100	0.30	0.40
200	0.20	0.30
300	0.15	0.20
400	0.10	0.15

U-Cup

Piston & Rod Seals

UNS, UHS (Metric Size)

(Size list on page 111-121)

UNS

UHS

Type	Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
UNS	PU	350 (700)	- 25 +80	1
UHS	PU	210 (450)		

- Simple groove design.
- Good wear resistance.
- Easy installation.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 μm	≤ 4 μm
Surface of housing	≤ 1.8 μm	≤ 10 μm
Sides of housing	≤ 3.0 μm	≤ 16 μm

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
3.0	9.0	4.5	5.0	UPN 003-009			
4.0	8.0	4.5	5.0	UPN 004-008			
4.0	10.0	4.0	4.5	UPN 004-010/A			
4.0	10.0	4.5	5.0	UPN 004-010			
4.5	11.0	5.0	5.5	UPN 004.5-011			
4.5	12.5	4.4	5.0		UC 004.5-012.5-04.4 H601	4506701	
4.5	12.5	4.5	5.0	UPN 004.5-012.5			
5.0	12.0	5.0	5.5	UPN 005-012/A			
5.0	12.0	5.5	6.5		UC 005-012-05.5 H601	4508601	
5.0	12.0	6.0	6.3	UPN 005-012			
5.0	12.0	6.0	6.5	UPN 005-012/B			
5.0	17.0	9.0	10.0	UPN 005-017			
6.0	12.0	4.0	4.5	UPN 006-012/A			
6.0	12.0	5.5	6.0	UPN 006-012/B			
6.0	12.0	6.0	6.5	UPN 006-012			
6.0	12.7	5.5	6.5	UPN 006-012.7			
6.0	13.0	8.0	9.0		UC 006-013-08 H601	4460300	
6.0	15.0	8.0	9.0	UPN 006-015			
6.3	16.3	8.0	9.0				UNS-006.3
7.0	14.0	3.5	4.2	UPN 007-014			
7.0	15.0	7.0	8.0	UPN 007-015			
7.1	17.1	8.0	9.0				UNS-007.1
8.0	12.0	2.4	3.5	UPN 008-012			
8.0	14.0	6.0	7.0	UPN 008-014			
8.0	15.0	5.7	6.3	UPN 008-015			
8.0	15.0	8.0	9.0	UPN 008-015/A			
8.0	16.0	5.7	6.3	UPN 008-016			
8.0	18.0	8.0	9.0				UNS-008
8.0	18.0	9.0	10.0	UPN 008-018			
8.0	22.0	8.0	9.0	UPN 008-022			
9.0	15.0	8.0	9.0	UPN 009-015			
9.0	19.0	6.0	7.0	UPN 009-019			
9.0	19.0	8.0	9.0				UNS-009
10.0	16.0	6.0	6.5	UPN 010-016			
10.0	16.0	6.0	6.5	UPN 010-016/A			
10.0	18.0	5.5	6.0	UPN 010-018/A			
10.0	18.0	6.0	7.0	UPN 010-018/B			
10.0	18.0	6.0	6.6		UC 010-018-06 H601	4299900	
10.0	18.0	8.0	9.0	UPN 010-018			
10.0	20.0	8.0	9.0	UPN 010-020	UC 010-020-08 H601	4600000	UNS-010

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

U-Cup

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
10.0	22.0	6.0	7.0	UPN 010-022			
10.0	22.0	8.0	9.0	UPN 010-022/A			
11.0	17.0	4.4	5.0	UPN 011-017			
11.0	20.5	6.0	7.0	UPN 011-020.5			
11.2	19.2	5.0	5.7				UHS-011.2
11.2	21.2	8.0	9.0				UNS-011.2
12.0	18.0	6.0	7.0	UPN 012-018			
12.0	20.0	4.4	5.0		UC 012-020-04.4 H601	4182501	
12.0	20.0	8.0	9.0	UPN 012-020			
12.0	22.0	5.0	6.0	UPN 012-022/A			
12.0	22.0	7.0	8.0	UPN 012-022			
12.0	22.0	8.0	9.0	UPN 012-022/B			
12.0	24.0	8.0	9.0	UPN 012-024			
12.0	24.0	9.0	10.0	UPN 012-024/A			
12.0	25.0	8.0	9.0	UPN 012-025	UC 012-025-08 H601	4600100	
12.0	25.0	10.0	11.0	UPN 012-025/A			
12.5	22.5	8.0	9.0				UNS-012.5
14.0	20.0	4.8	5.3	UPN 014-020			
14.0	22.0	4.4	5.0		UC 014-022-04.4 H601	4182601	
14.0	22.0	5.0	5.7		UC 014-022-05 H601	4604000	UHS-014
14.0	22.0	6.0	7.0	UPN 014-022			
14.0	22.0	8.0	9.0	UPN 014-022/A			
14.0	22.0	11.0	12.0	UPN 014-022/B			
14.0	24.0	8.0	9.0	UPN 014-024	UC 014-024-08 H601	4600200	UNS-014
15.0	25.0	8.0	9.0	UPN 015-025	UC 015-025-08 H601	4600300	UNS-015
15.0	27.0	6.0	7.0	UPN 015-027			
15.0	28.0	10.0	11.0	UPN 015-028			
16.0	22.0	4.0	4.5	UPN 016-022/A			
16.0	22.0	5.0	5.5	UPN 016-022			
16.0	24.0	4.4	5.0		UC 016-024-04.4 H601	4182701	
16.0	24.0	5.0	6.0	UPN 016-024/A			
16.0	24.0	5.0	5.7		UC 016-024-05 H601	4604100	UHS-016
16.0	24.0	9.0	10.0	UPN 016-024			
16.0	26.0	5.0	6.0	UPN 016-026			
16.0	26.0	8.0	9.0	UPN 016-026/A	UC 016-026-08 H601	4600400	UNS-016
16.0	28.0	6.0	7.0	UPN 016-028			
16.0	32.0	8.0	9.0	UPN 016-032			
17.0	25.0	10.0	11.0	UPN 017-025			
18.0	25.0	5.0	5.5	UPN 018-025			
18.0	26.0	4.4	5.0		UC 018-026-04.4 H601	4182901	

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width	Reference	Reference	Reference	Reference
d	D	H	L				
18.0	26.0	5.0	5.7		UC 018-026-05 H601	4604200	UHS-018
18.0	26.0	6.5	7.5	UPN 018-026/A			
18.0	26.0	8.0	9.0	UPN 018-026/B			
18.0	26.0	8.5	9.5	UPN 018-026			
18.0	28.0	7.3	8.0		UC 018-028-07.3 H601	4547900	
18.0	28.0	8.0	9.0	UPN 018-028	UC 018-028-08 H601	4600500	UNS-018
18.0	30.0	8.0	9.0	UPN 018-030			
19.0	25.0	6.0	7.0	UPN 019-025			
20.0	28.0	4.0	5.0	UPN 020-028			
20.0	28.0	4.4	5.0		UC 020-028-04.4 H601	4183001	
20.0	28.0	5.0	5.7		UC 020-028-05 H601	4604300	UHS-020
20.0	28.0	8.0	9.0	UPN 020-28/A			
20.0	29.0	5.0	5.5	UPN 020-029			
20.0	30.0	8.0	9.0	UPN 020-030	UC 020-030-08 H601	4600600	UNS-020
20.0	30.0	10.0	11.0	UPN 020-030/A			
20.0	32.0	7.5	8.5	UPN 020-032			
20.0	35.0	12.0	13.0	UPN 020-035			
20.0	39.0	10.0	11.0	UPN 020-039			
20.0	40.0	10.0	11.0	UPN 020-040			
20.0	40.0	12.0	13.0	UPN 020-040/A			
22.0	28.0	8.0	9.0	UPN 022-028			
22.0	30.0	4.4	5.0		UC 022-030-04.4 H601	4183101	
22.0	30.0	6.0	7.0	UPN 022-030			
22.0	30.0	10.0	11.0	UPN 022-030/A			
22.0	32.0	8.0	9.0	UPN 022-032			
22.0	32.0	10.0	11.0	UPN 022-032/A			
22.0	35.0	10.0	11.0	UPN 022-035	UC 022-035-10 H601	4600700	
22.4	30.0	5.0	5.7		UC 022.4-030-05 H601	4604400	UHS-022.4
22.4	32.4	8.0	9.0		UC 022.4-032.4-08 H601	4600800	UNS-022.4
23.5	31.5	5.0	5.7				UHS-023.5
24.0	32.0	7.0	8.0	UPN 024-032			
24.0	40.0	8.0	9.0	UPN 024-040			
25.0	33.0	4.4	5.0		UC 025-033-04.4 H601	4183301	
25.0	33.0	5.0	5.7		UC 025-033-05 H601	4604500	UHS-025
25.0	35.0	5.0	5.5	UPN 025-035			
25.0	35.0	8.0	9.0	UPN 025-035/B	UC 025-035-08 H601	4600900	UNS-025
25.0	35.0	10.0	11.0	UPN 025-035/A	UC 025-035-10 H601	4362600	
25.0	38.0	8.0	9.0		UC 025-038-08 H601	4601000	
25.0	38.0	10.0	11.0	UPN 025-038			
25.0	40.0	10.0	11.0	UPN 025-040	UC 025-040-10 H601	4601100	

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

U-Cup

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
28.0	35.0	5.0	5.5	UPN 028-035			
28.0	35.5	5.0	5.7		UC 028-035.5-05 H601	4604600	UHS-028
28.0	36.0	6.5	7.5	UPN 028-036			
28.0	36.0	6.5	7.1		UC 028-036-06.5 H601	4506201	
28.0	38.0	8.0	9.0	UPN 028-038			
28.0	38.0	5.6	6.3		UC 028-038-05.6 H601	4183401	
28.0	40.0	10.0	11.0	UPN 028-040	UC 028-040-10 H601	4601200	
28.0	43.0	10.0	11.0		UC 028-043-10 H601	4601300	UNS-028
30.0	38.0	6.0	6.5	UPN 030-038			
30.0	40.0	5.0	5.5	UPN 030-040/A			
30.0	40.0	5.6	6.3		UC 030-040-05.6 H601	4183501	
30.0	40.0	6.0	7.0		UC 030-040-06 H601	4604700	UHS-030
30.0	40.0	10.0	11.0	UPN 030-040	UC 030-040-10 H601	4362700	
30.0	42.0	9.0	10.0	UPN 030-042/A			
30.0	42.0	10.0	11.0	UPN 030-042			
30.0	45.0	10.0	11.0	UPN 030-045	UC 030-045-10 H601	4601400	UNS-030
30.0	50.0	10.0	11.0	UPN 030-050/A			
30.0	50.0	12.0	13.0	UPN 030-050			
31.5	41.5	6.0	7.0		UC 031.5-041.5-06 H601	4604800	UHS-031.5
31.5	46.5	10.2	11.0				UNS-031.5
32.0	40.0	5.5	6.0	UPN 032-040			
32.0	40.0	8.0	9.0	UPN 032-040/A			
32.0	42.0	5.6	6.3		UC 032-042-05.6 H601	4183601	
32.0	42.0	6.0	7.0		UC 032-042-06 H601	4604900	
32.0	42.0	10.0	11.0	UPN 032-042	UC 032-042-10 H601	4362800	
32.0	45.0	10.0	11.0	UPN 032-045			
32.0	50.0	12.0	13.0	UPN 032-050			
34.0	45.0	7.0	8.0	UPN 034-045			
34.0	45.0	9.0	10.0	UPN 034-045/A			
34.0	50.0	14.0	15.0	UPN 034-050			
34.0	70.0	10.0	11.0	UPN 034-070			
34.0	74.0	10.0	11.0	UPN 034-074			
35.0	45.0	6.0	7.0		UC 035-045-06 H601	4605000	UHS-035
35.0	45.0	7.0	8.0		UC 035-045-07 H601	4496000	
35.0	45.0	8.0	9.0	UPN 035-045/A			
35.0	45.0	10.0	11.0	UPN 035-045			
35.0	48.0	10.0	11.0	UPN 035-048	UC 035-048-10 H601	4360300	
35.0	50.0	10.0	11.0	UPN 035-050			
35.0	50.0	10.0	11.0		UC 035-050-10 H601	4601500	UNS-035
35.0	55.0	10.0	11.0	UPN 035-055/A			

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
35.0	55.0	12.0	13.0	UPN 035-055			
35.5	45.0	6.0	7.0		UC 035.5-045-06 H601	4605100	UHS-035.5
35.5	50.5	10.2	11.0				UNS-035.5
36.0	46.0	5.6	6.3		UC 036-046-05.6 H601	4183701	
36.0	46.0	7.0	8.0	UPN 036-046			
36.0	70.0	10.0	11.0	UPN 036-070			
38.0	45.0	5.0	5.5	UPN 038-045			
38.0	46.0	6.5	7.5	UPN 038-046			
38.0	48.0	6.0	7.0		UC 038-048-06 H601	4605200	UHS-038
38.0	50.0	9.0	10.0	UPN 038-050			
38.0	55.0	9.7	11.0		UC 038-055-09.7 H601	4366000	
38.0	55.0	10.0	11.0	UPN 038-055			
38.0	58.0	9.7	11.0		UC 038-058-09.7 H601	4560100	
38.0	58.0	10.0	11.0	UPN 038-058			
40.0	48.0	11.0	12.0	UPN 040-048			
40.0	50.0	5.6	6.3		UC 040-050-05.6 H601	4183801	
40.0	50.0	6.0	7.0		UC 040-050-06 H601	4605300	UHS-040
40.0	50.0	5.6	6.3		UC 040-050-05.6 H601	4183801	
40.0	50.0	6.5	7.5	UPN 040-050/A			
40.0	50.0	8.0	9.0	UPN 040-050/B			
40.0	50.0	10.0	11.0	UPN 040-050	UC 040-050-10 H601	4362900	
40.0	55.0	9.9	11.0		UC 040-055-09.9 H601	4388500	
40.0	55.0	10.0	11.0	UPN 040-055	UC 040-055-10 H601	4601600	UNS-040
40.0	56.0	10.0	11.0	UPN 040-056			
40.0	60.0	10.0	11.0	UPN 040-060/A			
40.0	60.0	12.0	13.0		UC 040-060-12 H601	4601700	
40.0	60.0	13.0	14.0	UPN 040-060			
40.0	60.0	18.0	19.0	UPN 040-060/B			
40.0	65.0	12.0	13.0	UPN 040-065			
40.0	70.0	15.0	16.0	UPN 040-070			
40.0	75.0	10.0	11.0	UPN 040-075			
42.0	50.0	8.0	9.0	UPN 042-050			
42.0	52.0	9.0	10.0	UPN 042-052			
42.0	62.0	12.0	13.0	UPN 042-062			
45.0	55.0	5.6	6.3		UC 045-055-05.6 H601	4183901	
45.0	55.0	6.0	7.0		UC 045-055-06 H601	4605400	UHS-045A
45.0	55.0	6.5	7.5	UPN 045-055/A			
45.0	55.0	10.0	11.0	UPN 045-055	UC 045-055-10 H601	4363000	
45.0	56.0	7.0	8.0		UC 045-056-07 H601	4605500	UHS-045
45.0	60.0	10.0	11.0	UPN 045-060	UC 045-060-10 H601	4601800	UNS-045

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

U-Cup

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
45.0	63.0	10.0	11.0	UPN 045-063			
45.0	65.0	10.0	11.0	UPN 045-065			
45.0	65.0	12.0	13.0	UPN 045-065/A			
46.0	56.0	6.0	7.0		UC 046-056-06 H601	4543900	
48.0	58.0	10.0	11.0	UPN 048-058			
48.0	63.0	10.0	11.0		UC 048-063-10 H601	4601900	UNS-048
50.0	60.0	5.6	6.3		UC 050-060-05.6 H601	4184001	
50.0	60.0	6.0	7.0		UC 050-060-06 H601	4605600	UHS-050
50.0	60.0	10.0	11.0	UPN 050-060	UC 050-060-10 H601	4363100	
50.0	60.0	11.0	12.0	UPN 050-060/A			
50.0	62.0	9.0	10.0	UPN 050-062			
50.0	63.0	6.0	7.0	UPN 050-063			
50.0	65.0	10.0	11.0	UPN 050-065	UC 050-065-10 H601	4602000	UNS-050
50.0	70.0	10.0	11.0	UPN 050-070			
50.0	70.0	12.0	13.0	UPN 050-070/A	UC 050-070-12 H601	4602100	
50.0	70.0	18.0	19.0	UPN 050-070/B			
52.0	62.0	10.0	11.0		UC 052-062-10 H601	4559000	
52.0	62.0	12.0	13.0	UPN 052-062			
53.0	63.0	6.0	7.0		UC 053-063-06 H601	4605700	UHS-053
53.0	63.0	6.5	7.5	UPN 053-063			
53.0	73.0	12.0	13.0				UNS-053
55.0	65.0	6.0	7.0		UC 055-065-06 H601	4605800	UHS-055
55.0	65.0	10.0	11.0	UPN 055-065/A			
55.0	65.0	12.0	13.0	UPN 055-065			
55.0	70.0	12.0	13.0	UPN 055-070			
55.0	75.0	12.0	13.0	UPN 055-075	UC 055-075-12 H601	4602200	UNS-055
55.0	80.0	12.0	13.0	UPN 055-080			
56.0	66.0	6.0	7.0		UC 056-066-06 H601	4605900	UHS-056
56.0	71.0	8.4	9.5		UC 056-071-08.4 H601	4184201	
56.0	76.0	12.0	13.0				UNS-056
58.0	68.0	6.0	7.0				UHS-058
60.0	70.0	6.0	7.0		UC 060-070-06 H601	4606000	UHS-060A
60.0	70.0	8.0	9.0	UPN 060-070/A			
60.0	70.0	10.0	11.0	UPN 060-070/B	UC 060-070-10 H601	4363200	
60.0	70.0	12.0	13.0	UPN 060-070			
60.0	71.0	7.0	8.0		UC 060-071-07 H601	4606100	UHS-060
60.0	75.0	10.0	11.0	UPN 060-075/A			
60.0	75.0	12.0	13.0	UPN 060-075			
60.0	76.0	12.0	13.0		UC 060-076-12 H601	4608000	
60.0	80.0	10.0	11.0	UPN 060-080			

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width	Reference	Reference	Reference	Reference
d	D	H	L				
60.0	80.0	12.0	13.0	UPN 060-080/A	UC 060-080-12 H601	4602300	UNS-060
60.0	80.0	18.0	19.0	UPN 060-080/B			
60.0	85.0	12.5	13.5	UPN 060-085			
60.0	90.0	15.0	16.0	UPN 060-090			
63.0	73.0	6.0	7.0		UC 063-073-06 H601	4606200	UHS-063
63.0	73.0	11.8	13.0		UC 063-073-11.8 H601	4363300	
63.0	75.0	10.0	11.0	UPN 063-075			
63.0	78.0	8.4	9.5		UC 063-078-08.4 H601	4184301	
63.0	78.0	10.0	11.0	UPN 063-078			
63.0	83.0	12.0	13.0				UNS-063
63.0	83.0	15.0	16.0	UPN 063-083			
65.0	75.0	6.0	7.0		UC 065-075-06 H601	4606300	UHS-065
65.0	75.0	12.0	13.0	UPN 065-075			
65.0	80.0	8.4	9.5		UC 065-080-08.4 H601	4184401	
65.0	80.0	11.0	12.0	UPN 065-080/A			
65.0	80.0	12.0	13.0	UPN 065-080			
65.0	85.0	10.0	11.0	UPN 065-085/A			
65.0	85.0	12.0	13.0	UPN 065-085	UC 065-085-12 H601	4602400	UNS-065
66.0	76.0	8.0	9.0	UPN 066-076			
66.0	80.0	10.0	11.0	UPN 066-080			
66.0	80.0	13.0	14.0	UPN 066-080/A			
67.0	77.0	6.0	7.0				UHS-067
67.0	77.0	10.0	11.0	UPN 067-077/A			
67.0	77.0	12.0	13.0	UPN 067-077			
67.0	87.0	12.0	13.0				UNS-067
70.0	80.0	5.0	6.0	UPN 070-080/C			
70.0	80.0	6.0	7.0		UC 070-080-06 H601	4606400	UHS-070
70.0	80.0	8.0	9.0	UPN 070-080/A			
70.0	80.0	10.0	11.0	UPN 070-080/B			
70.0	80.0	12.0	13.0	UPN 070-080	UC 070-080-12 H601	4363400	
70.0	85.0	8.4	9.5		UC 070-085-08.4 H601	4184501	
70.0	85.0	12.0	13.0	UPN 070-085			
70.0	90.0	12.0	13.0	UPN 070-090	UC 070-090-12 H601	4602500	UNS-070
70.0	90.0	18.0	19.0	UPN 070-090/A			
70.0	92.0	12.0	13.0		UC 070-092-12 H601	4602600	
70.0	95.0	12.0	13.0	UPN 070-095			
71.0	80.0	6.0	7.0		UC 071-080-06 H601	4606500	UHS-071
71.0	91.0	12.0	13.0				UNS-071
75.0	85.0	6.0	7.0		UC 075-085-06 H601	4606600	UHS-075
75.0	85.0	12.0	13.0	UPN 075-085	UC 075-085-12 H601	4363500	

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

U-Cup

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
75.0	90.0	7.5	8.5	UPN 075-090			
75.0	90.0	10.0	11.0	UPN 075-090/B			
75.0	90.0	12.0	13.0	UPN 075-090/A			
75.0	95.0	12.0	13.0	UPN 075-095	UC 075-095-12 H601	4602700	UNS-075
78.0	93.0	10.5	11.5	UPN 078-093			
80.0	90.0	6.0	7.0		UC 080-090-06 H601	4606700	UHS-080
80.0	90.0	8.0	8.7		UC 080-090-08 H601	4159001	
80.0	90.0	10.0	11.0	UPN 080-090			
80.0	90.0	12.0	13.0	UPN 080-090/A	UC 080-090-12 H601	4363600	
80.0	95.0	8.4	9.5		UC 080-095-08.4 H601	4184601	
80.0	95.0	12.0	13.0	UPN 080-095			
80.0	100.0	10.0	11.0	UPN 080-100			
80.0	100.0	12.0	13.0	UPN 080-100/A	UC 080-100-12 H601	4602800	UNS-080
82.0	92.0	10.0	11.0	UPN 082-092			
84.5	94.0	8.0	8.8	UPN 084.5-094			
85.0	95.0	8.5	9.5	UPN 085-095			
85.0	95.0	12.0	13.0	UPN 085-095/A			
85.0	100.0	8.4	9.5		UC 085-100-08.4 H601	4184701	
85.0	100.0	9.0	10.0		UC 085-100-09 H601	4606800	UHS-085
85.0	100.0	12.0	13.0	UPN 085-100			
85.0	105.0	12.0	13.0	UPN 085-105	UC 085-105-12 H601	4602900	UNS-085
85.0	115.0	15.0	16.0	UPN 085-115			
90.0	100.0	7.0	8.0	UPN 090-100/B			
90.0	100.0	8.0	9.0	UPN 090-100			
90.0	100.0	12.0	13.0	UPN 090-100/A	UC 090-100-12 H601	4363700	
90.0	105.0	8.4	9.5		UC 090-105-08.4 H601	4184801	
90.0	105.0	9.0	10.0		UC 090-105-09 H601	4606900	UHS-090
90.0	105.0	12.0	13.0	UPN 090-105			
90.0	110.0	12.0	13.0	UPN 090-110	UC 090-110-12 H601	4603000	UNS-090
90.0	110.0	18.0	19.0	UPN 090-110/A			
90.0	115.0	22.0	23.0	UPN 090-115			
95.0	110.0	9.0	10.0		UC 095-110-09 H601	4607000	UHS-095
95.0	110.0	12.0	13.0	UPN 095-110			
95.0	110.0	15.0	16.0	UPN 095-110/A			
95.0	112.0	11.0	12.0	UPN 095-112			
95.0	115.0	12.0	13.0	UPN 095-115	UC 095-115-12 H601	4603100	UNS-095
95.0	115.0	18.0	19.0	UPN 095-115/A			
98.0	112.0	9.0	10.0				UHS-098
100.0	115.0	9.0	10.0		UC 100-115-09 H601	4607100	UHS-100
100.0	115.0	12.0	13.0	UPN 100-115			

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width	Reference	Reference	Reference	Reference
d	D	H	L				
100.0	120.0	11.0	12.5		UC 100-120-11 H601	4184901	
100.0	120.0	12.0	13.0	UPN 100-120	UC 100-120-12 H601	4603200	UNS-100
100.0	125.0	12.0	13.0	UPN 100-125			
100.0	125.0	15.0	16.0	UPN 100-125/A			
100.0	130.0	12.0	13.0	UPN 100-130			
105.0	120.0	8.0	9.0	UPN 105-120			
105.0	120.0	15.0	16.0	UPN 105-120/A			
105.0	125.0	11.4	12.5		UC 105-125-11.4 H601	4185001	
105.0	125.0	12.0	13.0	UPN 105-125/A			
105.0	125.0	15.0	16.0	UPN 105-125			
105.0	125.0	15.0	17.0		UC 105-125-15 H601	4603300	
105.0	125.0	16.0	17.0				UNS-105
106.0	120.0	8.5	9.5	UPN 106-120			
106.0	126.0	16.0	17.0				UNS-106
110.0	125.0	12.0	13.0	UPN 110-125			
110.0	125.0	15.0	16.0	UPN 110-125/A			
110.0	130.0	11.0	12.5		UC 110-130-11 H601	4185101	
110.0	130.0	15.0	16.0	UPN 110-130			
110.0	130.0	15.0	17.0		UC 110-130-15 H601	4603400	
110.0	130.0	16.0	17.0				UNS-110
110.0	130.0	18.0	19.0	UPN 110-130/A			
112.0	125.0	9.0	10.0		UC 112-125-09 H601	4607200	UHS-112
112.0	132.0	16.0	17.0				UNS-112
113.0	125.0	9.5	10.5	UPN 113-125			
115.0	126.0	15.0	16.0	UPN 115-126			
115.0	135.0	15.0	16.0	UPN 115-135			
115.0	135.0	15.0	17.0		UC 115-135-15 H601	4608100	
115.0	140.0	15.0	16.0	UPN 115-140/A			
115.0	140.0	22.0	23.0	UPN 115-140			
118.0	138.0	16.0	17.0				UNS-118
120.0	130.0	14.0	15.0	UPN 120-130			
120.0	135.0	15.0	16.0	UPN 120-135			
120.0	140.0	14.5	16.0		UC 120-140-14.5 H601	4319600	
120.0	140.0	15.0	16.0	UPN 120-140			
120.0	140.0	15.0	17.0		UC 120-140-15 H601	4603500	
120.0	140.0	16.0	17.0				UNS-120
125.0	140.0	9.0	10.0		UC 125-140-09 H601	4607300	UHS-125
125.0	140.0	11.0	12.0	UPN 125-140			
125.0	140.0	15.0	16.0	UPN 125-140/A			
125.0	145.0	11.0	12.5		UC 125-145-11 H601	4185201	

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

U-Cup

(Metric Size)

Rod/ Groove Dia. d	Bore/ Groove Dia. D	Seal Height H	Groove Width L	Reference	Reference	Reference	Reference
125.0	145.0	15.0	16.0	UPN 125-145			
125.0	145.0	15.0	17.0		UC 125-145-15 H601	4603600	
125.0	145.0	16.0	17.0				UNS-125
125.0	145.0	18.0	19.0	UPN 125-145/A			
125.0	155.0	15.0	16.0	UPN 125-155			
130.0	150.0	15.0	16.0	UPN 130-150			
130.0	150.0	15.0	17.0		UC 130-150-15 H601	4603700	
130.0	150.0	16.0	17.0				UNS-130
135.0	155.0	15.0	16.0	UPN 135-155			
135.0	160.0	15.0	16.0	UPN 135-160			
136.0	150.0	8.5	9.5		UC 136-150-08.5 H601	4607400	
136.0	150.0	9.0	10.0				UHS-136
136.0	154.0	9.0	10.0		UC 136-154-09 H601	4607900	
140.0	155.0	9.0	10.0		UC 140-155-09 H601	4607500	UHS-140
140.0	155.0	15.0	16.0	UPN 140-155/AI			
140.0	160.0	12.0	13.0	UPN 140-160/A			
140.0	160.0	15.0	16.0	UPN 140-160			
140.0	160.0	15.0	17.0		UC 140-160-15 H601	4603800	
140.0	160.0	16.0	17.0				UNS-140
145.0	160.0	9.0	10.0		UC 145-160-09 H601	4607600	UHS-145
145.0	165.0	15.0	16.0	UPN 145-165			
145.0	165.0	15.0	17.0		UC 145-165-15 H601	4608200	
150.0	165.0	8.9	10.0		UC 150-165-08.9 H601	4607700	
150.0	170.0	15.0	16.0	UPN 150-170			
150.0	170.0	15.0	17.0		UC 150-170-15 H601	4603900	
150.0	170.0	16.0	17.0				UNS-150
150.0	170.0	18.0	19.0	UPN 150-170/1			
155.0	180.0	15.0	17.0		UC 155-180-15 H601	4608300	
160.0	175.0	9.0	10.0		UC 160-175-09 H601	4608400	
160.0	180.0	15.0	16.0	UPN 160-180			
160.0	185.0	15.0	17.0		UC 160-185-15 H601	4608500	
165.0	180.0	9.0	10.0		UC 165-180-09 H601	4608600	
165.0	183.0	10.0	11.0		UC 165-183-10 H601	4607800	
165.0	190.0	15.0	17.0		UC 165-190-15 H601	4608700	
170.0	190.0	15.0	16.0	UPN 170-190			
170.0	195.0	15.0	17.0		UC 170-195-15 H601	4608800	
170.0	200.0	18.0	19.0	UPN 170-200			
175.0	200.0	15.0	16.0	UPN 175-200			
175.0	200.0	15.0	17.0		UC 175-200-15 H601	4608900	
180.0	200.0	12.0	13.0		UC 180-200-12 H601	4609000	

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width	Reference	Reference	Reference	Reference
d	D	H	L				
180.0	200.0	15.0	16.0	UPN 180-200			
180.0	205.0	15.0	17.0		UC 180-205-15 H601	4609100	
180.0	220.0	20.0	21.0	UPN 180-220			
190.0	210.0	12.0	13.0		UC 190-210-12 H601	4609200	
190.0	215.0	15.0	17.0		UC 190-215-15 H601	4609300	
200.0	220.0	12.0	13.0		UC 200-220-12 H601	4609400	
200.0	225.0	15.0	17.0		UC 200-225-15 H601	4609500	
200.0	225.0	18.2	19.0	UPN 200-225			
210.0	235.0	18.0	20.0		UC 210-235-18 H601	4609600	
220.0	240.0	12.0	13.0		UC 220-240-12 H601	4609700	
220.0	250.0	17.0	19.2		UC 220-250-17 H601	4426600	
220.0	250.0	18.0	19.0	UPN 220-250			
225.0	245.0	15.0	16.0	UPN 225-245			
230.0	250.0	12.0	13.0		UC 230-250-12 H601	4609800	
240.0	265.0	18.0	20.0		UC 240-265-18 H601	4609900	
245.0	270.0	15.0	16.0	UPN 245-270			
250.0	275.0	18.0	20.0		UC 250-275-18 H601	4610000	
260.0	290.0	18.0	20.0		UC 260-290-18 H601	4620100	
265.0	290.0	17.0	18.0	UPN 265-290			
265.0	295.0	18.0	20.0		UC 265-295-18 H601	4620200	
270.0	290.0	17.0	18.0	UPN 270-290			
270.0	300.0	15.0	16.0	UPN 270-300			
270.0	300.0	18.0	20.0		UC 270-300-18 H601	4620300	
280.0	300.0	15.0	16.0	UPN 280-300			
280.0	310.0	18.0	20.0		UC 280-310-18 H601	4620400	
290.0	320.0	18.0	20.0		UC 290-320-18 H601	4620500	
300.0	330.0	18.0	20.0		UC 300-330-18 H601	4620600	
305.0	320.0	17.0	18.0	UPN 305-320			
360.0	390.0	22.0	23.0	UPN 360-390			
375.0	405.0	22.0	24.0		UC 375-405-22 H601	4620700	
400.0	425.0	25.0	27.0		UC 400-425-25 H601	4620800	
450.0	485.0	25.0	27.0		UC 450-485-25 H601	4620900	

* For order processing, the computer code will be
e.g. UC 003-009-04.5 UPN, UC 004.5-012.5-04.4 H601

Rubber Energized U-Cup

Piston & Rod Seals

MPS (Metric Size)

MPS

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
Urethane	400	-40 +100	0.5

- Molded from tough polyurethane materal.
- Offer high resistance to wear and abrasion.
- Energized with a four-lobed ring they have greaty increased.
- Low pressure performance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 μm	≤ 4 μm
Surface of housing	≤ 1.8 μm	≤ 10 μm
Sides of housing	≤ 3.0 μm	≤ 16 μm

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)
8.0	16.0	5.7	6.3	UC-008-016-05.7 MPS	22.0	30.0	5.7	6.3	UC-022-030-05.7 MPS
9.0	19.0	8.0	9.0	UC-009-019-08 MPS	22.0	30.0	7.0	8.0	UC-022-030-07 MPS
10.0	16.0	3.3	4.0	UC-010-016-03.3 MPS	22.0	30.0	8.0	9.0	UC-022-030-08 MPS
10.0	16.0	6.0	7.0	UC-010-016-06 MPS	22.0	32.0	7.0	8.0	UC-022-032-07 MPS
10.0	18.0	5.7	6.3	UC-010-018-05.7 MPS	22.0	32.0	7.3	8.0	UC-022-032-07.3 MPS
10.0	18.0	6.5	7.5	UC-010-018-06.5 MPS	22.0	32.0	8.0	9.0	UC-022-032-08 MPS
10.0	20.0	8.0	9.0	UC-010-020-08 MPS	22.0	35.0	8.0	9.0	UC-022-035-08 MPS
11.2	19.2	5.0	5.7	UC-011.2-019.2-05 MPS	22.0	35.0	10.0	11.0	UC-022-035-10 MPS
12.0	19.0	4.6	5.3	UC-012-019-04.6 MPS	22.0	40.0	12.0	13.0	UC-022-040-12 MPS
12.0	20.0	6.4	7.0	UC-012-020-06.4 MPS	22.4	30.0	5.0	5.7	UC-022.4-030-05 MPS
12.0	22.0	7.3	8.0	UC-012-022-07.3 MPS	22.4	30.0	5.5	6.2	UC-022.4-030-05.5 MPS
12.5	22.5	8.0	9.0	UC-012.5-022.5-08 MPS	22.4	32.4	8.0	9.0	UC-022.4-032.4-08 MPS
14.0	21.0	4.6	5.3	UC-014-021-04.6 MPS	23.5	31.5	5.0	5.7	UC-023.5-031.5-05 MPS
14.0	22.0	5.0	5.7	UC-014-022-05 MPS	25.0	31.0	8.0	9.0	UC-025-031-08 MPS
14.0	24.0	5.5	6.5	UC-014-024-05.5 MPS	25.0	33.0	5.0	5.7	UC-025-033-05 MPS
14.0	24.0	8.0	9.0	UC-014-024-08 MPS	25.0	33.0	5.5	6.2	UC-025-033-05.5 MPS
15.0	22.0	5.0	5.7	UC-015-022-05 MPS	25.0	33.0	5.7	6.3	UC-025-033-05.7 MPS
15.0	25.0	8.0	9.0	UC-015-025-08 MPS	25.0	33.0	8.0	9.0	UC-025-033-08 MPS
16.0	24.0	5.0	5.7	UC-016-024-05 MPS	25.0	3 3.0	10.0	11.0	UC-025-033-10 MPS
16.0	26.0	8.0	9.0	UC-016-026-08 MPS	25.0	35.0	6.0	7.0	UC-025-035-06 MPS
17.0	25.0	10.0	11.0	UC-017-025-10 MPS	25.0	35.0	7.3	8.0	UC-025-035-07.3 MPS
18.0	25.0	4.6	5.3	UC-018-025-04.6 MPS	25.0	35.0	8.0	9.0	UC-025-035-08 MPS
18.0	26.0	5.0	5.7	UC-018-026-05 MPS	25.0	35.0	10.0	11.0	UC-025-035-10 MPS
18.0	28.0	5.0	5.7	UC-018-028-05 MPS	25.0	38.0	8.0	9.0	UC-025-038-08 MPS
18.0	28.0	8.0	9.0	UC-018-028-08 MPS	25.0	38.0	10.0	11.0	UC-025-038-10 MPS
18.0	28.0	10.0	11.0	UC-018-028-10 MPS	28.0	35.5	5.0	5.7	UC-028-035.5-05 MPS
20.0	26.0	5.0	5.7	UC-020-026-05 MPS	28.0	35.5	5.2	5.7	UC-028-035.5-05.2 MPS
20.0	27.0	6.0	7.0	UC-020-027-06 MPS	28.0	36.0	5.3	6.0	UC-028-036-05.3 MPS
20.0	28.0	5.0	5.7	UC-020-028-05 MPS	28.0	36.0	8.0	9.0	UC-028-036-08 MPS
20.0	28.0	5.7	6.3	UC-020-028-05.7 MPS	28.0	38.0	7.3	8.0	UC-028-038-07.3 MPS
20.0	28.0	7.2	8.0	UC-020-028-07.2 MPS	28.0	38.0	8.0	9.0	UC-028-038-08 MPS
20.0	30.0	6.0	7.0	UC-020-030-06 MPS	28.0	38.0	10.0	11.0	UC-028-038-10 MPS
20.0	30.0	7.2	8.0	UC-020-030-07.2 MPS	28.0	40.0	10.0	11.0	UC-028-040-10 MPS
20.0	30.0	8.0	9.0	UC-020-030-08 MPS	28.0	43.0	10.0	11.0	UC-028-043-10 MPS
20.0	32.0	6.0	7.0	UC-020-032-06 MPS	28.0	43.0	10.2	11.0	UC-028-043-10.2 MPS
20.0	35.0	10.0	11.0	UC-020-035-10 MPS	28.0	48.0	12.0	13.0	UC-028-048-12 MPS
20.0	40.0	12.0	13.0	UC-020-040-12 MPS	30.0	38.0	5.7	6.3	UC-030-038-05.7 MPS
22.0	28.0	5.0	5.7	UC-022-028-05 MPS	30.0	38.0	6.3	7.0	UC-030-038-06.3 MPS
22.0	29.0	4.6	5.3	UC-022-029-04.6 MPS	30.0	38.0	8.0	9.0	UC-030-038-08 MPS
22.0	30.0	5.0	5.7	UC-022-030-05 MPS	30.0	40.0	6.0	7.0	UC-030-040-06 MPS

Rubber Energized U-Cup

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)
30.0	40.0	6.5	7.0	UC-030-040-06.5 MPS	40.0	48.0	8.0	9.0	UC-040-048-08 MPS
30.0	40.0	7.0	8.0	UC-030-040-07 MPS	40.0	50.0	6.0	7.0	UC-040-050-06 MPS
30.0	40.0	7.3	8.0	UC-030-040-07.3 MPS	40.0	50.0	6.5	7.0	UC-040-050-06.5 MPS
30.0	40.0	8.0	9.0	UC-030-040-08 MPS	40.0	50.0	7.3	8.0	UC-040-050-07.3 MPS
30.0	40.0	10.0	11.0	UC-030-040-10 MPS	40.0	50.0	10.0	11.0	UC-040-050-10 MPS
30.0	42.0	9.0	10.0	UC-030-042-09 MPS	40.0	53.0	8.0	9.0	UC-040-053-08 MPS
30.0	42.0	10.0	11.0	UC-030-042-10 MPS	40.0	55.0	9.0	10.0	UC-040-055-09 MPS
30.0	45.0	9.0	10.0	UC-030-045-09 MPS	40.0	55.0	10.0	11.0	UC-040-055-10 MPS
30.0	45.0	10.0	11.0	UC-030-045-10 MPS	40.0	56.0	10.0	11.0	UC-040-056-10 MPS
30.0	50.0	10.0	11.0	UC-030-050-10 MPS	40.0	60.0	12.0	13.0	UC-040-060-12 MPS
31.5	41.5	6.0	7.0	UC-031.5-041.5-06 MPS	42.0	55.0	7.0	8.0	UC-042-055-07 MPS
32.0	40.0	7.5	8.0	UC-032-040-07.5 MPS	45.0	53.0	5.3	6.0	UC-045-053-05.3 MPS
32.0	40.0	8.0	9.0	UC-032-040-08 MPS	45.0	53.0	8.0	9.0	UC-045-053-08 MPS
32.0	42.0	7.3	8.0	UC-032-042-07.3 MPS	45.0	55.0	6.0	7.0	UC-045-055-06 MPS
32.0	42.0	10.0	11.0	UC-032-042-10 MPS	45.0	55.0	6.5	7.0	UC-045-055-06.5 MPS
32.0	44.0	5.5	6.3	UC-032-044-05.5 MPS	45.0	55.0	7.3	8.0	UC-045-055-07.3 MPS
32.0	44.0	6.3	7.0	UC-032-044-06.3 MPS	45.0	55.0	10.0	11.0	UC-045-055-10 MPS
32.0	45.0	10.0	11.0	UC-032-045-10 MPS	45.0	56.0	7.0	8.0	UC-045-056-07 MPS
32.0	47.0	10.0	11.0	UC-032-047-10 MPS	45.0	60.0	9.0	10.0	UC-045-060-09 MPS
32.0	48.0	10.0	11.0	UC-032-048-10 MPS	45.0	60.0	10.0	11.0	UC-045-060-10 MPS
33.0	40.0	8.0	9.0	UC-033-040-08 MPS	45.0	60.0	11.5	12.0	UC-045-060-11.5 MPS
33.0	43.0	10.0	11.0	UC-033-043-10 MPS	45.0	63.0	12.0	13.0	UC-045-063-12 MPS
35.0	42.0	8.0	9.0	UC-035-042-08 MPS	45.0	65.0	12.0	13.0	UC-045-065-12 MPS
35.0	43.0	8.0	9.0	UC-035-043-08 MPS	48.0	63.0	10.0	11.0	UC-048-063-10 MPS
35.0	45.0	6.0	7.0	UC-035-045-06 MPS	48.0	63.0	10.2	11.0	UC-048-063-10.2 MPS
35.0	45.0	8.0	9.0	UC-035-045-08 MPS	48.0	68.0	12.0	13.0	UC-048-068-12 MPS
35.0	45.0	10.0	11.0	UC-035-045-10 MPS	50.0	58.0	8.0	9.0	UC-050-058-08 MPS
35.0	50.0	10.0	11.0	UC-035-050-10 MPS	50.0	60.0	6.0	7.0	UC-050-060-06 MPS
35.0	50.0	11.4	12.0	UC-035-050-11.4 MPS	50.0	60.0	7.3	8.0	UC-050-060-07.3 MPS
35.0	55.0	10.0	11.0	UC-035-055-10 MPS	50.0	60.0	10.0	11.0	UC-050-060-10 MPS
35.5	45.0	6.0	7.0	UC-035.5-045-06 MPS	50.0	60.0	12.0	13.0	UC-050-060-12 MPS
36.0	44.0	5.3	6.0	UC-036-044-05.3 MPS	50.0	63.0	10.0	11.0	UC-050-063-10 MPS
36.0	44.0	6.0	7.0	UC-036-044-06 MPS	50.0	65.0	9.0	10.0	UC-050-065-09 MPS
36.0	44.0	8.0	9.0	UC-036-044-08 MPS	50.0	65.0	10.0	11.0	UC-050-065-10 MPS
36.0	46.0	7.3	8.0	UC-036-046-07.3 MPS	50.0	65.0	11.4	12.0	UC-050-065-11.4 MPS
36.0	45.0	10.0	11.0	UC-036-045-10 MPS	50.0	70.0	10.0	11.0	UC-050-070-10 MPS
36.0	46.0	10.0	11.0	UC-036-046-10 MPS	50.0	70.0	12.0	13.0	UC-050-070-12 MPS
36.0	52.0	10.0	11.0	UC-036-052-10 MPS	51.0	63.0	12.0	13.0	UC-051-063-12 MPS
37.0	47.0	8.0	9.0	UC-037-047-08 MPS	53.0	63.0	6.0	7.0	UC-053-063-06 MPS
40.0	48.0	6.0	7.0	UC-040-048-06 MPS	53.0	63.0	6.5	7.0	UC-053-063-06.5 MPS

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)
53.0	63.0	7.3	8.0	UC-053-063-07.3 MPS	70.0	78.0	8.0	9.0	UC-070-078-08 MPS
53.0	63.0	10.0	11.0	UC-053-063-10 MPS	70.0	80.0	6.0	7.0	UC-070-080-06 MPS
55.0	65.0	6.0	7.0	UC-055-065-06 MPS	70.0	80.0	10.0	11.0	UC-070-080-10 MPS
55.0	65.0	10.0	11.0	UC-055-065-10 MPS	70.0	80.0	12.0	13.0	UC-070-080-12 MPS
55.0	65.0	12.0	13.0	UC-055-065-12 MPS	70.0	85.0	9.0	10.0	UC-070-085-09 MPS
55.0	70.0	9.0	10.0	UC-055-070-09 MPS	70.0	85.0	10.0	11.0	UC-070-085-10 MPS
55.0	70.0	12.0	13.0	UC-055-070-12 MPS	70.0	85.0	11.4	12.0	UC-070-085-11.4 MPS
55.0	75.0	12.0	13.0	UC-055-075-12 MPS	70.0	90.0	12.0	13.0	UC-070-090-12 MPS
55.0	80.0	15.0	16.0	UC-055-080-15 MPS	70.0	90.0	15.0	16.0	UC-070-090-15 MPS
56.0	64.0	8.0	9.0	UC-056-064-08 MPS	71.0	80.0	6.0	7.0	UC-071-080-06 MPS
56.0	66.0	6.0	7.0	UC-056-066-06 MPS	75.0	83.0	6.0	7.0	UC-075-083-06 MPS
56.0	66.0	10.0	11.0	UC-056-066-10 MPS	75.0	85.0	6.0	7.0	UC-075-085-06 MPS
56.0	71.0	11.4	12	UC-056-071-11.4 MPS	75.0	85.0	8.0	9.0	UC-075-085-08 MPS
60.0	68.0	8.0	9.0	UC-060-068-08 MPS	75.0	85.0	12.0	13.0	UC-075-085-12 MPS
60.0	70.0	6.0	7.0	UC-060-070-06 MPS	75.0	90.0	9.0	10.0	UC-075-090-09 MPS
60.0	70.0	8.0	9.0	UC-060-070-08 MPS	75.0	90.0	11.0	12.0	UC-075-090-11 MPS
60.0	70.0	10.0	11.0	UC-060-070-10 MPS	75.0	90.0	12.0	13.0	UC-075-090-12 MPS
60.0	70.0	12.0	13.0	UC-060-070-12 MPS	75.0	95.0	12.0	13.0	UC-075-095-12 MPS
60.0	71.0	7.0	8.0	UC-060-071-07 MPS	75.0	100.0	15.0	16.0	UC-075-100-15 MPS
60.0	75.0	9.0	10.0	UC-060-075-09 MPS	78.0	90.0	11.0	12.0	UC-078-090-11 MPS
60.0	75.0	11.0	12.0	UC-060-075-11 MPS	80.0	88.0	8.0	9.0	UC-080-088-08 MPS
60.0	80.0	12.0	13.0	UC-060-080-12 MPS	80.0	90.0	6.0	7.0	UC-080-090-06 MPS
62.0	72.0	12.0	13.0	UC-062-072-12 MPS	80.0	90.0	10.0	11.0	UC-080-090-10 MPS
63.0	71.0	8.0	9.0	UC-063-071-08 MPS	80.0	90.0	12.0	13.0	UC-080-090-12 MPS
63.0	73.0	12.0	13.0	UC-063-073-12 MPS	80.0	95.0	11.0	12.0	UC-080-095-11 MPS
63.0	75.0	8.7	9.5	UC-063-075-08.7 MPS	80.0	95.0	11.4	12.0	UC-080-095-11.4 MPS
63.0	78.0	10.0	11.0	UC-063-078-10 MPS	80.0	100.0	12.0	13.0	UC-080-100-12 MPS
63.0	78.0	11.4	12.0	UC-063-078-11.4 MPS	80.0	100.0	14.5	15.0	UC-080-100-14.5 MPS
63.0	83.0	15.0	16.0	UC-063-083-15 MPS	80.0	100.0	15.0	16.0	UC-080-100-15 MPS
65.0	73.0	8.0	9.0	UC-065-073-08 MPS	82.0	92.0	10.0	11.0	UC-082-092-10 MPS
65.0	75.0	6.0	7.0	UC-065-075-06 MPS	84.0	98.0	12.0	13.0	UC-084-098-12 MPS
65.0	75.0	10.0	11.0	UC-065-075-10 MPS	84.0	104.0	12.0	13.0	UC-084-104-12 MPS
65.0	75.0	12.0	13.0	UC-065-075-12 MPS	85.0	100.0	9.0	10.0	UC-085-100-09 MPS
65.0	80.0	9.0	10.0	UC-065-080-09 MPS	85.0	100.0	9.5	10.0	UC-085-100-09.5 MPS
65.0	80.0	11.4	12.0	UC-065-080-11.4 MPS	85.0	100.0	12.0	13.0	UC-085-100-12 MPS
65.0	80.0	12.0	13.0	UC-065-080-12 MPS	85.0	100.0	12.5	13.0	UC-085-100-12.5 MPS
65.0	83.0	10.0	11.0	UC-065-083-10 MPS	85.0	105.0	12.0	13.0	UC-085-105-12 MPS
65.0	85.0	12.0	13.0	UC-065-085-12 MPS	90.0	98.0	8.0	9.0	UC-090-098-09 MPS
65.0	85.0	15.0	16.0	UC-065-085-15 MPS	90.0	100.0	6.0	7.0	UC-090-100-06 MPS
67.0	77.0	6.0	7.0	UC-067-077-06 MPS	90.0	105.0	9.0	10.0	UC-090-105-09 MPS

Rubber Energized U-Cup

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)
90.0	105.0	11.4	12.0	UC-090-105-11.4 MPS	125.0	140.0	9.0	10.0	UC-125-140-09 MPS
90.0	105.0	12.0	13.0	UC-090-105-12 MPS	125.0	140.0	15.0	16.0	UC-125-140-15 MPS
90.0	110.0	12.0	13.0	UC-090-110-12 MPS	125.0	145.0	14.5	15.0	UC-125-145-14.5 MPS
90.0	110.0	14.5	15.0	UC-090-110-14.5 MPS	125.0	145.0	15.0	16.0	UC-125-145-15 MPS
90.0	110.0	15.0	16.0	UC-090-110-15 MPS	125.0	150.0	18.0	20.0	UC-125-150-18 MPS
95.0	105.0	12.0	13.0	UC-095-105-12 MPS	130.0	150.0	12.0	13.0	UC-130-150-12 MPS
95.0	110.0	9.0	10.0	UC-095-110-09 MPS	130.0	150.0	13.0	14.0	UC-130-150-13 MPS
95.0	115.0	12.0	13.0	UC-095-115-12 MPS	130.0	150.0	15.0	16.0	UC-130-150-15 MPS
96.0	105.0	11.0	12.0	UC-096-105-11 MPS	130.0	150.0	16.0	17.0	UC-130-150-16 MPS
97.0	105.0	13.0	14.0	UC-097-105-13 MPS	135.0	150.0	9.0	10.0	UC-135-150-09 MPS
98.0	110.0	16.0	17.0	UC-098-110-16 MPS	135.0	155.0	15.0	16.0	UC-135-155-15 MPS
100.0	108.0	8.0	9.0	UC-100-108-08 MPS	136.0	150.0	9.0	10.0	UC-136-150-09 MPS
100.0	115.0	9.0	10.0	UC-100-115-09 MPS	140.0	155.0	9.0	10.0	UC-140-155-09 MPS
100.0	115.0	12.0	13.0	UC-100-115-12 MPS	140.0	160.0	12.0	13.0	UC-140-160-12 MPS
100.0	120.0	12.0	13.0	UC-100-120-12 MPS	140.0	160.0	14.0	15.0	UC-140-160-14 MPS
100.0	120.0	14.5	15.0	UC-100-120-14.5 MPS	140.0	160.0	14.5	15.0	UC-140-160-14.5 MPS
100.0	120.0	20.0	21.0	UC-100-120-20 MPS	140.0	160.0	15.0	16.0	UC-140-160-15 MPS
100.0	125.0	15.0	16.0	UC-100-125-15 MPS	140.0	165.0	18.0	20.0	UC-140-165-18 MPS
105.0	120.0	9.0	10.0	UC-105-120-09 MPS	140.0	165.0	18.2	20.0	UC-140-165-18.2 MPS
105.0	125.0	11.4	12.0	UC-105-125-11.4 MPS	145.0	160.0	7.0	8.0	UC-145-160-07 MPS
105.0	125.0	12.0	13.0	UC-105-125-12 MPS	145.0	160.0	9.0	10.0	UC-145-160-09 MPS
105.0	125.0	15.0	16.0	UC-105-125-15 MPS	150.0	165.0	9.0	10.0	UC-150-165-09 MPS
106.0	120.0	8.5	9.5	UC-106-120-08.5 MPS	150.0	170.0	15.0	16.0	UC-150-170-15 MPS
110.0	125.0	9.0	10.0	UC-110-125-09 MPS	150.0	170.0	16.0	17.0	UC-150-170-16 MPS
110.0	125.0	9.2	10.0	UC-110-125-09.2 MPS	150.0	180.0	18.0	19.0	UC-150-180-18 MPS
110.0	130.0	12.0	13.0	UC-110-130-12 MPS	155.0	180.0	16.0	17.0	UC-155-180-16 MPS
110.0	130.0	14.5	15.0	UC-110-130-14.5 MPS	160.0	175.0	9.0	10.0	UC-160-175-09 MPS
110.0	130.0	15.0	16.0	UC-110-130-15 MPS	160.0	180.0	15.0	16.0	UC-160-180-15 MPS
110.0	135.0	18.0	19.0	UC-110-135-18 MPS	160.0	185.0	16.0	17.0	UC-160-185-16 MPS
112.0	125.0	7.0	8.0	UC-112-125-07 MPS	160.0	185.0	18.0	20.0	UC-160-185-18 MPS
112.0	125.0	9.0	10.0	UC-112-125-09 MPS	160.0	190.0	22.7	23.5	UC-160-190-22.7 MPS
115.0	130.0	8.5	9.5	UC-115-130-08.5 MPS	165.0	180.0	9.5	10.5	UC-165-180-09.5 MPS
115.0	135.0	12.0	13.0	UC-115-135-12 MPS	165.0	190.0	16.0	17.0	UC-165-190-16 MPS
115.0	140.0	18.0	20.0	UC-115-140-18 MPS	170.0	190.0	15.0	17.0	UC-170-190-15 MPS
120.0	130.0	15.0	16.0	UC-120-130-15 MPS	170.0	195.0	16.0	17.0	UC-170-195-16 MPS
120.0	135.0	9.0	10.0	UC-120-135-09 MPS	175.0	185.0	11.4	12.0	UC-175-185-11.4 MPS
120.0	135.0	15.0	16.0	UC-120-135-15 MPS	175.0	200.0	15.0	17.0	UC-175-200-15 MPS
120.0	140.0	12.0	13.0	UC-120-140-12 MPS	175.0	200.0	16.0	17.0	UC-175-200-16 MPS
120.0	140.0	14.5	15.0	UC-120-140-14.5 MPS	175.0	200.0	18.0	20.0	UC-175-200-18 MPS
120.0	140.0	15.0	16.0	UC-120-140-15 MPS	180.0	200.0	12.5	13.0	UC-180-200-12.5 MPS

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Seal Height H	Groove Width L	Reference (For order processing)
180.0	205.0	15.0	17.0	UC-180-205-15 MPS	230.0	255.0	19.0	21.0	UC-230-255-19 MPS
180.0	205.0	16.0	17.0	UC-180-205-16 MPS	236.0	261.0	19.0	21.0	UC-236-261-19 MPS
180.0	205.0	19.0	21.0	UC-180-205-19 MPS	240.0	265.0	18.0	20.0	UC-240-265-18 MPS
180.0	210.0	15.0	17.0	UC-180-210-15 MPS	250.0	270.0	12.0	13.0	UC-250-270-12 MPS
190.0	210.0	12.0	13.0	UC-190-210-12 MPS	250.0	275.0	19.0	21.0	UC-250-275-19 MPS
190.0	210.0	15.0	16.0	UC-190-210-15 MPS	250.0	280.0	22.5	24.5	UC-250-280-22.5 MPS
190.0	215.0	15.0	17.0	UC-190-215-15 MPS	265.0	295.0	19.0	21.0	UC-265-295-19 MPS
190.0	215.0	16.0	17.0	UC-190-215-16 MPS	270.0	300.0	15.0	16.0	UC-270-300-15 MPS
199.0	224.0	16.0	17.0	UC-199-224-16 MPS	270.0	300.0	19.0	21.0	UC-270-300-19 MPS
200.0	220.0	12.5	13.0	UC-200-220-12.5 MPS	280.0	310.0	19.0	21.0	UC-280-310-19 MPS
200.0	220.0	15.0	16.0	UC-200-220-15 MPS	290.0	320.0	22.0	24.0	UC-290-320-22 MPS
200.0	225.0	15.0	17.0	UC-200-225-15 MPS	300.0	330.0	18.0	20.0	UC-300-330-18 MPS
200.0	225.0	16.0	17.0	UC-200-225-16 MPS	300.0	330.0	19.0	21.0	UC-300-330-19 MPS
200.0	225.0	18.0	20.0	UC-200-225-18 MPS	300.0	330.0	35.0	37.0	UC-300-330-35 MPS
204.0	224.0	12.5	13.0	UC-204-224-12.5 MPS	320.0	350.0	22.0	24.0	UC-320-350-22 MPS
205.0	235.0	18.0	20.0	UC-205-235-18 MPS	325.0	360.0	20.0	22.0	UC-325-360-20 MPS
210.0	235.0	18.0	20.0	UC-210-235-18 MPS	357.0	402.0	35.0	37.0	UC-357-402-35 MPS
212.0	237.0	19.0	21.0	UC-212-237-19 MPS	360.0	400.0	29.0	31.0	UC-360-400-29 MPS
220.0	250.0	22.5	24.5	UC-220-250-22.5 MPS	400.0	415.0	15.0	17.0	UC-400-415-15 MPS
224.0	249.0	19.0	21.0	UC-224-249-19 MPS	420.0	450.0	22.0	24.0	UC-420-450-22 MPS
225.0	250.0	18.0	20.0	UC-225-250-18 MPS	450.0	484.0	32.0	34.0	UC-450-484-32 MPS
225.0	250.0	19.0	21.0	UC-225-250-19 MPS	500.0	540.0	29.0	31.0	UC-500-540-29 MPS
225.0	255.0	22.5	24.5	UC-225-255-22.5 MPS	500.0	540.0	35.0	37.0	UC-500-540-35 MPS
230.0	250.0	12.5	13.0	UC-230-250-12.5 MPS	530.0	570.0	25.4	27.5	UC-530-570-25.4 MPS
230.0	250.0	16.0	17.0	UC-230-250-16 MPS	800.0	850.0	38.0	40.0	UC-800-850-38 MPS

Rubber U-Cup

Piston & Rod Seals

SKY, SKY-F (Metric Size)

SKY, SKY-F

Type	Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
SKY	NBR	140 (210)	-10 +80	1 (0.5)
SKY-F	FPM	140 (210)	-5 +150	0.5

- Usable either on pistons or rods.
- Simple construction groove.
- Easy installation.
- Excellent wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

D	C	C1
< 36	3.0	1.5
36-95	3.5	3.0
95-190	4.0	4.0
190-800	5.0	5.0

Piston & Rod Seals

KY (Metric Size)

KY

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	150 (300)	-10 +80	1 (0.5)

- Highly stable performance.
- Usable either on pistons or rods.
- Excellent wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 45	3.0
45-80	3.5
80-140	4.0
140-275	5.0
275-532	6.0

Rubber U-Cup

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
6.3	16.3	7.5	8.5	10.5	15.3	6.7		UC 006.3-016.3-07.5 KY
7.1	17.1	7.5	8.5	10.5	16.1	7.5		UC 007.1-017.1-07.5 KY
8.0	18.0	7.5	8.5	10.5	17.0	8.4		UC 008-018-07.5 KY
9.0	19.0	7.5	8.5	10.5	18.0	9.4		UC 009-019-07.5 KY
10.0	18.0	5.0	5.7	6.7	17.0	10.4	SKY-010-018-05	
10.0	20.0	7.5	8.5	10.5	19.0	10.4		UC 010-020-07.5 KY
11.2	21.2	7.5	8.5	10.5	20.2	11.6		UC 011.2-021.2-07.5 KY
12.0	20.0	5.0	5.7	6.7	19.0	12.4	SKY-012-020-05	
12.5	20.0	5.0	5.7	6.7	19.0	12.9	SKY-012.5	
12.5	22.5	7.5	8.5	10.5	21.5	12.9		UC 012.5-022.5-07.5 KY
14.0	22.0	5.0	5.7	6.7	21.0	14.4	***SKY-014***	
14.0	24.0	7.5	8.5	10.5	23.0	14.4		UC 014-024-07.5 KY
15.0	25.0	6.5	7.5	9.5	24.0	15.4		UC 015-025-06.5 KY
15.0	28.0	10.0	11.0	13.5	27.0	15.4		UC 015-028-10 KY
16.0	24.0	5.0	5.7	6.7	23.0	16.4	***SKY-016***	
16.0	26.0	7.5	8.5	10.5	25.0	16.4		UC 016-026-07.5 KY
17.0	25.0	5.0	5.7	6.7	24.0	17.4	SKY-017-025-05	
18.0	26.0	5.0	5.7	6.7	25.0	18.4	***SKY-018***	
18.0	28.0	8.0	9.0	11.0	27.0	18.4		UC 018-028-08 KY
18.0	31.0	10.0	11.0	13.5	30.0	18.4		UC 018-031-10 KY
18.5	31.5	10.0	11.0	13.5	30.5	18.9		UC 018.5-031.5-10 KY
20.0	28.0	5.0	5.7	6.7	27.0	20.4	***SKY-020***	
20.0	30.0	6.0	7.0	8.5	29.0	20.4	SKY-020-030-06	
20.0	33.0	10.0	11.0	13.5	32.0	20.4		UC 020-033-10 KY
20.0	35.0	9.5	10.5	13.0	34.0	20.4		UC 020-035-09.5 KY
22.0	30.0	5.0	5.7	6.7	29.0	22.4	***SKY-022***	
22.0	35.0	8.0	9.0	11.5	34.0	22.4		UC 022-035-08 KY
22.0	35.0	10.0	11.0	13.5	34.0	22.4		UC 022-035-10 KY
22.4	30.0	5.0	5.7	6.7	29.0	22.8	***SKY-022.4***	
22.4	35.4	10.0	11.0	13.5	34.4	22.8		UC 022.4-035.4-10 KY
23.5	31.5	5.0	5.7	6.7	30.5	23.9	***SKY-023.5***	
24.0	32.0	5.0	5.7	6.7	31.0	24.4	SKY-024-032-05	
25.0	33.0	5.0	5.7	6.7	32.0	25.4	***SKY-025***	
25.0	35.0	8.0	9.0	11.0	34.0	25.4		UC 025-035-08 KY
25.0	38.0	10.0	11.0	13.5	37.0	25.4		UC 025-038-10 KY
26.0	34.0	5.0	5.7	6.7	33.0	26.4	SKY-026-034-05	
27.0	35.0	5.0	5.7	6.7	34.0	27.4	SKY-027-035-05	
27.0	40.0	10.0	11.0	13.5	39.0	27.4		UC 027-040-10 KY
28.0	35.5	5.0	5.7	6.7	34.5	28.4	***SKY-028***	
28.0	36.0	5.0	5.7	6.7	35.0	28.4	SKY-028A	

SKY packing shown in italic-bold letter is also available in FPM material.

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
28.0	40.0	10.0	11.0	13.5	39.0	28.4		UC 028-040-10 KY
28.0	41.0	10.0	11.0	13.5	40.0	28.4		UC 028-041-10 KY
30.0	38.0	5.0	5.7	6.7	37.0	30.5	SKY-030-038-05	
30.0	40.0	6.0	7.0	8.5	39.0	30.5	***SKY-030***	
30.0	43.0	10.0	11.0	13.5	42.0	30.5		UC 030-043-10 KY
30.0	45.0	10.0	11.0	14.0	44.0	30.5		UC 030-045-10 KY
31.5	41.5	6.0	7.0	8.5	40.5	32.0	***SKY-031.5***	
31.5	44.5	10.0	11.0	13.5	43.5	32.0		UC 031.5-044.5-10 KY
32.0	42.0	6.0	7.0	8.5	41.0	32.5	SKY-032	
32.0	45.0	10.0	11.0	13.5	44.0	32.5		UC 032-045-10 KY
34.0	50.0	12.0	13.0	16.0	48.0	34.5		UC 034-050-12 KY
35.0	45.0	6.0	7.0	8.5	44.0	35.5	***SKY-035***	
35.0	50.0	10.0	11.0	14.0	48.0	35.5		UC 035-050-10 KY
35.0	50.0	12.0	13.0	16.0	48.0	35.5		UC 035-050-12 KY
35.0	51.0	12.0	13.0	16.0	49.0	35.5		UC 035-051-12 KY
35.5	45.0	6.0	7.0	8.5	44.0	36.0	***SKY-035.5***	
35.5	45.5	6.0	7.0	8.5	44.5	36.0	SKY-035.5A	
35.5	51.5	12.0	13.0	16.0	49.5	36.0		UC 035.5-051.5-12 KY
36.0	46.0	6.0	7.0	8.5	45.0	36.5	***SKY-036***	
36.0	52.0	12.0	13.0	16.0	50.0	36.5		UC 036-052-12 KY
38.0	48.0	6.0	7.0	8.5	47.0	38.5	SKY-038-048-06	
40.0	50.0	6.0	7.0	8.5	49.0	40.5	***SKY-040***	
40.0	55.0	10.0	11.0	14.0	53.0	40.5		UC 040-055-10 KY
40.0	56.0	12.0	13.0	16.0	54.0	40.5		UC 040-056-12 KY
40.0	60.0	12.0	13.0	16.0	58.0	40.5		UC 040-060-12 KY
44.0	60.0	12.0	13.0	16.0	58.0	44.5		UC 044-060-12 KY
45.0	55.0	6.0	7.0	8.5	54.0	45.5	***SKY-045***	
45.0	56.0	7.0	8.0	9.5	55.0	45.5	***SKY-045A***	
45.0	60.0	10.0	11.0	14.0	58.0	45.5		UC 045-060-10 KY
45.0	60.0	12.0	13.0	16.0	58.0	45.5		UC 045-060-12 KY
45.0	61.0	12.0	13.0	16.0	59.0	45.5		UC 045-061-12 KY
47.0	63.0	12.0	13.0	16.0	61.0	47.5		UC 047-063-12 KY
50.0	60.0	6.0	7.0	8.5	59.0	50.5	***SKY-050***	
50.0	65.0	10.0	11.0	14.0	63.0	50.5		UC 050-065-10 KY
50.0	66.0	12.0	13.0	16.0	64.0	50.5		UC 050-066-12 KY
50.0	70.0	12.0	13.0	16.0	68.0	50.5		UC 050-070-12 KY
53.0	63.0	6.0	7.0	8.5	62.0	53.6	***SKY-053***	
53.0	69.0	12.0	13.0	16.0	67.0	53.6		UC 053-069-12 KY
54.0	70.0	12.0	13.0	16.0	68.0	54.6		UC 054-070-12 KY
55.0	65.0	6.0	7.0	8.5	64.0	55.6	***SKY-055***	

SKY packing shown in italic-bold letter is also available in FPM material.

Rubber U-Cup

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
55.0	71.0	12.0	13.0	16.0	69.0	55.6		UC 055-071-12 KY
55.0	72.0	12.0	13.0	16.0	70.0	55.6		UC 055-072-12 KY
55.0	75.0	12.0	13.0	16.0	73.0	55.6		UC 055-075-12 KY
55.0	80.0	15.0	16.0	19.0	78.0	55.6		UC 055-080-15 KY
56.0	66.0	6.0	7.0	8.5	65.0	56.6	***SKY-056***	
56.0	72.0	12.0	13.0	16.0	70.0	56.6		UC 056-072-12 KY
58.0	68.0	6.0	7.0	8.5	67.0	58.6	SKY-058-068-06	
60.0	70.0	6.0	7.0	8.5	69.0	60.6	***SKY-060***	
60.0	71.0	7.0	8.0	9.5	70.0	60.6	***SKY-060A***	
60.0	76.0	12.0	13.0	16.0	74.0	60.6		UC 060-076-12 KY
60.0	80.0	12.0	13.0	16.0	78.0	60.6		UC 060-080-12 KY
61.0	71.0	6.0	7.0	8.5	70.0	61.6	SKY-061-071-06	
63.0	73.0	6.0	7.0	8.5	72.0	63.6	***SKY-063***	
63.0	79.0	12.0	13.0	16.0	77.0	63.6		UC 063-079-12 KY
64.0	80.0	12.0	13.0	16.0	78.0	64.6		UC 064-080-12 KY
65.0	75.0	6.0	7.0	8.5	74.0	65.6	***SKY-065***	
65.0	81.0	12.0	13.0	16.0	79.0	65.6		UC 065-081-12 KY
67.0	77.0	6.0	7.0	8.5	76.0	67.6	***SKY-067***	
67.0	87.0	15.0	16.0	19.0	85.0	67.6		UC 067-087-15 KY
70.0	80.0	6.0	7.0	8.5	79.0	70.6	***SKY-070***	
70.0	90.0	12.0	13.0	16.0	88.0	70.6		UC 070-090-12 KY
70.0	90.0	15.0	16.0	19.0	88.0	70.6		UC 070-090-15 KY
71.0	80.0	6.0	7.0	8.5	79.0	71.6	***SKY-071***	
71.0	91.0	15.0	16.0	19.0	89.0	71.6		UC 071-091-15 KY
75.0	85.0	6.0	7.0	8.5	84.0	75.6	***SKY-075***	
75.0	95.0	12.0	13.0	16.0	93.0	75.6		UC 075-095-12 KY
75.0	95.0	15.0	16.0	19.0	93.0	75.6		UC 075-095-15 KY
80.0	90.0	6.0	7.0	8.5	89.0	80.6	***SKY-080***	
80.0	100.0	12.0	13.0	16.0	98.0	80.6		UC 080-100-12 KY
80.0	100.0	15.0	16.0	19.0	98.0	80.6		UC 080-100-15 KY
85.0	95.0	6.0	7.0	8.5	94.0	85.6	SKY-085-095-06	
85.0	100.0	9.0	10.0	12.0	98.0	85.6	***SKY-085***	
85.0	105.0	12.0	13.0	16.0	103.0	85.6		UC 085-105-12 KY
85.0	105.0	15.0	16.0	19.0	103.0	85.6		UC 085-105-15 KY
86.0	100.0	8.5	9.5	11.5	98.0	86.6	***SKY-086***	
89.0	104.0	9.0	10.0	12.0	102.0	89.6	SKY-089-104-09	
90.0	100.0	6.0	7.0	8.5	99.0	90.6	SKY-090-100-06	
90.0	105.0	9.0	10.0	12.0	103.0	90.6	***SKY-090***	
90.0	110.0	12.0	13.0	16.0	108.0	90.6		UC 090-110-12 KY
90.0	110.0	15.0	16.0	19.0	108.0	90.6		UC 090-110-15 KY

SKY packing shown in italic-bold letter is also available in FPM material.

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
92.0	112.0	15.0	16.0	19.0	110.0	92.6		UC 092-112-15 KY
95.0	110.0	9.0	10.0	12.0	108.0	95.6	***SKY-095***	
95.0	115.0	15.0	16.0	19.0	113.0	95.6		UC 095-115-15 KY
96.0	111.0	9.0	10.0	12.0	109.0	96.6	SKY-096-111-09	
98.0	112.0	8.5	9.5	11.5	110.0	98.6	***SKY-098***	
100.0	115.0	9.0	10.0	12.0	113.0	100.6	***SKY-100***	
100.0	120.0	15.0	16.0	19.0	118.0	100.6		UC 100-120-15 KY
100.0	125.0	15.0	16.0	19.0	123.0	100.6		UC 100-125-15 KY
105.0	120.0	9.0	10.0	12.0	118.0	105.6	SKY-105-120-09	
105.0	125.0	15.0	16.0	19.0	123.0	105.6		UC 105-125-15 KY
106.0	120.0	8.5	9.5	11.5	118.0	106.6	***SKY-106***	
106.0	126.0	15.0	16.0	19.0	124.0	106.6		UC 106-126-15 KY
110.0	122.0	7.2					SKY-110-122-07.2	
110.0	125.0	9.0	10.0	12.0	123.0	110.6	SKY-110-125-09	
110.0	130.0	15.0	16.0	19.0	128.0	110.6		UC 110-130-15 KY
112.0	125.0	8.5	9.5	11.5	123.0	112.6	***SKY-112***	
112.0	125.0	9.0	10.0	12.0	123.0	112.6	***SKY-112A***	
112.0	132.0	15.0	16.0	19.0	130.0	112.6		UC 112-132-15 KY
115.0	130.0	8.5	9.5	11.5	128.0	115.6	SKY-115-130-08.5	
115.0	135.0	15.0	16.0	19.0	133.0	115.6		UC 115-135-15 KY
118.0	132.0	8.5	9.5	11.5	130.0	118.6	***SKY-118***	
118.0	138.0	15.0	16.0	19.0	136.0	118.6		UC 118-138-15 KY
119.0	133.0	8.5	9.5	11.5	131.0	119.6	SKY-119-133-08.5	
120.0	135.0	9.0	10.0	12.0	133.0	120.6	SKY-120-135-09	
120.0	140.0	15.0	16.0	19.0	138.0	120.6		UC 120-140-15 KY
125.0	140.0	9.0	10.0	12.0	138.0	125.6	***SKY-125***	
125.0	150.0	19.0	21.0	24.0	147.0	125.7		UC 125-150-19 KY
130.0	145.0	9.0	10.0	12.0	143.0	130.6	SKY-130-145-09	
130.0	150.0	15.0	16.0	19.0	147.0	130.7		UC 130-150-15 KY
130.0	155.0	19.0	21.0	24.0	152.0	130.7		UC 130-155-19 KY
132.0	145.0	8.5	9.5	11.5	143.0	132.6	***SKY-132***	
132.0	157.0	19.0	21.0	24.0	154.0	132.7		UC 132-157-19 KY
135.0	155.0	16.0	17.0	20.0	152.0	135.7		UC 135-155-16 KY
135.0	160.0	15.7	17.0	20.0	157.0	135.7		UC 135-160-15.7 KY
135.0	160.0	19.0	21.0	24.0	157.0	135.7		UC 135-160-19 KY
136.0	150.0	8.5	9.5	11.5	148.0	136.6	***SKY-136***	
140.0	155.0	9.0	10.0	12.0	153.0	140.6	***SKY-140***	
140.0	160.0	15.0	16.0	19.0	157.0	140.7		UC 140-160-15 KY
140.0	165.0	19.0	21.0	24.0	162.0	140.7		UC 140-165-19 KY
145.0	160.0	9.0	10.0	12.0	158.0	145.6	***SKY-145***	

SKY packing shown in italic-bold letter is also available in FPM material.

Rubber U-Cup

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
145.0	170.0	19.0	21.0	24.0	167.0	145.7		UC 145-170-19 KY
150.0	165.0	9.0	10.0	12.0	163.0	150.6	***SKY-150***	
150.0	175.0	19.0	21.0	24.0	172.0	150.7		UC 150-175-19 KY
155.0	170.0	9.0	10.0	12.0	168.0	155.6	***SKY-155***	
155.0	180.0	15.7	17.0	20.0	177.0	155.7		UC 155-180-15.7 KY
155.0	180.0	19.0	21.0	24.0	177.0	155.7		UC 155-180-19 KY
158.0	170.0	7.2					SKY-158-170-07.2	
160.0	175.0	9.0	10.0	12.0	173.0	160.6	***SKY-160***	
160.0	185.0	19.0	21.0	24.0	182.0	160.7		UC 160-185-19 KY
165.0	177.0	7.2					SKY-165-177-07.2	
165.0	180.0	9.0	10.0	12.0	178.0	165.6	***SKY-165***	
165.0	190.0	19.0	21.0	24.0	187.0	165.7		UC 165-190-19 KY
170.0	185.0	9.0	10.0	12.0	183.0	170.6	SKY-170-185-09	
170.0	195.0	19.0	21.0	24.0	192.0	170.7		UC 170-195-19 KY
175.0	190.0	9.0	10.0	12.0	188.0	175.6	***SKY-175***	
175.0	200.0	15.7	17.0	20.0	197.0	175.7		UC 175-200-15.7 KY
175.0	200.0	19.0	21.0	24.0	197.0	175.7		UC 175-200-19 KY
180.0	200.0	12.0	13.0	15.5	198.0	180.7	***SKY-180***	
180.0	205.0	19.0	21.0	24.0	202.0	180.7		UC 180-205-19 KY
185.0	205.0	12.0	13.0	15.5	203.0	185.8	SKY-185-205-12	
190.0	202.0	7.2					SKY-190-202-07.2	
190.0	210.0	12.0	13.0	15.5	208.0	190.8	SKY-190-210-12	
190.0	215.0	19.0	21.0	24.0	212.0	190.8		UC 190-215-19 KY
195.0	215.0	12.0	13.0	15.5	213.0	195.8	SKY-195-215-12	
195.0	220.0	19.0	21.0	24.0	217.0	195.8		UC 195-220-19 KY
199.0	224.0	15.7	17.0	20.0	221.0	199.8		UC 199-224-15.7 KY
199.0	224.0	19.0	21.0	24.0	221.0	199.9		UC 199-224-19 KY
200.0	212.0	7.2					SKY-200-212-07.2	
200.0	220.0	12.0	13.0	15.5	218.0	200.8	***SKY-200***	
200.0	225.0	19.0	21.0	24.0	222.0	200.8		UC 200-225-19 KY
204.0	224.0	12.0	13.0	15.5	222.0	204.8	***SKY-204***	
205.0	230.0	19.0	21.0	24.0	227.0	205.8		UC 205-230-19 KY
208.0	220.0	7.2					SKY-208-220-07.2	
210.0	230.0	12.0	13.0	15.5	228.0	210.8	SKY-210-230-12	
210.0	235.0	18.0	20.0	23.0	232.0	210.8		UC 210-235-18 KY
210.0	235.0	19.0	21.0	24.0	232.0	210.8		UC 210-235-19 KY
212.0	237.0	19.0	21.0	24.0	234.0	212.8		UC 212-237-19 KY
215.0	235.0	12.0	13.0	15.5	233.0	215.8	SKY-215-235-12	
215.0	240.0	19.0	21.0	24.0	237.0	215.8		UC 215-240-19 KY
218.0	230.0	7.2					SKY-218-230-07.2	

SKY packing shown in italic-bold letter is also available in FPM material.

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
220.0	240.0	12.0	13.0	15.5	238.0	220.8	SKY-220-240-12	
220.0	250.0	18.0	20.0	23.0	247.0	220.8		UC 220-250-18 KY
224.0	244.0	12.0	13.0	15.5	242.0	224.8	***SKY-224***	
224.0	249.0	19.0	21.0	24.0	246.0	224.8		UC 224-249-19 KY
225.0	250.0	18.0	20.0	23.0	247.0	225.8		UC 225-250-18 KY
225.0	250.0	19.0	21.0	24.0	247.0	225.8		UC 225-250-19 KY
228.0	241.7	7.2					SKY-228-241.7-07.2	
230.0	250.0	12.0	13.0	15.5	248.0	230.8	***SKY-230***	
230.0	255.0	19.0	21.0	24.0	252.0	230.8		UC 230-255-19 KY
235.0	255.0	12.0	13.0	15.5	253.0	235.8	SKY-235-255-12	
235.0	260.0	19.0	21.0	24.0	257.0	235.8		UC 235-260-19 KY
236.0	261.0	19.0	21.0	24.0	258.0	236.8		UC 236-261-19 KY
237.0	257.0	12.0	13.0	15.5	255.0	237.8	SKY-237-257-12	
240.0	252.0	7.2					SKY-240-252-07.2	
240.0	260.0	12.0	13.0	15.5	258.0	240.8	SKY-240-260-12	
240.0	265.0	19.0	21.0	24.0	262.0	240.8		UC 240-265-19 KY
245.0	265.0	12.0	13.0	15.5	263.0	245.8	SKY-245-265-12	
245.0	270.0	19.0	21.0	24.0	267.0	245.8		UC 245-270-19 KY
250.0	270.0	12.0	13.0	15.5	268.0	250.8	***SKY-250***	
250.0	275.0	19.0	21.0	24.0	272.0	250.8		UC 250-275-19 KY
250.0	280.0	22.0	24.0	27.0	277.0	250.8		UC 250-280-22 KY
255.0	280.0	19.0	21.0	24.0	277.0	255.8		UC 255-280-19 KY
260.0	272.0	7.2					SKY-260-272-07.2	
260.0	280.0	14.0	15.0	18.0	278.0	260.8	***SKY-260***	
260.0	290.0	22.0	24.0	27.0	287.0	260.8		UC 260-290-22 KY
263.0	275.0	7.2					SKY-263-275-07.2	
265.0	297.0	24.0	26.0	29.0	294.0	265.8		UC 265-297-24 KY
270.0	300.0	18.0	20.0	23.0	297.0	270.8		UC 270-300-18 KY
270.0	300.0	22.0	24.0	27.0	297.0	270.8		UC 270-300-22 KY
270.0	300.0	24.0	26.0	29.0	297.0	270.8		UC 270-300-24 KY
275.0	300.0	19.0	21.0	24.0	297.0	275.8		UC 275-300-19 KY
280.0	300.0	14.0	15.0	18.0	298.0	280.8	***SKY-280***	
280.0	310.0	22.0	24.0	27.0	307.0	280.8		UC 280-310-22 KY
280.0	312.0	24.0	26.0	29.0	309.0	280.8		UC 280-312-24 KY
283.0	315.0	24.0	26.0	29.0	312.0	283.8		UC 283-315-24 KY
285.0	315.0	22.0	24.0	27.0	312.0	285.8		UC 285-315-22 KY
290.0	310.0	14.0	15.0	18.0	308.0	290.8	SKY-290-310-14	
290.0	320.0	18.0	20.0	23.0	317.0	290.8		UC 290-320-18 KY
290.0	320.0	22.0	24.0	27.0	317.0	290.8		UC 290-320-22 KY
295.0	315.0	14.0	15.0	18.0	313.0	295.8	***SKY-295***	

SKY packing shown in italic-bold letter is also available in FPM material.

Rubber U-Cup

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
300.0	312.0	7.2					SKY-300-312-07.2	
300.0	320.0	12.0	13.0	16.0	318.0	300.8	SKY-300-320-12	
300.0	332.0	24.0	26.0	29.0	329.0	300.8		UC 300-332-24 KY
308.0	320.0	7.2					SKY-308-320-07.2	
310.0	330.0	14.0	15.0	18.0	328.0	311.0	SKY-310-330-14	
310.0	340.0	22.0	24.0	27.0	337.0	311.0		UC 310-340-22 KY
315.0	335.0	14.0	15.0	18.0	333.0	316.0	SKY-315	
315.0	347.0	24.0	26.0	29.0	344.0	316.0		UC 315-347-24 KY
316.9	330.0	7.2					SKY-316.9-330-07.2	
323.0	355.0	24.0	26.0	29.0	352.0	324.0		UC 323-355-24 KY
330.0	360.0	22.0	24.0	27.0	357.0	331.0		UC 330-360-22 KY
335.0	355.0	14.0	15.0	18.0	353.0	336.0	SKY-335	
335.0	367.0	24.0	26.0	29.0	364.0	336.0		UC 335-367-24 KY
340.0	370.0	22.0	24.0	27.0	367.0	341.0		UC 340-370-22 KY
340.0	372.0	24.0	26.0	29.0	369.0	341.0		UC 340-372-24 KY
348.0	380.0	24.0	26.0	29.0	377.0	349.0		UC 348-380-24 KY
355.0	375.0	14.0	15.0	18.0	373.0	356.0	SKY-355	
355.0	387.0	24.0	26.0	29.0	384.0	356.0		UC 355-387-24 KY
360.0	392.0	24.0	26.0	29.0	389.0	361.0		UC 360-392-24 KY
365.0	395.0	22.0	24.0	27.0	392.0	366.0		UC 365-395-22 KY
368.0	380.0	7.2					SKY-368-380-07.2	
368.0	400.0	24.0	26.0	29.0	397.0	369.0		UC 368-400-24 KY
375.0	407.0	24.0	26.0	29.0	404.0	376.0		UC 375-407-24 KY
380.0	400.0	14.0	15.0	18.0	398.0	381.0	***SKY-380***	
388.0	400.0	7.2					SKY-388-400-07.2	
388.0	420.0	24.0	26.0	29.0	417.0	389.0		UC 388-420-24 KY
394.5	406.5	7.2					SKY-394.5-406.5-07.2	
400.0	420.0	14.0	15.0	18.0	418.0	401.0	SKY-400	
400.0	432.0	24.0	26.0	29.0	429.0	401.0		UC 400-432-24 KY
415.0	450.0	25.0	27.0	30.0	447.0	416.0		UC 415-450-25 KY
418.0	430.0	7.2					SKY-418-430-07.2	
420.0	455.0	25.0	27.0	30.0	452.0	421.0		UC 420-455-25 KY
425.0	457.0	24.0	26.0	29.0	454.0	426.0		UC 425-457-24 KY
428.0	440.0	7.2					SKY-428-440-07.2	
430.0	450.0	14.0	15.0	18.0	448.0	431.0	SKY-430	
450.0	470.0	14.0	15.0	18.0	468.0	451.0	SKY-450	
450.0	482.0	24.0	26.0	29.0	479.0	451.0		UC 450-482-24 KY
468.0	480.0	7.2					SKY-468-480-07.2	
475.0	507.0	24.0	26.0	29.0	504.0	476.0		UC 475-507-24 KY
480.0	500.0	14.0	15.0	18.0	498.0	481.0	SKY-480	

SKY packing shown in italic-bold letter is also available in FPM material.

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width		Diameter		Reference (For order processing)	Reference (For order processing)
d	D	H	L	L1	D1	d1		
480.0	515.0	25.0	27.0	30.0	512.0	481.0		UC 480-515-25 KY
500.0	525.0	17.0	18.0	21.0	522.0	501.0	SKY-500-525-17	
500.0	532.0	24.0	26.0	29.0	529.0	501.0		UC 500-532-24 KY
505.0	545.0	30.0	33.0	37.0	542.0	506.0		UC 505-545-30 KY
510.0	542.0	24.0	26.0	29.0	539.0	511.0		UC 510-542-24 KY
510.0	550.0	30.0	33.0	37.0	546.0	511.0		UC 510-550-30 KY
520.0	560.0	30.0	33.0	37.0	556.0	521.0		UC 520-560-30 KY
521.0	533.0	7.2					SKY-521-533-07.2	
530.0	570.0	30.0	33.0	37.0	566.0	531.0		UC 530-570-30 KY
538.0	550.0	7.2					SKY-538-550-07.2	
540.0	560.0	14.0	15.0	18.0	558.0	541.0	SKY-540-560-14	
550.0	570.0	13.0	14.0	17.0	568.0	551.0	SKY-550-570-13	
560.0	600.0	30.0	33.0	37.0	596.0	561.0		UC 560-600-30 KY
570.0	610.0	30.0	33.0	37.0	606.0	571.0		UC 570-610-30 KY
580.0	620.0	30.0	33.0	37.0	616.0	581.0		UC 580-620-30 KY
600.0	640.0	30.0	33.0	37.0	636.0	601.0		UC 600-640-30 KY
610.0	630.0	14.0	15.0	18.0	628.0	611.0	SKY-610-630-14	
630.0	655.0	17.0	18.0	21.0	652.0	631.0	SKY-630-655-17	
630.0	670.0	30.0	33.0	37.0	666.0	631.0		UC 630-670-30 KY
660.0	690.0	18.0	19.0	22.0	687.0	661.0	SKY-660-690-18	
660.0	700.0	30.0	33.0	37.0	696.0			UC 660-700-30 KY
690.0	730.0	30.0	33.0	37.0	726.0			UC 690-730-30 KY
700.0	740.0	30.0	33.0	37.0	736.0			UC 700-740-30 KY
720.0	760.0	30.0	33.0	37.0	756.0			UC 720-760-30 KY
740.0	780.0	30.0	33.0	37.0	776.0			UC 740-780-30 KY
770.0	800.0	18.0	19.0	22.0	797.0	771.0	SKY-770-800-18	
780.0	820.0	30.0	33.0	33.0	816.0			UC 780-820-30 KY
790.0	830.0	30.0	33.0	37.0	826.0			UC 790-830-30 KY
830.0	870.0	30.0	33.0	37.0	866.0			UC 830-870-30 KY
900.0	940.0	30.0	33.0	37.0	936.0			UC 900-940-30 KY
960.0	1000.0	30.0	33.0	37.0	996.0			UC 960-1000-30 KY
960.0	1020.0	45.0	48.0	53.0	1014.0			UC 960-1020-45 KY
1020.0	1080.0	45.0	48.0	53.0	1074.0			UC 1020-1080-45 KY
1090.0	1150.0	45.0	48.0	53.0	1144.0			UC 1090-1150-45 KY
1210.0	1270.0	45.0	48.0	53.0	1264.0			UC 1210-1270-45 KY
1340.0	1400.0	45.0	48.0	53.0	1394.0			UC 1340-1400-45 KY

SKY packing shown in italic-bold letter is also available in FPM material.

Rubber U-Cup

Piston & Rod Seals

USH, USH-F (Metric Size)

USH, USH-F

Type	Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
USH	NBR	140 (210)	-25 +100	1
USH-F	FPM	140 (210)	-10 +150	1

- Usable either on pistons or rods.
- Fitted in integrated groove.
- Easy installation.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 μm	≤ 4 μm
Surface of housing	≤ 1.8 μm	≤ 10 μm
Sides of housing	≤ 3.0 μm	≤ 16 μm

Chamfers

D	C	C1
< 36	3.0	1.5
36-95	3.5	3.0
95-190	4.0	4.0
190-800	5.0	5.0

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width	Reference (For order processing)	Prefix No.	
					NBR	FPM
d	D	H	L			
12.0	20.0	5.0	5.7	USH-12		
14.0	22.0	5.0	5.7	***USH-14***	CU2692KO	
16.0	24.0	5.0	5.7	***USH-16***	CU2548KO	CU2548K2
18.0	26.0	5.0	5.7	***USH-18***	CU0180KO	CU0180K6
20.0	28.0	5.0	5.7	***USH-20***	CU0212KO	CU0212K4
22.0	30.0	5.0	5.7	***USH-22***	CU3017KO	
22.4	30.0	5.0	5.7	***USH-22.4***	CU0260KO	CU0260K 3
23.5	31.5	5.0	5.7	***USH-23.5***	CU0267KO	
24.0	32.0	5.0	5.7	USH-24	CU2971KO	
25.0	33.0	5.0	5.7	***USH-25***	CU0276KO	CU0276K3
27.0	35.0	5.0	5.7	USH-27	CU3187KO	
28.0	35.5	5.0	5.7	***USH-28***	CU0320KO	CU0320K2
28.0	36.0	5.0	5.7	USH-28A	CU2536KO	
30.0	40.0	6.0	7.0	***USH-30***	CU0357KO	CU0357K6
31.5	41.5	6.0	7.0	***USH-31.5***	CU0382KO	CU0382K1
32.0	42.0	6.0	7.0	***USH-32***	CU2819KO	
35.0	45.0	6.0	7.0	***USH-35***	CU0424KO	CU0424K3
35.5	45.0	6.0	7.0	***USH-35.5***	CU0451KO	CU0451K1
35.5	45.5	6.0	7.0	USH-35.5A	CU3253KO	
36.0	46.0	6.0	7.0	***USH-36***	CU3040KO	
40.0	50.0	6.0	7.0	***USH-40***	CU0497KO	CU0497K3
45.0	55.0	6.0	7.0	***USH-45***	CU0567KO	CU0567K4
45.0	56.0	7.0	8.0	***USH-45A***	CU0572KO	CU0572K1
50.0	60.0	6.0	7.0	***USH-50***	CU0619KO	CU0619K4
53.0	63.0	6.0	7.0	***USH-53***	CU0679KO	CU0679K4
55.0	65.0	6.0	7.0	***USH-55***	CU0694KO	
56.0	66.0	6.0	7.0	***USH-56***	CU0722KO	CU0722K2
58.0	68.0	6.0	7.0	USH-58	CU3255KO	
60.0	70.0	6.0	7.0	***USH-60***	CU0746KO	CU0746K3
60.0	71.0	7.0	8.0	***USH-60A***	CU0750KO	
63.0	73.0	6.0	7.0	***USH-63***	CU0786KO	CU0786K2
65.0	75.0	6.0	7.0	***USH-65***	CU0809KO	CU0809K2
67.0	77.0	6.0	7.0	***USH-67***	CU0828KO	
70.0	80.0	6.0	7.0	***USH-70***	CU0849KO	CU0849K4
71.0	80.0	6.0	7.0	***USH-71***	CU0879KO	CU0879K1

USH packing shown in italic-bold letter is also available in FPM material.

Rubber U-Cup

(Metric Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Groove Width	Reference (For order processing)	Prefix No.	
					NBR	FPM
d	D	H	L			
75.0	85.0	6.0	7.0	***USH-75***	CU0901KO	
80.0	90.0	6.0	7.0	***USH-80***	CU0939KO	CU0939K3
85.0	95.0	6.0	7.0	USH-85	CU1959KO	
85.0	100.0	9.0	10.0	***USH-85A***	CU0984KO	CU0984K4
90.0	105.0	9.0	10.0	***USH-90***	CU1024KO	CU1024K4
95.0	110.0	9.0	10.0	***USH-95***	CU1051KO	CU1051K3
98.0	112.0	8.5	9.5	USH-98	CU1067KO	CU1067K2
100.0	115.0	9.0	10.0	***USH-100***	CU1082KO	CU1082K3
106.0	120.0	8.5	9.5	***USH-106***	CU1135KO	
110.0	125.0	9.0	10.0	USH-110		
112.0	125.0	8.5	9.5	***USH-112***	CU1178KO	CU1178K1
112.0	125.0	9.0	10.0	USH-112A	CU1179KO	
118.0	132.0	8.5	9.5	USH-118	CU1204KO	
125.0	140.0	9.0	10.0	***USH-125***	CU1252KO	CU1252K2
130.0	145.0	9.0	10.0	USH-130	CU1280KO	
132.0	145.0	8.5	9.5	USH-132	CU1291KO	
136.0	150.0	8.5	9.5	***USH-136***	CU1306KO	CU1306K3
140.0	155.0	9.0	10.0	***USH-140***	CU1323KO	CU1323K1
145.0	160.0	9.0	10.0	***USH-145***	CU1343KO	CU1343K2
150.0	165.0	9.0	10.0	USH-150	CU1359KO	CU1359K1
155.0	170.0	9.0	10.0	USH-155	CU3261KO	
160.0	175.0	9.0	10.0	***USH-160***	CU1406KO	
165.0	180.0	9.0	10.0	USH-165	CU1429KO	CU1429K2
175.0	190.0	9.0	10.0	USH-175	CU3038KO	
180.0	200.0	12.0	13.0	***USH-180***	CU1483KO	CU1483K2
190.0	210.0	12.0	13.0	USH-190	CU2516KO	
200.0	220.0	12.0	13.0	USH-200	CU1543KO	CU1543K1
204.0	224.0	12.0	13.0	USH-204	CU1563KO	
224.0	244.0	12.0	13.0	USH-224	CU1609KO	
230.0	250.0	12.0	13.0	USH-230	CU1637KO	
240.0	260.0	12.0	13.0	USH-240	CU1657KO	
250.0	270.0	12.0	13.0	USH-250	CU1678KO	
260.0	280.0	14.0	15.0	USH-260	CU1702KO	CU1702K1
280.0	300.0	14.0	15.0	USH-280	CU1962KO	
295.0	315.0	14.0	15.0	USH-295	CU1756KO	

USH packing shown in italic-bold letter is also available in FPM material.

SPEC SEAL Seals & O-rings Specialist

SPEC SEAL

Seals & O-rings Specialist

Rubber U-Cup - EVUM

Piston & Rod Seals

EVUM (Metric Size)

EVUM

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	120	-30 +110	0.25

- Good for low pressure.
- Simple groove design.
- Excellent wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Extrusion Gap

Pressure	F
20 Bar	0.9
40 Bar	0.7
80 Bar	0.5
120 Bar	0.2

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod/Groove Dia.	Bore/Groove Dia.	Seal Height	Groove Width	Reference (For order processing)
d	D	H	L	
5.0	12.0	5.0	6.5	UC 005-012-05 EVUM
6.0	17.0	6.0	7.5	UC 006-017-06 EVUM
6.0	18.0	8.0	9.5	UC 006-018-08 EVUM
6.0	20.0	8.0	9.5	UC 006-020-08 EVUM
8.0	25.0	6.0	7.5	UC 008-025-06 EVUM
8.0	15.0	6.0	7.5	UC 008-015-06 EVUM
8.0	16.0	6.0	7.5	UC 008-016-06 EVUM
10.0	26.0	8.0	9.5	UC 010-026-08 EVUM
10.0	25.0	10.0	11.5	UC 010-025-10 EVUM
10.0	30.0	10.0	11.5	UC 010-030-10 EVUM
10.0	20.0	8.0	9.5	UC 010-020-08 EVUM
10.0	22.0	6.0	7.5	UC 010-022-06 EVUM
12.0	24.0	6.0	7.5	UC 012-024-06 EVUM
12.0	28.0	10.0	11.5	UC 012-028-10 EVUM
12.0	35.0	12.0	13.5	UC 012-035-12 EVUM
13.0	30.0	10.0	11.5	UC 013-030-10 EVUM
14.0	28.0	10.0	11.5	UC 014-028-10 EVUM
14.0	32.0	10.0	11.5	UC 014-032-10 EVUM
15.0	30.0	8.0	9.5	UC 015-030-08 EVUM
15.0	30.0	10.0	11.5	UC 015-030-10 EVUM
15.0	35.0	10.0	11.5	UC 015-035-10 EVUM
16.0	32.0	8.0	9.5	UC 016-032-08 EVUM
16.0	36.0	10.0	11.5	UC 016-036-10 EVUM
18.0	34.0	8.0	9.5	UC 018-034-08 EVUM
18.0	30.0	10.0	11.5	UC 018-030-10 EVUM
18.0	38.0	10.0	11.5	UC 018-038-10 EVUM
18.0	40.0	10.0	11.5	UC 018-040-10 EVUM
20.0	36.0	8.0	9.5	UC 020-036-08 EVUM
20.0	35.0	10.0	11.5	UC 020-035-10 EVUM
20.0	40.0	10.0	11.5	UC 020-040-10 EVUM
20.0	43.0	12.0	13.5	UC 020-043-12 EVUM
22.0	34.0	10.0	11.5	UC 022-034-10 EVUM
22.0	38.0	10.0	11.5	UC 022-038-10 EVUM
22.0	42.0	10.0	11.5	UC 022-042-10 EVUM
25.0	42.0	8.0	9.5	UC 025-042-08 EVUM
25.0	40.0	10.0	11.5	UC 025-040-10 EVUM
25.0	45.0	10.0	11.5	UC 025-045-10 EVUM
25.0	50.0	12.0	13.5	UC 025-050-12 EVUM
26.0	46.0	10.0	11.5	UC 026-046-10 EVUM
28.0	48.0	10.0	11.5	UC 028-048-10 EVUM

Rubber U-Cup - EVUM

(Metric Size)

Rod/Groove Dia.	Bore/Groove Dia.	Seal Height	Groove Width	Reference (For order processing)
d	D	H	L	
30.0	45.0	10.0	11.5	UC 030-045-10 EVUM
30.0	50.0	10.0	11.5	UC 030-050-10 EVUM
30.0	60.0	15.0	16.5	UC 030-060-15 EVUM
32.0	45.0	10.0	11.5	UC 032-045-10 EVUM
32.0	52.0	10.0	11.5	UC 032-052-10 EVUM
35.0	50.0	10.0	11.5	UC 035-050-10 EVUM
35.0	55.0	10.0	11.5	UC 035-055-10 EVUM
35.0	60.0	12.0	13.5	UC 035-060-12 EVUM
38.0	58.0	10.0	11.5	UC 038-058-10 EVUM
40.0	56.0	10.0	11.5	UC 040-056-10 EVUM
40.0	60.0	10.0	11.5	UC 040-060-10 EVUM
40.0	65.0	12.0	13.5	UC 040-065-12 EVUM
45.0	65.0	10.0	11.5	UC 045-065-10 EVUM
46.0	70.0	12.0	13.5	UC 046-070-12 EVUM
48.0	68.0	10.0	11.5	UC 048-068-10 EVUM
50.0	70.0	10.0	11.5	UC 050-070-10 EVUM
55.0	75.0	10.0	11.5	UC 055-075-10 EVUM
55.0	80.0	12.0	13.5	UC 055-080-12 EVUM
55.0	85.0	15.0	16.5	UC 055-085-15 EVUM
60.0	80.0	10.0	11.5	UC 060-080-10 EVUM
60.0	90.0	15.0	16.5	UC 060-090-15 EVUM
65.0	85.0	10.0	11.5	UC 065-085-10 EVUM
65.0	90.0	12.0	13.5	UC 065-090-12 EVUM
65.0	95.0	12.0	13.5	UC 065-095-12 EVUM
70.0	90.0	10.0	11.5	UC 070-090-10 EVUM
75.0	95.0	10.0	11.5	UC 075-095-10 EVUM
75.0	100.0	15.0	16.5	UC 075-100-15 EVUM
75.0	105.0	15.0	16.5	UC 075-105-15 EVUM
80.0	100.0	10.0	11.5	UC 080-100-10 EVUM
80.0	105.0	12.0	13.5	UC 080-105-12 EVUM
80.0	110.0	15.0	16.5	UC 080-110-15 EVUM
85.0	105.0	10.0	11.5	UC 085-105-10 EVUM
85.0	110.0	12.0	13.5	UC 085-110-12 EVUM
85.0	115.0	15.0	16.5	UC 085-115-15 EVUM
90.0	110.0	10.0	11.5	UC 090-110-10 EVUM
90.0	120.0	15.0	16.5	UC 090-120-15 EVUM
95.0	115.0	10.0	11.5	UC 095-115-10 EVUM
95.0	125.0	15.0	16.5	UC 095-125-15 EVUM
100.0	120.0	10.0	11.5	UC 100-120-10 EVUM
100.0	125.0	12.0	13.5	UC 100-125-12 EVUM

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod/Groove Dia.	Bore/Groove Dia.	Seal Height	Groove Width	Reference (For order processing)
d	D	H	L	
100.0	130.0	15.0	16.5	UC 100-130-15 EVUM
110.0	135.0	12.0	13.5	UC 110-135-12 EVUM
110.0	140.0	15.0	16.5	UC 110-140-15 EVUM
115.0	145.0	12.0	13.5	UC 115-145-12 EVUM
120.0	140.0	10.0	11.5	UC 120-140-10 EVUM
120.0	150.0	15.0	16.5	UC 120-150-15 EVUM
125.0	155.0	15.0	16.5	UC 125-155-15 EVUM
125.0	150.0	18.0	19.5	UC 125-150-18 EVUM
130.0	160.0	15.0	16.5	UC 130-160-15 EVUM
135.0	160.0	18.0	19.5	UC 135-160-18 EVUM
140.0	170.0	15.0	16.5	UC 140-170-15 EVUM
140.0	165.0	18.0	19.5	UC 140-165-18 EVUM
145.0	175.0	15.0	16.5	UC 145-175-15 EVUM
150.0	180.0	15.0	16.5	UC 150-180-15 EVUM
160.0	190.0	15.0	16.5	UC 160-190-15 EVUM
160.0	200.0	20.0	21.5	UC 160-200-20 EVUM
170.0	200.0	15.0	16.5	UC 170-200-15 EVUM
170.0	210.0	20.0	21.5	UC 170-210-20 EVUM
180.0	210.0	22.0	23.5	UC 180-210-22 EVUM
180.0	220.0	22.0	21.5	UC 180-220-22 EVUM
190.0	220.0	15.0	16.5	UC 190-220-15 EVUM
195.0	225.0	15.0	16.5	UC 195-225-15 EVUM
200.0	230.0	15.0	16.5	UC 200-230-15 EVUM
200.0	240.0	20.0	21.5	UC 200-240-20 EVUM
210.0	250.0	20.0	21.5	UC 210-250-20 EVUM
220.0	260.0	20.0	21.5	UC 220-260-20 EVUM
230.0	270.0	20.0	21.5	UC 230-270-20 EVUM
240.0	280.0	20.0	21.5	UC 240-280-20 EVUM
250.0	290.0	20.0	21.5	UC 250-290-20 EVUM
260.0	300.0	20.0	21.5	UC 260-300-20 EVUM
280.0	320.0	20.0	21.5	UC 280-320-20 EVUM
300.0	340.0	20.0	21.5	UC 300-340-20 EVUM
310.0	350.0	20.0	21.5	UC 310-350-20 EVUM
320.0	360.0	20.0	21.5	UC 320-360-20 EVUM
320.0	350.0	22.0	23.5	UC 320-350-22 EVUM
340.0	380.0	20.0	21.5	UC 340-380-20 EVUM
350.0	400.0	25.0	26.5	UC 350-400-25 EVUM
400.0	450.0	25.0	26.5	UC 400-450-25 EVUM
450.0	500.0	25.0	26.5	UC 450-500-25 EVUM

V-Packing

Piston & Rod Seals

F (Metric Size)

F

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric	400	-30 +120	0.5

- Exceptional wear resistance.
- Pre-load adjustment capability.
- Excellent behaviour in harsh conditions.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
D	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5
250-500	10.0

(Metric Size)

Groove Dia. Bore D	Groove Dia. Rod d	Groove Width L	Single Ring Height B	Standard	Reference (For order processing)	Groove Dia. Bore D	Groove Dia. Rod d	Groove Width L	Single Ring Height B	Standard	Reference (For order processing)
12.0	5.0	18.0	2.5		F-012-005	44.0	32.0	22.5	3.0		F-044-032
16.3	6.3	23.0	3.0	JIS	F-016.3-006.3	44.5	31.5	24.5	3.0	JIS	F-044.5-031.5
17.1	7.1	23.0	3.0	JIS	F-017.1-007.1	45.0	25.0	36.6	5.0		F-045-025
18.0	8.0	18.5	2.5		F-018-008	45.0	30.0	22.5	3.0		F-045-030
18.0	8.0	23.0	3.0	JIS	F-018-008 JIS	45.0	32.0	24.5	3.0	JIS	F-045-032
19.0	9.0	23.0	3.0	JIS	F-019-009	45.0	35.0	27.0	3.5		F-045-035
20.0	10.0	18.5	2.5		F-020-010	47.0	32.0	22.5	3.0		F-047-032
20.0	10.0	23.0	3.0	JIS	F-020-010 JIS	47.0	35.0	22.5	3.0		F-047-035
21.2	11.2	23.0	3.0	JIS	F-021.2-011.2	50.0	30.0	38.0	5.0		F-050-030
22.0	10.0	31.2	4.0		F-022-010	50.0	34.0	31.0	4.0	JIS	F-050-034
22.0	12.0	18.5	2.5		F-022-012	50.0	35.0	22.5	3.0		F-050-035
22.5	12.5	23.0	3.0	JIS	F-022.5-012.5	50.0	40.0	21.5	2.5		F-050-040
24.0	14.0	18.5	2.5		F-024-014	51.0	36.0	22.5	3.0		F-051-036
24.0	14.0	23.0	3.0	JIS	F-024-014 JIS	51.5	35.5	31.0	4.0	JIS	F-051.5-035.5
25.0	15.0	18.5	2.5		F-025-015	52.0	40.0	22.5	3.0		F-052-040
26.0	16.0	18.5	2.5		F-026-016	54.0	42.0	22.5	3.0		F-054-042
26.0	16.0	23.0	3.0	JIS	F-026-016 JIS	55.0	38.0	37.0	5.0		F-055-038
27.0	15.0	23.0	3.0		F-027-015	55.0	40.0	22.5	3.0		F-055-040
28.0	15.0	24.5	3.0	JIS	F-028-015	55.0	45.0	22.6	2.8		F-055-045
28.0	18.0	18.5	2.5		F-028-018	56.0	40.0	31.0	4.0	JIS	F-056-040
30.0	20.0	18.5	2.5		F-030-020	60.0	40.0	38.0	5.0		F-060-040
31.0	18.0	24.5	3.0	JIS	F-031-018	60.0	45.0	22.5	3.0		F-060-045
31.5	18.5	24.5	3.0	JIS	F-031.5-018.5	61.0	45.0	31.0	4.0	JIS	F-061-045
32.0	18.0	29.0	4.0		F-032-018	63.0	47.0	31.0	4.0	JIS	F-063-047
32.0	20.0	22.5	3.0		F-032-020	65.0	40.0	46.0	6.0		F-065-040
32.0	22.0	18.5	2.5		F-032-022	65.0	45.0	27.5	3.5		F-065-045
33.0	20.0	24.5	3.0	JIS	F-033-020	65.0	50.0	22.5	3.0		F-065-050
35.0	20.0	38.0	5.0		F-035-020	66.0	50.0	31.0	4.0	JIS	F-066-050
35.0	25.0	23.5	3.0		F-035-025	69.0	53.0	31.0	4.0	JIS	F-069-053
35.4	22.4	24.5	3.0	JIS	F-035.4-022.4	70.0	40.0	57.5	7.5		F-070-040
36.0	20.0	30.5	3.5		F-036-020	70.0	50.0	30.0	4.0		F-070-050
37.0	25.0	22.5	3.0		F-037-025	70.0	55.0	22.5	3.0		F-070-055
38.0	25.0	24.5	3.0	JIS	F-038-025	71.0	55.0	31.0	4.0	JIS	F-071-055
40.0	20.0	40.0	5.0		F-040-020	71.0	56.0	22.5	3.0		F-071-056
40.0	25.0	22.5	3.0		F-040-025	72.0	56.0	31.0	4.0	JIS	F-072-056
40.0	27.0	24.5	3.0	JIS	F-040-027	75.0	55.0	30.0	4.0		F-075-055
40.0	28.0	22.5	3.0		F-040-028	75.0	60.0	22.5	3.0		F-075-060
41.0	28.0	24.5	3.0	JIS	F-041-028	76.0	56.0	38.0	5.0		F-075-056
42.0	30.0	22.5	3.0		F-042-030	76.0	60.0	31.0	4.0	JIS	F-076-060
43.0	28.0	22.5	3.0		F-043-028	79.0	63.0	31.0	4.0	JIS	F-079-063

SPEC SEAL Seals & O-rings Specialist

V-Packing

(Metric Size)

Groove Dia. Bore D	Groove Dia. Rod d	Groove Width L	Single Ring Height B	Standard	Reference (For order processing)	Groove Dia. Bore D	Groove Dia. Rod d	Groove Width L	Single Ring Height B	Standard	Reference (For order processing)
80.0	60.0	37.0	5.0		F-080-060	130.0	115.0	30.0	4.0		F-130-115
80.0	64.0	31.0	4.0	JIS	F-080-064	132.0	112.0	38.0	5.0	JIS	F-132-112
80.0	65.0	22.5	3.0		F-080-065	135.0	105.0	54.0	7.0		F-135-105
83.0	63.0	37.0	5.0		F-083-063	138.0	118.0	38.0	5.0	JIS	F-138-118
85.0	60.0	45.0	6.0		F-085-060	140.0	110.0	54.0	7.0		F-140-110
85.0	65.0	40.0	5.0		F-085-065	140.0	115.0	46.0	6.0		F-140-115
85.0	70.0	22.5	3.0		F-085-070	140.0	120.0	38.0	5.0	JIS	F-140-120 JIS
87.0	67.0	38.0	5.0	JIS	F-087-067	140.0	120.0	40.0	5.0		F-140-120
90.0	65.0	45.0	6.0		F-090-065	145.0	125.0	40.0	5.0		F-145-125
90.0	70.0	38.0	5.0	JIS	F-090-070 JIS	150.0	120.0	54.0	7.0		F-150-120
90.0	70.0	40.0	5.0		F-090-070	150.0	125.0	45.5	6.0	JIS	F-150-125 JIS
90.0	75.0	22.5	3.0		F-090-075	150.0	125.0	46.0	6.0		F-150-125
91.0	71.0	38.0	5.0	JIS	F-091-071	150.0	130.0	40.0	5.0		F-150-130
95.0	75.0	38.0	5.0	JIS	F-095-075 JIS	155.0	125.0	54.0	7.0		F-155-125
95.0	75.0	40.0	5.0		F-095-075	155.0	140.0	34.0	4.0		F-155-140
95.0	80.0	22.5	3.0		F-095-080	157.0	132.0	45.5	6.0	JIS	F-157-132
100.0	70.0	61.5	8.5		F-100-070	160.0	130.0	60.0	8.0		F-160-130
100.0	75.0	49.0	6.0		F-100-075	160.0	135.0	45.5	6.0	JIS	F-160-135
100.0	80.0	38.0	5.0	JIS	F-100-080 JIS	160.0	140.0	38.0	5.0		F-160-140
100.0	80.0	40.0	5.0		F-100-080	165.0	140.0	45.5	6.0	JIS	F-165-140 JIS
105.0	80.0	46.0	6.0		F-105-080	165.0	140.0	46.0	6.0		F-165-140
105.0	85.0	38.0	5.0	JIS	F-105-085 JIS	165.0	145.0	40.0	5.0		F-165-145
105.0	85.0	40.0	5.0		F-105-085	170.0	140.0	54.0	7.0		F-170-140
105.0	90.0	22.5	3.0		F-105-090	170.0	145.0	45.5	6.0	JIS	F-170-145 JIS
110.0	90.0	38.0	5.0	JIS	F-110-090 JIS	170.0	145.0	48.5	6.5		F-170-145
110.0	90.0	40.0	5.0		F-110-090	170.0	150.0	40.0	5.0		F-170-150
110.0	95.0	38.0	5.0		F-110-095	175.0	150.0	45.5	6.0	JIS	F-175-150
112.0	92.0	38.0	5.0	JIS	F-112-092	175.0	155.0	40.0	5.0		F-175-155
115.0	90.0	47.0	6.0		F-115-090	180.0	150.0	60.0	7.0		F-180-150
115.0	95.0	38.0	5.0	JIS	F-115-095	180.0	155.0	45.5	6.0	JIS	F-180-155
115.0	100.0	30.0	4.0		F-115-100	180.0	160.0	40.0	5.0		F-180-160
120.0	100.0	38.0	5.0	JIS	F-120-100 JIS	184.0	150.0	63.0	8.0		F-184-150
120.0	100.0	40.0	5.0		F-120-100	185.0	160.0	45.5	6.0	JIS	F-185-160 JIS
120.0	105.0	30.0	4.0		F-120-105	185.0	160.0	55.0	7.0		F-185-160
125.0	100.0	48.0	6.0		F-125-100	190.0	160.0	60.0	7.0		F-190-160
125.0	105.0	38.0	5.0	JIS	F-125-105 JIS	190.0	165.0	45.5	6.0	JIS	F-190-165 JIS
125.0	105.0	42.0	5.0		F-125-105	190.0	165.0	53.5	7.5		F-190-165
125.0	110.0	30.0	3.0		F-125-110	190.0	170.0	46.0	4.7		F-190-170
126.0	106.0	38.0	5.0	JIS	F-126-106	195.0	170.0	45.5	6.0	JIS	F-195-170 JIS
130.0	110.0	40.0	5.0		F-130-110	195.0	170.0	46.0	6.0		F-195-170

(Metric Size)

Groove Dia. Bore D	Groove Dia. Rod d	Groove Width L	Single Ring Height B	Standard	Reference (For order processing)	Groove Dia. Bore D	Groove Dia. Rod d	Groove Width L	Single Ring Height B	Standard	Reference (For order processing)
200.0	170.0	54.0	7.0		F-200-170	312.0	280.0	54.0	7.0	JIS	F-312-280
200.0	175.0	45.5	6.0	JIS	F-200-175	315.0	280.0	54.0	7.5		F-315-280
205.0	175.0	56.5	7.0		F-205-175	320.0	290.0	53.0	5.0		F-320-290
205.0	180.0	45.5	6.0	JIS	F-205-180	320.0	300.0	42.0	7.5		F-320-300
207.0	175.0	60.0	7.5		F-207-175	330.0	300.0	60.0	9.0		F-330-300
210.0	180.0	60.0	7.0		F-210-180	332.0	300.0	54.0	7.0	JIS	F-332-300
210.0	185.0	48.5	6.5		F-210-185	340.0	300.0	69.5	9.0		F-340-300
215.0	190.0	45.5	6.0	JIS	F-215-190	347.0	315.0	54.0	7.0	JIS	F-347-315
215.0	195.0	38.0	5.0		F-215-195	350.0	310.0	69.8	7.0		F-350-310
220.0	190.0	50.0	7.5		F-220-190	350.0	320.0	55.0	7.0		F-350-320
220.0	200.0	40.0	5.0		F-220-200	360.0	320.0	69.0	9.0		F-360-320
224.0	199.0	45.5	6.0	JIS	F-224-199	360.0	330.0	65.5	7.5		F-360-330
225.0	200.0	45.5	6.0	JIS	F-225-200	367.0	335.0	54.0	7.0	JIS	F-367-335
225.0	205.0	37.0	5.0		F-225-205	370.0	340.0	61.0	7.5		F-370-340
227.0	195.0	66.0	8.0		F-227-195	380.0	340.0	66.0	8.0		F-380-340
230.0	190.0	74.0	10.0		F-230-190	380.0	350.0	54.0	7.0		F-380-350
230.0	200.0	60.0	7.5		F-230-200	387.0	355.0	54.0	7.0	JIS	F-387-355
235.0	215.0	45.0	5.0		F-235-215	390.0	350.0	69.0	10.0		F-390-350
237.0	212.0	45.5	6.0	JIS	F-237-212	390.0	360.0	58.0	8.0		F-390-360
240.0	210.0	56.0	7.5		F-240-210	390.0	370.0	45.0	6.0		F-390-370
245.0	215.0	65.5	6.5		F-245-215	400.0	360.0	67.5	8.5		F-400-360
249.0	224.0	45.5	6.0	JIS	F-249-224	400.0	370.0	55.0	7.0		F-400-370
250.0	220.0	59.0	7.0		F-250-220	407.0	375.0	54.0	7.0	JIS	F-407-375
250.0	225.0	45.5	6.0	JIS	F-250-225	410.0	380.0	58.0	8.0		F-410-380
255.0	225.0	55.0	7.5		F-255-225	420.0	380.0	77.5	10.0		F-420-380
260.0	230.0	61.0	8.5		F-260-230	420.0	390.0	65.5	7.5		F-420-390
261.0	236.0	45.5	6.0	JIS	F-261-236	432.0	400.0	54.0	7.0	JIS	F-432-400
265.0	225.0	64.5	7.0		F-265-225	440.0	400.0	67.5	8.5		F-440-400
270.0	240.0	55.0	5.0		F-270-240	450.0	410.0	79.0	10.0		F-450-410
270.0	250.0	42.0	7.5		F-270-250	450.0	420.0	58.0	7.0		F-450-420
275.0	245.0	54.0	5.0		F-275-245	457.0	425.0	54.0	7.0	JIS	F-457-425
275.0	250.0	45.5	6.0	JIS	F-275-250	460.0	420.0	66.0	8.0		F-460-420
275.0	255.0	40.0	7.5		F-275-255	470.0	440.0	65.5	7.5		F-470-440
280.0	250.0	60.5	5.0		F-280-250	480.0	440.0	70.0	9.0		F-480-440
285.0	265.0	45.0	7.5		F-285-265	482.0	450.0	54.0	7.0	JIS	F-482-450
290.0	260.0	60.0	8.0		F-290-260	490.0	450.0	67.5	8.5		F-490-450
297.0	265.0	54.0	7.0	JIS	F-297-265	500.0	450.0	100.0	13.0		F-500-450
300.0	270.0	60.0	8.0		F-300-270	500.0	460.0	70.0	9.0		F-500-460
305.0	275.0	65.5	7.0		F-305-275	507.0	475.0	54.0	7.0	JIS	F-507-475
310.0	280.0	56.0	7.0		F-310-280	510.0	470.0	65.0	8.0		F-510-470

V-Packing

(Metric Size)

Groove Dia.		Groove Width	Single Ring Height	Standard	Reference (For order processing)
Bore	Rod				
D	d	L	B		
515.0	485.0	54.0	7.0		F-515-485
530.0	500.0	57.5	7.5		F-530-500
532.0	500.0	54.0	7.0	JIS	F-532-500
545.0	505.0	62.0	9.0		F-545-505
570.0	530.0	63.0	8.0	JIS	F-570-530
600.0	560.0	63.0	8.0	JIS	F-600-560 JIS
600.0	560.0	65.0	9.0		F-600-560
640.0	600.0	63.0	8.0	JIS	F-640-600
670.0	620.0	100.0	13.0		F-670-620
670.0	630.0	63.0	8.0	JIS	F-670-630
710.0	670.0	63.0	8.0	JIS	F-710-670
750.0	710.0	63.0	8.0	JIS	F-750-710
790.0	750.0	65.5	8.5		F-790-750
850.0	810.0	79.0	10.0		F-850-810
965.0	915.0	89.5	11.5		F-965-915
1065.0	1025.0	71.0	9.0		F-1065-1025
1150.0	1100.0	105.0	12.5		F-1150-1100

SPEC SEAL
Seals & O-rings Specialist

SPEC SEAL

Seals & O-rings Specialist

V-Packing

Piston & Rod Seals

F (Inch Size)

F

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric	400	-30 +120	0.5

- Exceptional wear resistance.
- Pre-load adjustment capability.
- Excellent behaviour in harsh conditions.
- Long service life.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Seal Cross Section	Reference (For order processing)	Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Seal Cross Section	Reference (For order processing)
d	D	H	C/S		d	D	H	C/S	
.250	.750	1.000	.250	F-0.750-0.250	1.875	2.500	1.187	.312	F-2.500-1.875
.375	.875	1.000	.250	F-0.875-0.375	1.875	2.625	1.375	.375	F-2.625-1.875
.500	.875	.875	.187	F-0.875-0.500	2.000	2.500	1.000	.250	F-2.500-2.000
.500	1.000	1.000	.250	F-1.000-0.500	2.000	2.625	1.187	.312	F-2.625-2.000
.562	1.062	1.000	.250	F-1.062-0.562	2.000	2.750	1.375	.375	F-2.750-2.000
.625	1.000	.875	.187	F-1.000-0.625	2.000	3.000	1.750	.500	F-3.000-2.000
.625	1.125	1.000	.250	F-1.125-0.625	2.125	2.625	1.000	.250	F-2.625-2.125
.750	1.250	1.000	.250	F-1.250-0.750	2.125	2.750	1.187	.312	F-2.750-2.125
.750	1.375	1.187	.312	F-1.375-0.750	2.187	2.937	1.375	.375	F-2.937-2.187
.750	1.500	1.375	.375	F-1.500-0.750	2.200	2.700	1.000	.250	F-2.700-2.200
.812	1.312	1.000	.250	F-1.312-0.812	2.250	2.750	1.000	.250	F-2.750-2.250
.875	1.250	.875	.187	F-1.250-0.875	2.250	2.875	1.187	.312	F-2.875-2.250
.875	1.375	1.000	.250	F-1.375-0.875	2.250	3.000	1.375	.375	F-3.000-2.250
.875	1.500	1.187	.312	F-1.500-0.875	2.275	3.025	1.375	.375	F-3.025-2.275
1.000	1.375	.875	.187	F-1.375-1.000	2.375	2.875	1.000	.250	F-2.875-2.375
1.000	1.500	1.000	.250	F-1.500-1.000	2.375	3.000	1.187	.312	F-3.000-2.375
1.000	1.625	1.187	.312	F-1.625-1.000	2.500	2.875	.875	.187	F-2.875-2.500
1.000	1.750	1.375	.375	F-1.750-1.000	2.500	3.000	1.000	.250	F-3.000-2.500
1.062	1.562	.875	.187	F-1.562-1.062	2.500	3.125	1.187	.312	F-3.125-2.500
1.125	1.625	1.000	.250	F-1.625-1.125	2.500	3.250	1.375	.375	F-3.250-2.500
1.125	1.750	1.187	.312	F-1.750-1.125	2.500	3.500	1.750	.500	F-3.500-2.500
1.187	1.687	1.000	.250	F-1.687-1.187	2.625	3.250	1.187	.312	F-3.250-2.625
1.250	1.750	1.000	.250	F-1.750-1.250	2.700	3.450	1.375	.375	F-3.450-2.700
1.250	1.875	1.187	.312	F-1.875-1.250	2.750	3.250	1.000	.250	F-3.250-2.750
1.250	2.000	1.375	.375	F-2.000-1.250	2.750	3.375	1.187	.312	F-3.375-2.750
1.250	2.250	1.750	.500	F-2.250-1.250	2.750	3.500	1.375	.375	F-3.500-2.750
1.375	1.750	.875	.187	F-1.750-1.375	2.775	3.525	1.375	.375	F-3.525-2.775
1.375	1.875	1.000	.250	F-1.875-1.375	2.875	3.375	1.000	.250	F-3.375-2.875
1.375	2.000	1.187	.312	F-2.000-1.375	2.950	3.450	1.000	.250	F-3.450-2.950
1.437	2.062	1.187	.312	F-2.062-1.437	3.000	3.500	1.000	.250	F-3.500-3.000
1.500	2.000	1.000	.250	F-2.000-1.500	3.000	3.625	1.187	.312	F-3.625-3.000
1.500	2.125	1.187	.312	F-2.125-1.500	3.000	3.750	1.375	.375	F-3.750-3.000
1.500	2.250	1.375	.375	F-2.250-1.500	3.000	4.000	1.750	.500	F-4.000-3.000
1.500	2.500	1.750	.500	F-2.500-1.500	3.125	3.500	.875	.187	F-3.500-3.125
1.625	2.250	1.187	.312	F-2.250-1.625	3.250	3.625	.875	.187	F-3.625-3.250
1.750	2.250	1.000	.250	F-2.250-1.750	3.250	3.750	1.000	.250	F-3.750-3.250
1.750	2.375	1.187	.312	F-2.375-1.750	3.250	4.000	1.375	.375	F-4.000-3.250
1.750	2.500	1.375	.375	F-2.500-1.750	3.250	4.250	1.750	.500	F-4.250-3.250
1.750	2.750	1.750	.500	F-2.750-1.750	3.275	4.025	1.375	.375	F-4.025-3.275
1.875	2.375	1.000	.250	F-2.375-1.875	3.375	3.875	1.000	.250	F-3.875-3.375

V-Packing

(Inch Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Seal Cross Section	Reference (For order processing)	Rod/ Groove Dia.	Bore/ Groove Dia.	Seal Height	Seal Cross Section	Reference (For order processing)
d	D	H	C/S		d	D	H	C/S	
3.375	4.000	1.187	.312	F-4.000-3.375	5.750	6.250	1.000	.250	F-6.250-5.750
3.500	4.000	1.000	.250	F-4.000-3.500	5.750	6.375	1.187	.312	F-6.375-5.750
3.500	4.250	1.375	.375	F-4.250-3.500	5.750	6.500	1.375	.375	F-6.500-5.750
3.500	4.500	1.750	.500	F-4.500-3.500	5.875	6.375	1.000	.250	F-6.375-5.875
3.750	4.250	1.000	.250	F-4.250-3.750	6.000	6.500	1.000	.250	F-6.500-6.000
3.750	4.375	1.187	.312	F-4.375-3.750	6.000	6.750	1.375	.375	F-6.750-6.000
3.750	4.500	1.375	.375	F-4.500-3.750	6.000	7.000	1.750	.500	F-7.000-6.000
3.775	4.525	1.375	.375	F-4.525-3.775	6.250	6.875	1.187	.312	F-6.875-6.250
4.000	4.500	1.000	.250	F-4.500-4.000	6.250	7.000	1.375	.375	F-7.000-6.250
4.000	4.750	1.375	.375	F-4.750-4.000	6.445	6.945	1.000	.250	F-6.945-6.445
4.000	5.000	1.750	.500	F-5.000-4.000	6.500	7.000	1.000	.250	F-7.000-6.500
4.250	4.750	1.000	.250	F-4.750-4.250	6.500	7.250	1.375	.375	F-7.250-6.500
4.250	5.000	1.375	.375	F-5.000-4.250	6.500	7.500	1.750	.500	F-7.500-6.500
4.250	5.125	1.500	.437	F-5.125-4.250	6.750	7.375	1.187	.312	F-7.375-6.750
4.275	5.025	1.375	.375	F-5.025-4.275	6.750	7.500	1.375	.375	F-7.500-6.750
4.500	5.000	1.000	.250	F-5.000-4.500	7.000	7.500	1.000	.250	F-7.500-7.000
4.500	5.250	1.375	.375	F-5.250-4.500	7.000	8.000	1.750	.500	F-8.000-7.000
4.500	5.375	1.500	.437	F-5.375-4.500	7.445	7.945	1.000	.250	F-7.945-7.445
4.500	5.500	1.750	.500	F-5.500-4.500	7.500	8.000	1.000	.250	F-8.000-7.500
4.580	5.080	1.000	.250	F-5.080-4.580	7.500	8.125	1.187	.312	F-8.125-7.500
4.750	5.250	1.000	.250	F-5.250-4.750	7.905	8.543	1.187	.312	F-8.543-7.905
4.750	5.375	1.187	.312	F-5.375-4.750	8.000	8.500	1.000	.250	F-8.500-8.000
4.750	5.500	1.375	.375	F-5.500-4.750	8.000	9.000	1.750	.500	F-9.000-8.000
4.750	5.625	1.500	.437	F-5.625-4.750	8.125	8.625	1.000	.250	F-8.625-8.125
4.775	5.525	1.375	.375	F-5.525-4.775	8.250	8.750	1.000	.250	F-8.750-8.250
5.000	5.500	1.000	.250	F-5.500-5.000	8.250	9.000	1.375	.375	F-9.000-8.250
5.000	5.625	1.187	.312	F-5.625-5.000	8.445	9.195	1.375	.375	F-9.195-8.445
5.000	5.750	1.375	.375	F-5.750-5.000	8.750	9.375	1.187	.312	F-9.375-8.750
5.000	5.875	1.500	.437	F-5.875-5.000	9.000	9.500	1.000	.250	F-9.500-9.000
5.000	6.000	1.750	.500	F-6.000-5.000	9.000	9.750	1.375	.375	F-9.750-9.000
5.125	5.625	1.000	.250	F-5.625-5.125	9.125	9.750	1.187	.312	F-9.750-9.125
5.250	5.750	1.000	.250	F-5.750-5.250	9.375	9.875	1.000	.250	F-9.875-9.375
5.250	6.000	1.375	.375	F-6.000-5.250	9.375	10.000	1.187	.312	F-10.000-9.375
5.250	6.250	1.750	.500	F-6.250-5.250	9.625	10.125	1.000	.250	F-10.125-9.625
5.375	6.250	1.500	.437	F-6.250-5.375	9.750	10.500	1.375	.375	F-10.500-9.750
5.445	5.945	1.000	.250	F-5.945-5.445					
5.500	6.000	1.000	.250	F-6.000-5.500					
5.500	6.250	1.375	.375	F-6.250-5.500					
5.500	6.500	1.750	.500	F-6.500-5.500					
5.700	6.450	1.375	.375	F-6.450-5.700					

SPEC SEAL

Seals & O-rings Specialist

Rubber Energized U-Cup

Piston & Rod Seals

POLYPAK (Inch Size)

(Size list on page 158-194)

TYPE B

STD

DEEP

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
Molythane	350	-35 +95	0.5

- Good for high and low pressure.
- Excellent wear resistance.
- Wide range in size.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

Piston & Rod Seals

POLYSEAL (Inch Size)

(Size list on page 158-194)

TYPE B

STD

DEEP

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
Lubrithane	350	-54 +93	0.5

- Good for high and low pressure.
- Low friction.
- Excellent wear resistance.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
1/16	5/16	1/8	1/8	.062	.312	.138	125-00062
3/32	11/32	1/8	1/8	.093	.343	.138	125-00093
1/8	3/8	1/8	1/8	.125	.375	.138	125-00125
1/8	3/8	1/4	1/8	.125	.375	.275	125-00125-250B
.140	.390	1/8	1/8	.140	.390	.138	125-00140
3/16	7/16	1/8	1/8	.187	.437	.138	125-00187
3/16	7/16	1/4	1/8	.187	.437	.275	125-00187-250B
3/16	9/16	3/16	3/16	.187	.562	.207	187-00187
3/16	3/4	9/32	9/32	.187	.750	.309	281-00187
1/4	1/2	1/8	1/8	.250	.500	.138	125-00250
1/4	1/2	1/4	1/8	.250	.500	.275	125-00250-250
1/4	1/2	1/4	1/8	.250	.500	.275	125-00250-250B
1/4	5/8	3/16	3/16	.250	.625	.207	187-00250
1/4	5/8	5/16	3/16	.250	.625	.344	187-00250-312
1/4	3/4	1/4	1/4	.250	.750	.275	250-00250
1/4	3/4	3/8	1/4	.250	.750	.413	250-00250-375B
1/4	7/8	5/16	5/16	.250	.875	.344	312-00250
5/16	9/16	1/8	1/8	.312	.562	.138	125-00312
5/16	9/16	1/4	1/8	.312	.562	.275	125-00312-250
5/16	9/16	1/4	1/8	.312	.562	.275	125-00312-250B
5/16	11/16	3/16	3/16	.312	.687	.207	187-00312
5/16	11/16	5/16	3/16	.312	.687	.344	187-00312-312B
5/16	3/4	7/32	7/32	.312	.750	.240	218-00312
5/16	13/16	1/4	1/4	.312	.812	.275	250-00312
.353	.853	3/8	1/4	.353	.853	.413	250-00353-375B
.353	.977	3/8	5/16	.353	.977	.413	312-00353-375B
23/64	39/64	1/8	1/8	.359	.609	.138	125-00359
3/8	5/8	1/8	1/8	.375	.625	.138	125-00375
3/8	5/8	3/16	1/8	.375	.625	.207	125-00375-187B
3/8	5/8	1/4	1/8	.375	.625	.275	125-00375-250B
3/8	3/4	3/16	3/16	.375	.750	.207	187-00375
3/8	3/4	5/16	3/16	.375	.750	.344	187-00375-312
3/8	3/4	5/16	3/16	.375	.750	.344	187-00375-312B
3/8	7/8	1/4	1/4	.375	.875	.275	250-00375
3/8	7/8	3/8	1/4	.375	.875	.413	250-00375-375
3/8	1	5/16	5/16	.375	1.000	.344	312-00375
7/16	11/16	1/8	1/8	.437	.687	.138	125-00437
7/16	11/16	1/4	1/8	.437	.687	.275	125-00437-250
7/16	11/16	1/4	1/8	.437	.687	.275	125-00437-250B
7/16	3/4	5/32	5/32	.437	.750	.172	156-00437
7/16	13/16	3/16	3/16	.437	.812	.207	187-00437
7/16	13/16	5/16	3/16	.437	.812	.344	187-00437-312
7/16	13/16	5/16	3/16	.437	.812	.344	187-00437-312B
7/16	7/8	7/32	7/32	.437	.875	.240	218-00437
7/16	15/16	1/4	1/4	.437	.937	.275	250-00437

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
7/16	15/16	3/8	1/4	.437	.937	.413	250-00437-375
7/16	15/16	3/8	1/4	.437	.937	.413	250-00437-375B
7/16	1-1/16	5/16	5/16	.437	1.062	.344	312-00437
.478	.978	3/8	1/4	.478	.978	.413	250-00478-375B
1/2	3/4	1/8	1/8	.500	.750	.138	125-00500
1/2	3/4	1/8	1/8	.500	.750	.138	125-00500-125B
1/2	3/4	1/4	1/8	.500	.750	.275	125-00500-250
1/2	3/4	1/4	1/8	.500	.750	.275	125-00500-250B
1/2	7/8	3/16	3/16	.500	.875	.207	187-00500
1/2	7/8	5/16	3/16	.500	.875	.344	187-00500-312B
1/2	1	1/4	1/4	.500	1.000	.275	250-00500
1/2	1	3/8	1/4	.500	1.000	.413	250-00500-375
1/2	1	3/8	1/4	.500	1.000	.413	250-00500-375B
1/2	1-1/8	5/16	5/16	.500	1.125	.344	312-00500
1/2	1-1/4	3/8	3/8	.500	1.250	.413	375-00500
17/32	25/32	1/8	1/8	.531	.781	.138	125-00531
9/16	13/16	1/8	1/8	.562	.812	.138	125-00562
9/16	13/16	1/4	1/8	.562	.812	.275	125-00562-250B
9/16	29/32	11/64	11/64	.562	.906	.188	171-00562
9/16	15/16	3/16	3/16	.562	.937	.207	187-00562
9/16	15/16	5/16	3/16	.562	.937	.344	187-00562-312B
9/16	1	7/32	7/32	.562	1.000	.240	218-00562
9/16	1-1/16	1/4	1/4	.562	1.062	.275	250-00562
9/16	1-1/16	3/8	1/4	.562	1.062	.413	250-00562-375B
5/8	7/8	1/8	1/8	.625	.875	.138	125-00625
5/8	7/8	1/8	1/8	.625	.875	.138	125-00625-125B
5/8	7/8	3/16	1/8	.625	.875	.207	125-00625-187
5/8	7/8	3/16	1/8	.625	.875	.207	125-00625-187B
5/8	7/8	1/4	1/8	.625	.875	.275	125-00625-250
5/8	7/8	1/4	1/8	.625	.875	.275	125-00625-250B
5/8	1	3/16	3/16	.625	1.000	.207	187-00625
5/8	1	5/16	3/16	.625	1.000	.344	187-00625-312
5/8	1	5/16	3/16	.625	1.000	.344	187-00625-312B
5/8	1-1/8	1/4	1/4	.625	1.125	.275	250-00625
5/8	1-1/8	3/8	1/4	.625	1.125	.413	250-00625-375
5/8	1-1/8	3/8	1/4	.625	1.125	.413	250-00625-375B
5/8	1-1/4	5/16	5/16	.625	1.250	.344	312-00625
5/8	1-3/8	3/8	3/8	.625	1.375	.413	375-00625
5/8	1-5/8	1/2	1/2	.625	1.625	.550	500-00625
21/32	1-1/32	3/16	3/16	.656	1.031	.207	187-00656
11/16	15/16	1/8	1/8	.687	.937	.138	125-00687
11/16	15/16	1/4	1/8	.687	.937	.275	125-00687-250
11/16	15/16	1/4	1/8	.687	.937	.275	125-00687-250B
11/16	1-1/16	3/16	3/16	.687	1.062	.207	187-00687
11/16	1-1/16	5/16	3/16	.687	1.062	.344	187-00687-312B

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
11/16	1-3/16	1/4	1/4	.687	1.187	.275	250-00687
11/16	1-3/16	3/8	1/4	.687	1.187	.413	250-00687-375B
11/16	1-1/4	9/32	9/32	.687	1.250	.309	281-00687
11/16	1-5/16	5/16	5/16	.687	1.312	.344	312-00687
3/4	1	1/8	1/8	.750	1.000	.138	125-00750
3/4	1	1/8	1/8	.750	1.000	.138	125-00750-125B
3/4	1	3/16	1/8	.750	1.000	.207	125-00750-187B
3/4	1	1/4	1/8	.750	1.000	.275	125-00750-250
3/4	1	1/4	1/8	.750	1.000	.275	125-00750-250B
3/4	1-1/16	5/32	5/32	.750	1.062	.172	156-00750
3/4	1-1/8	3/16	3/16	.750	1.125	.207	187-00750
3/4	1-1/8	1/4	3/16	.750	1.125	.275	187-00750-250
3/4	1-1/8	5/16	3/16	.750	1.125	.344	187-00750-312
3/4	1-1/8	5/16	3/16	.750	1.125	.344	187-00750-312B
3/4	1-3/16	7/32	7/32	.750	1.187	.240	218-00750
3/4	1-1/4	1/4	1/4	.750	1.250	.275	250-00750
3/4	1-1/4	3/8	1/4	.750	1.250	.413	250-00750-375
3/4	1-1/4	3/8	1/4	.750	1.250	.413	250-00750-375B
3/4	1-3/8	5/16	5/16	.750	1.375	.344	312-00750
3/4	1-3/8	1/2	5/16	.750	1.375	.550	312-00750-500
3/4	1-3/8	1/2	5/16	.750	1.375	.550	312-00750-500B
3/4	1-7/16	11/32	11/32	.750	1.437	.377	343-00750
3/4	1-1/2	3/8	3/8	.750	1.500	.413	375-00750
3/4	1-1/2	5/8	3/8	.750	1.500	.688	375-00750-625
3/4	1-3/4	1/2	1/2	.750	1.750	.550	500-00750
.800	1.050	1/4	1/8	.800	1.050	.275	125-00800-250B
13/16	1-1/16	1/8	1/8	.812	1.062	.138	125-00812
13/16	1-1/16	1/8	1/8	.812	1.062	.138	125-00812-125B
13/16	1-1/16	1/4	1/8	.812	1.062	.275	125-00812-250B
13/16	1-3/16	3/16	3/16	.812	1.187	.207	187-00812
13/16	1-3/16	5/16	3/16	.812	1.187	.344	187-00812-312
13/16	1-3/16	5/16	3/16	.812	1.187	.344	187-00812-312B
13/16	1-5/16	1/4	1/4	.812	1.312	.275	250-00812
13/16	1-7/16	5/16	5/16	.812	1.437	.344	312-00812
13/16	1-7/16	1/2	5/16	.812	1.437	.550	312-00812-500B
7/8	1-1/8	1/8	1/8	.875	1.125	.138	125-00875
7/8	1-1/8	3/16	1/8	.875	1.125	.207	125-00875-187
7/8	1-1/8	3/16	1/8	.875	1.125	.207	125-00875-187B
7/8	1-1/8	1/4	1/8	.875	1.125	.275	125-00875-250
7/8	1-1/8	1/4	1/8	.875	1.125	.275	125-00875-250B
7/8	1-1/4	3/16	3/16	.875	1.250	.207	187-00875
7/8	1-1/4	5/16	3/16	.875	1.250	.344	187-00875-312
7/8	1-1/4	5/16	3/16	.875	1.250	.344	187-00875-312B
7/8	1-1/4	3/8	3/16	.875	1.250	.413	187-00875-375
7/8	1-3/8	1/4	1/4	.875	1.375	.275	250-00875

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
7/8	1-3/8	3/8	1/4	.875	1.375	.413	250-00875-375
7/8	1-3/8	3/8	1/4	.875	1.375	.413	250-00875-375B
7/8	1-1/2	5/16	5/16	.875	1.500	.344	312-00875
7/8	1-5/8	3/8	3/8	.875	1.625	.413	375-00875
29/32	1-5/32	1/8	1/8	.906	1.156	.138	125-00906
15/16	1-3/16	1/8	1/8	.937	1.187	.138	125-00937
15/16	1-3/16	1/4	1/8	.937	1.187	.275	125-00937-250B
15/16	1-1/4	5/32	5/32	.937	1.250	.172	156-00937
15/16	1-5/16	3/16	3/16	.937	1.312	.207	187-00937
15/16	1-5/16	5/16	3/16	.937	1.312	.344	187-00937-312B
15/16	1-3/8	7/32	7/32	.937	1.375	.240	218-00937
15/16	1-7/16	1/4	1/4	.937	1.437	.275	250-00937
15/16	1-11/16	3/8	3/8	.937	1.687	.413	375-00937
1	1-1/4	1/8	1/8	1.000	1.250	.138	125-01000
1	1-1/4	1/8	1/8	1.000	1.250	.138	125-01000-125B
1	1-1/4	5/32	1/8	1.000	1.250	.172	125-01000-156B
1	1-1/4	.172	1/8	1.000	1.250	.189	125-01000-172
1	1-1/4	3/16	1/8	1.000	1.250	.207	125-01000-187B
1	1-1/4	1/4	1/8	1.000	1.250	.275	125-01000-250
1	1-1/4	1/4	1/8	1.000	1.250	.275	125-01000-250B
1	1-5/16	5/32	5/32	1.000	1.312	.172	156-01000
1	1-3/8	3/16	3/16	1.000	1.375	.207	187-01000
1	1-3/8	1/4	3/16	1.000	1.375	.275	187-01000-250
1	1-3/8	5/16	3/16	1.000	1.375	.344	187-01000-312
1	1-3/8	5/16	3/16	1.000	1.375	.344	187-01000-312B
1	1-1/2	1/4	1/4	1.000	1.500	.275	250-01000
1	1-1/2	3/8	1/4	1.000	1.500	.413	250-01000-375
1	1-1/2	3/8	1/4	1.000	1.500	.413	250-01000-375B
1	1-5/8	5/16	5/16	1.000	1.625	.344	312-01000
1	1-5/8	1/2	5/16	1.000	1.625	.550	312-01000-500
1	1-5/8	1/2	5/16	1.000	1.625	.550	312-01000-500B
1	1-3/4	3/8	3/8	1.000	1.750	.413	375-01000
1	1-3/4	5/8	3/8	1.000	1.750	.688	375-01000-625
1	1-7/8	7/16	7/16	1.000	1.875	.481	437-01000
1	1-7/8	9/16	7/16	1.000	1.875	.619	437-01000-562
1	2	1/2	1/2	1.000	2.000	.550	500-01000
1	2	3/4	1/2	1.000	2.000	.825	500-01000-750
1-1/16	1-5/16	1/8	1/8	1.062	1.312	.138	125-01062
1-1/16	1-5/16	.170	1/8	1.062	1.312	.187	125-01062-170B
1-1/16	1-5/16	1/4	1/8	1.062	1.312	.275	125-01062-250B
1-1/16	1-3/8	5/32	5/32	1.062	1.375	.172	156-01062
1-1/16	1-7/16	3/16	3/16	1.062	1.437	.207	187-01062
1-1/16	1-7/16	5/16	3/16	1.062	1.437	.344	187-01062-312
1-1/16	1-7/16	5/16	3/16	1.062	1.437	.344	187-01062-312B
1-1/16	1-9/16	1/4	1/4	1.062	1.562	.275	250-01062

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
1-1/16	1-11/16	5/16	5/16	1.062	1.687	.344	312-01062
1-1/16	1-3/4	11/32	11/32	1.062	1.750	.377	343-01062
1-3/32	1-19/32	1/4	1/4	1.093	1.593	.275	250-01093
1-1/8	1-3/8	1/8	1/8	1.125	1.375	.138	125-01125
1-1/8	1-3/8	1/4	1/8	1.125	1.375	.275	125-01125-250
1-1/8	1-3/8	1/4	1/8	1.125	1.375	.275	125-01125-250B
1-1/8	1-1/2	3/16	3/16	1.125	1.500	.207	187-01125
1-1/8	1-1/2	3/16	3/16	1.125	1.500	.207	187-01125-187B
1-1/8	1-1/2	5/16	3/16	1.125	1.500	.344	187-01125-312
1-1/8	1-1/2	5/16	3/16	1.125	1.500	.344	187-01125-312B
1-1/8	1-5/8	1/4	1/4	1.125	1.625	.275	250-01125
1-1/8	1-5/8	3/8	1/4	1.125	1.625	.413	250-01125-375
1-1/8	1-5/8	3/8	1/4	1.125	1.625	.413	250-01125-375B
1-1/8	1-3/4	5/16	5/16	1.125	1.750	.344	312-01125
1-1/8	1-3/4	1/2	5/16	1.125	1.750	.550	312-01125-500
1-1/8	1-7/8	3/8	3/8	1.125	1.875	.413	375-01125
1-1/8	2	1/2	7/16	1.125	2.000	.550	437-01125-500B
1-1/8	2-1/8	1/2	1/2	1.125	2.125	.550	500-01125
1-1/8	2-1/8	3/4	1/2	1.125	2.125	.825	500-01125-750B
1-3/16	1-7/16	1/8	1/8	1.187	1.437	.138	125-01187
1-3/16	1-7/16	3/16	1/8	1.187	1.437	.207	125-01187-187
1-3/16	1-7/16	3/16	1/8	1.187	1.437	.207	125-01187-187B
1-3/16	1-7/16	1/4	1/8	1.187	1.437	.275	125-01187-250B
1-3/16	1-1/2	5/32	5/32	1.187	1.500	.172	156-01187
1-3/16	1-9/16	3/16	3/16	1.187	1.562	.207	187-01187
1-3/16	1-9/16	5/16	3/16	1.187	1.562	.344	187-01187-312B
1-3/16	1-11/16	1/4	1/4	1.187	1.687	.275	250-01187
1-3/16	1-13/16	5/16	5/16	1.187	1.812	.344	312-01187
1-3/16	1-13/16	1/2	5/16	1.187	1.812	.550	312-01187-500
1-3/16	2	13/32	13/32	1.187	2.000	.447	406-01187
1-3/16	2-3/16	1/2	1/2	1.187	2.187	.550	500-01187
1-1/4	1-1/2	1/8	1/8	1.250	1.500	.138	125-01250
1-1/4	1-1/2	3/16	1/8	1.250	1.500	.207	125-01250-187
1-1/4	1-1/2	3/16	1/8	1.250	1.500	.207	125-01250-187B
1-1/4	1-1/2	1/4	1/8	1.250	1.500	.275	125-01250-250
1-1/4	1-1/2	1/4	1/8	1.250	1.500	.275	125-01250-250B
1-1/4	1-9/16	5/32	5/32	1.250	1.562	.172	156-01250
1-1/4	1-5/8	3/16	3/16	1.250	1.625	.207	187-01250
1-1/4	1-5/8	1/4	3/16	1.250	1.625	.275	187-01250-250B
1-1/4	1-5/8	5/16	3/16	1.250	1.625	.344	187-01250-312
1-1/4	1-5/8	5/16	3/16	1.250	1.625	.344	187-01250-312B
1-1/4	1-5/8	3/8	3/16	1.250	1.625	.413	187-01250-375B
1-1/4	1-3/4	1/4	1/4	1.250	1.750	.275	250-01250
1-1/4	1-3/4	3/8	1/4	1.250	1.750	.413	250-01250-375
1-1/4	1-3/4	3/8	1/4	1.250	1.750	.413	250-01250-375B

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
1-1/4	1-7/8	5/16	5/16	1.250	1.875	.344	312-01250
1-1/4	1-7/8	1/2	5/16	1.250	1.875	.550	312-01250-500
1-1/4	1-7/8	1/2	5/16	1.250	1.875	.550	312-01250-500B
1-1/4	2	3/8	3/8	1.250	2.000	.413	375-01250
1-1/4	2	5/8	3/8	1.250	2.000	.688	375-01250-625
1-1/4	2	5/8	3/8	1.250	2.000	.688	375-01250-625B
1-1/4	2-1/16	13/32	13/32	1.250	2.062	.447	406-01250
1-1/4	2-1/8	7/16	7/16	1.250	2.125	.481	437-01250
1-1/4	2-1/4	1/2	1/2	1.250	2.250	.550	500-01250
1-1/4	2-1/2	5/8	5/8	1.250	2.500	.688	625-01250
1-5/16	1-9/16	1/8	1/8	1.312	1.562	.138	125-01312
1-5/16	1-9/16	3/16	1/8	1.312	1.562	.207	125-01312-187B
1-5/16	1-11/16	3/16	3/16	1.312	1.687	.207	187-01312
1-5/16	1-11/16	3/16	3/16	1.312	1.687	.207	187-01312-187B
1-5/16	1-11/16	5/16	3/16	1.312	1.687	.344	187-01312-312B
1-5/16	1-13/16	1/4	1/4	1.312	1.812	.275	250-01312
1-5/16	1-13/16	3/8	1/4	1.312	1.812	.413	250-01312-375B
1-5/16	1-15/16	5/16	5/16	1.312	1.937	.344	312-01312
1-5/16	2	11/32	11/32	1.312	2.000	.377	343-01312
1-5/16	2-1/16	3/8	3/8	1.312	2.062	.413	375-01312
1-5/16	2-1/16	7/16	3/8	1.312	2.062	.481	375-01312-437
1-5/16	2-5/16	1/2	1/2	1.312	2.312	.550	500-01312
1-3/8	1-5/8	1/8	1/8	1.375	1.625	.138	125-01375
1-3/8	1-5/8	1/8	1/8	1.375	1.625	.138	125-01375-125B
1-3/8	1-5/8	.178	1/8	1.375	1.625	.196	125-01375-178B
1-3/8	1-5/8	1/4	1/8	1.375	1.625	.275	125-01375-250
1-3/8	1-5/8	1/4	1/8	1.375	1.625	.275	125-01375-250B
1-3/8	1-11/16	5/32	5/32	1.375	1.687	.172	156-01375
1-3/8	1-3/4	3/16	3/16	1.375	1.750	.207	187-01375
1-3/8	1-3/4	5/16	3/16	1.375	1.750	.344	187-01375-312
1-3/8	1-3/4	5/16	3/16	1.375	1.750	.344	187-01375-312B
1-3/8	1-7/8	1/4	1/4	1.375	1.875	.275	250-01375
1-3/8	1-7/8	3/8	1/4	1.375	1.875	.413	250-01375-375
1-3/8	1-7/8	3/8	1/4	1.375	1.875	.413	250-01375-375B
1-3/8	2	5/16	5/16	1.375	2.000	.344	312-01375
1-3/8	2	1/2	5/16	1.375	2.000	.550	312-01375-500
1-3/8	2	1/2	5/16	1.375	2.000	.550	312-01375-500B
1-3/8	2-1/8	3/8	3/8	1.375	2.125	.413	375-01375
1-3/8	2-1/8	5/8	3/8	1.375	2.125	.688	375-01375-625B
1-3/8	2-1/4	7/16	7/16	1.375	2.250	.481	437-01375
1-3/8	2-3/8	1/2	1/2	1.375	2.375	.550	500-01375
1-7/16	1-11/16	1/8	1/8	1.437	1.687	.138	125-01437
1-7/16	1-11/16	1/4	1/8	1.437	1.687	.275	125-01437-250
1-7/16	1-11/16	1/4	1/8	1.437	1.687	.275	125-01437-250B
1-7/16	1-13/16	3/16	3/16	1.437	1.812	.207	187-01437

SPEC SEAL Seals & O-rings Specialist

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
1-7/16	1-13/16	5/16	3/16	1.437	1.812	.344	187-01437-312
1-7/16	1-13/16	5/16	3/16	1.437	1.812	.344	187-01437-312B
1-7/16	1-15/16	1/4	1/4	1.437	1.937	.275	250-01437
1-7/16	2-1/16	1/2	5/16	1.437	2.062	.550	312-01437-500B
1-7/16	2-3/16	3/8	3/8	1.437	2.187	.413	375-01437
1-7/16	2-1/4	13/32	13/32	1.437	2.250	.447	406-01437
1-7/16	2-5/16	7/16	7/16	1.437	2.312	.481	437-01437
1-1/2	1-3/4	1/8	1/8	1.500	1.750	.138	125-01500
1-1/2	1-3/4	1/8	1/8	1.500	1.750	.138	125-01500-125B
1-1/2	1-3/4	1/4	1/8	1.500	1.750	.275	125-01500-250
1-1/2	1-3/4	1/4	1/8	1.500	1.750	.275	125-01500-250B
1-1/2	1-3/4	5/16	1/8	1.500	1.750	.344	125-01500-312
1-1/2	1-13/16	5/32	5/32	1.500	1.812	.172	156-01500
1-1/2	1-13/16	5/16	5/32	1.500	1.812	.344	156-01500-312B
1-1/2	1-7/8	3/16	3/16	1.500	1.875	.207	187-01500
1-1/2	1-7/8	3/16	3/16	1.500	1.875	.207	187-01500-187B
1-1/2	1-7/8	1/4	3/16	1.500	1.875	.275	187-01500-250B
1-1/2	1-7/8	9/32	3/16	1.500	1.875	.309	187-01500-281
1-1/2	1-7/8	5/16	3/16	1.500	1.875	.344	187-01500-312B
1-1/2	1-7/8	3/8	3/16	1.500	1.875	.413	187-01500-375
1-1/2	1-7/8	3/8	3/16	1.500	1.875	.413	187-01500-375B
1-1/2	2	1/4	1/4	1.500	2.000	.275	250-01500
1-1/2	2	1/4	1/4	1.500	2.000	.275	250-01500-250B
1-1/2	2	3/8	1/4	1.500	2.000	.413	250-01500-375
1-1/2	2	3/8	1/4	1.500	2.000	.413	250-01500-375B
1-1/2	2-1/8	5/16	5/16	1.500	2.125	.344	312-01500
1-1/2	2-1/8	1/2	5/16	1.500	2.125	.550	312-01500-500
1-1/2	2-1/8	1/2	5/16	1.500	2.125	.550	312-01500-500B
1-1/2	2-1/4	3/8	3/8	1.500	2.250	.413	375-01500
1-1/2	2-1/4	5/8	3/8	1.500	2.250	.688	375-01500-625B
1-1/2	2-3/8	7/16	7/16	1.500	2.375	.481	437-01500
1-1/2	2-1/2	1/2	1/2	1.500	2.500	.550	500-01500
1-1/2	2-1/2	3/4	1/2	1.500	2.500	.825	500-01500-750B
1-9/16	1-13/16	1/8	1/8	1.562	1.812	.138	125-01562
1-9/16	1-15/16	3/16	3/16	1.562	1.937	.207	187-01562
1-9/16	1-15/16	1/4	3/16	1.562	1.937	.275	187-01562-250
1-9/16	2-5/16	3/8	3/8	1.562	2.312	.413	375-01562
1-5/8	1-7/8	1/8	1/8	1.625	1.875	.138	125-01625
1-5/8	1-7/8	1/4	1/8	1.625	1.875	.275	125-01625-250
1-5/8	2	3/16	3/16	1.625	2.000	.207	187-01625
1-5/8	2	3/16	3/16	1.625	2.000	.207	187-01625-187B
1-5/8	2	1/4	3/16	1.625	2.000	.275	187-01625-250
1-5/8	2	.266	3/16	1.625	2.000	.293	187-01625-266B
1-5/8	2	5/16	3/16	1.625	2.000	.344	187-01625-312
1-5/8	2	5/16	3/16	1.625	2.000	.344	187-01625-312B

SPEC SEAL Seals & O-rings Specialist

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
1-5/8	2	3/8	3/16	1.625	2.000	.413	187-01625-375
1-5/8	2	3/8	3/16	1.625	2.000	.413	187-01625-375B
1-5/8	2-1/8	1/4	1/4	1.625	2.125	.275	250-01625
1-5/8	2-1/8	3/8	1/4	1.625	2.125	.413	250-01625-375B
1-5/8	2-1/4	5/16	5/16	1.625	2.250	.344	312-01625
1-5/8	2-1/4	1/2	5/16	1.625	2.250	.550	312-01625-500B
1-5/8	2-3/8	3/8	3/8	1.625	2.375	.413	375-01625
1-5/8	2-3/8	3/8	3/8	1.625	2.375	.413	375-01625-375B
1-5/8	2-3/8	5/8	3/8	1.625	2.375	.688	375-01625-625B
1-5/8	2-11/16	17/32	17/32	1.625	2.687	.584	531-01625
1-11/16	1-15/16	1/8	1/8	1.687	1.937	.138	125-01687
1-11/16	2-1/16	3/16	3/16	1.687	2.062	.207	187-01687
1-11/16	2-1/16	3/8	3/16	1.687	2.062	.413	187-01687-375
1-11/16	2-5/16	5/16	5/16	1.687	2.312	.344	312-01687
1-11/16	2-5/16	1/2	5/16	1.687	2.312	.550	312-01687-500
1-11/16	2-5/16	1/2	5/16	1.687	2.312	.550	312-01687-500B
1-11/16	2-1/2	13/32	13/32	1.687	2.500	.447	406-01687
1-3/4	2	1/8	1/8	1.750	2.000	.138	125-01750
1-3/4	2	1/8	1/8	1.750	2.000	.138	125-01750-125B
1-3/4	2	1/4	1/8	1.750	2.000	.275	125-01750-250
1-3/4	2-1/8	3/16	3/16	1.750	2.125	.207	187-01750
1-3/4	2-1/8	.230	3/16	1.750	2.125	.253	187-01750-230B
1-3/4	2-1/8	5/16	3/16	1.750	2.125	.344	187-01750-312B
1-3/4	2-1/8	3/8	3/16	1.750	2.125	.413	187-01750-375
1-3/4	2-1/8	3/8	3/16	1.750	2.125	.413	187-01750-375B
1-3/4	2-3/16	7/32	7/32	1.750	2.187	.240	218-01750
1-3/4	2-1/4	1/4	1/4	1.750	2.250	.275	250-01750
1-3/4	2-1/4	1/4	1/4	1.750	2.250	.275	250-01750-250B
1-3/4	2-1/4	3/8	1/4	1.750	2.250	.413	250-01750-375
1-3/4	2-1/4	3/8	1/4	1.750	2.250	.413	250-01750-375B
1-3/4	2-3/8	5/16	5/16	1.750	2.375	.344	312-01750
1-3/4	2-3/8	1/2	5/16	1.750	2.375	.550	312-01750-500
1-3/4	2-3/8	1/2	5/16	1.750	2.375	.550	312-01750-500B
1-3/4	2-1/2	3/8	3/8	1.750	2.500	.413	375-01750
1-3/4	2-1/2	5/8	3/8	1.750	2.500	.688	375-01750-625B
1-3/4	2-9/16	13/32	13/32	1.750	2.562	.447	406-01750
1-3/4	2-5/8	7/16	7/16	1.750	2.625	.481	437-01750
1-3/4	2-3/4	1/2	1/2	1.750	2.750	.550	500-01750
1-3/4	2-3/4	3/4	1/2	1.750	2.750	.825	500-01750-750
1-3/4	2-3/4	3/4	1/2	1.750	2.750	.825	500-01750-750B
1-3/4	3	5/8	5/8	1.750	3.000	.688	625-01750
1-13/16	2-3/16	3/16	3/16	1.812	2.187	.207	187-01812
1-13/16	2-1/2	11/32	11/32	1.812	2.500	.377	343-01812
1-13/16	3-1/16	5/8	5/8	1.812	3.062	.688	625-01812
1-7/8	2-1/8	1/8	1/8	1.875	2.125	.138	125-01875

SPEC SEAL Seals & O-rings Specialist

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
1-7/8	2-1/8	1/8	1/8	1.875	2.125	.138	125-01875-125B
1-7/8	2-1/4	3/16	3/16	1.875	2.250	.207	187-01875
1-7/8	2-1/4	3/8	3/16	1.875	2.250	.413	187-01875-375
1-7/8	2-1/4	3/8	3/16	1.875	2.250	.413	187-01875-375B
1-7/8	2-3/8	1/4	1/4	1.875	2.375	.275	250-01875
1-7/8	2-3/8	3/8	1/4	1.875	2.375	.413	250-01875-375B
1-7/8	2-1/2	5/16	5/16	1.875	2.500	.344	312-01875
1-7/8	2-1/2	1/2	5/16	1.875	2.500	.550	312-01875-500
1-7/8	2-1/2	1/2	5/16	1.875	2.500	.550	312-01875-500B
1-7/8	2-5/8	3/8	3/8	1.875	2.625	.413	375-01875
1-7/8	2-5/8	5/8	3/8	1.875	2.625	.688	375-01875-625
1-7/8	2-3/4	7/16	7/16	1.875	2.750	.481	437-01875
1-7/8	2-7/8	1/2	1/2	1.875	2.875	.550	500-01875
1-7/8	3	7/8	9/16	1.875	3.000	.963	562-01875-875
1-7/8	3-1/8	1	5/8	1.875	3.125	1.100	625-01875-1000
1-15/16	2-5/16	3/16	3/16	1.937	2.312	.207	187-01937
1-15/16	2-5/16	9/32	3/16	1.937	2.312	.309	187-01937-281B
1-15/16	2-5/16	3/8	3/16	1.937	2.312	.413	187-01937-375
1-15/16	2-7/16	3/8	1/4	1.937	2.437	.413	250-01937-375B
1-15/16	2-9/16	5/16	5/16	1.937	2.562	.344	312-01937
2	2-1/4	1/8	1/8	2.000	2.250	.138	125-02000
2	2-1/4	3/16	1/8	2.000	2.250	.207	125-02000-187B
2	2-1/4	1/4	1/8	2.000	2.250	.275	125-02000-250
2	2-3/8	3/16	3/16	2.000	2.375	.207	187-02000
2	2-3/8	3/16	3/16	2.000	2.375	.207	187-02000-187B
2	2-3/8	.230	3/16	2.000	2.375	.253	187-02000-230B
2	2-3/8	5/16	3/16	2.000	2.375	.344	187-02000-312B
2	2-3/8	3/8	3/16	2.000	2.375	.413	187-02000-375
2	2-3/8	3/8	3/16	2.000	2.375	.413	187-02000-375B
2	2-1/2	1/4	1/4	2.000	2.500	.275	250-02000
2	2-1/2	1/4	1/4	2.000	2.500	.275	250-02000-250B
2	2-1/2	3/8	1/4	2.000	2.500	.413	250-02000-375
2	2-1/2	3/8	1/4	2.000	2.500	.413	250-02000-375B
2	2-5/8	5/16	5/16	2.000	2.625	.344	312-02000
2	2-5/8	1/2	5/16	2.000	2.625	.550	312-02000-500
2	2-5/8	1/2	5/16	2.000	2.625	.550	312-02000-500B
2	2.690	3/8	.345	2.000	2.690	.413	345-02000-375
2	2-3/4	3/8	3/8	2.000	2.750	.413	375-02000
2	2-3/4	1/2	3/8	2.000	2.750	.550	375-02000-500
2	2-3/4	5/8	3/8	2.000	2.750	.688	375-02000-625
2	2-3/4	5/8	3/8	2.000	2.750	.688	375-02000-625B
2	2-7/8	7/16	7/16	2.000	2.875	.481	437-02000
2	3	1/2	1/2	2.000	3.000	.550	500-02000
2	3	3/4	1/2	2.000	3.000	.825	500-02000-750B
2	3-1/4	5/8	5/8	2.000	3.250	.688	625-02000

SPEC SEAL Seals & O-rings Specialist

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
2	3-1/2	1-1/8	3/4	2.000	3.500	1.238	750-02000-1125
2-1/16	2-3/8	5/32	5/32	2.062	2.375	.172	156-02062
2-1/16	2-7/16	3/16	3/16	2.062	2.437	.207	187-02062
2-1/16	2-1/2	7/32	7/32	2.062	2.500	.240	218-02062
2-1/16	2-13/16	3/8	3/8	2.062	2.812	.413	375-02062
2-1/8	2-3/8	1/8	1/8	2.125	2.375	.138	125-02125
2-1/8	2-3/8	1/4	1/8	2.125	2.375	.275	125-02125-250B
2-1/8	2-1/2	3/16	3/16	2.125	2.500	.207	187-02125
2-1/8	2-1/2	3/16	3/16	2.125	2.500	.207	187-02125-187B
2-1/8	2-1/2	1/4	3/16	2.125	2.500	.275	187-02125-250
2-1/8	2-1/2	3/8	3/16	2.125	2.500	.413	187-02125-375
2-1/8	2-1/2	3/8	3/16	2.125	2.500	.413	187-02125-375B
2-1/8	2-5/8	1/4	1/4	2.125	2.625	.275	250-02125
2-1/8	2-5/8	1/4	1/4	2.125	2.625	.275	250-02125-250B
2-1/8	2-5/8	3/8	1/4	2.125	2.625	.413	250-02125-375
2-1/8	2-5/8	3/8	1/4	2.125	2.625	.413	250-02125-375B
2-1/8	2-3/4	5/16	5/16	2.125	2.750	.344	312-02125
2-1/8	2-3/4	1/2	5/16	2.125	2.750	.550	312-02125-500
2-1/8	2-3/4	1/2	5/16	2.125	2.750	.550	312-02125-500B
2-1/8	2-7/8	3/8	3/8	2.125	2.875	.413	375-02125
2-1/8	2-7/8	5/8	3/8	2.125	2.875	.688	375-02125-625
2-1/8	3	7/16	7/16	2.125	3.000	.481	437-02125
2-1/8	3-1/8	1/2	1/2	2.125	3.125	.550	500-02125
2-3/16	2-9/16	3/8	3/16	2.187	2.562	.413	187-02187-375
2-3/16	3	13/32	13/32	2.187	3.000	.447	406-02187
2-1/4	2-1/2	1/8	1/8	2.250	2.500	.138	125-02250
2-1/4	2-5/8	3/16	3/16	2.250	2.625	.207	187-02250
2-1/4	2-5/8	3/8	3/16	2.250	2.625	.413	187-02250-375
2-1/4	2-5/8	3/8	3/16	2.250	2.625	.413	187-02250-375B
2-1/4	2-3/4	1/4	1/4	2.250	2.750	.275	250-02250
2-1/4	2-3/4	3/8	1/4	2.250	2.750	.413	250-02250-375
2-1/4	2-3/4	3/8	1/4	2.250	2.750	.413	250-02250-375B
2-1/4	2-13/16	3/8	9/32	2.250	2.812	.413	281-02250-375B
2-1/4	2-7/8	5/16	5/16	2.250	2.875	.344	312-02250
2-1/4	2-7/8	1/2	5/16	2.250	2.875	.550	312-02250-500B
2-1/4	3	3/8	3/8	2.250	3.000	.413	375-02250
2-1/4	3	5/8	3/8	2.250	3.000	.688	375-02250-625
2-1/4	3	5/8	3/8	2.250	3.000	.688	375-02250-625B
2-1/4	3-1/8	3/8	7/16	2.250	3.125	.413	437-02250-375
2-1/4	3-1/8	5/8	7/16	2.250	3.125	.688	437-02250-625B
2-1/4	3-1/4	1/2	1/2	2.250	3.250	.550	500-02250
2-1/4	3-3/8	7/8	9/16	2.250	3.375	.963	562-02250-875
2-1/4	3-1/2	5/8	5/8	2.250	3.500	.688	625-02250
2-5/16	2-7/8	9/32	9/32	2.312	2.875	.309	281-02312
2-5/16	2-15/16	5/16	5/16	2.312	2.937	.344	312-02312

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
2-5/16	3	11/32	11/32	2.312	3.000	.377	343-02312
2-3/8	2-5/8	1/8	1/8	2.375	2.625	.138	125-02375
2-3/8	2-5/8	1/4	1/8	2.375	2.625	.275	125-02375-250
2-3/8	2-3/4	3/16	3/16	2.375	2.750	.207	187-02375
2-3/8	2-3/4	.266	3/16	2.375	2.750	.293	187-02375-266B
2-3/8	2-3/4	9/32	3/16	2.375	2.750	.309	187-02375-281B
2-3/8	2-3/4	3/8	3/16	2.375	2.750	.413	187-02375-375
2-3/8	2-3/4	3/8	3/16	2.375	2.750	.413	187-02375-375B
2-3/8	2-3/4	7/16	3/16	2.375	2.750	.481	187-02375-437B
2-3/8	2-7/8	1/4	1/4	2.375	2.875	.275	250-02375
2-3/8	2-7/8	3/8	1/4	2.375	2.875	.413	250-02375-375B
2-3/8	3	5/16	5/16	2.375	3.000	.344	312-02375
2-3/8	3	1/2	5/16	2.375	3.000	.550	312-02375-500
2-3/8	3	1/2	5/16	2.375	3.000	.550	312-02375-500B
2-3/8	3-1/8	3/8	3/8	2.375	3.125	.413	375-02375
2-3/8	3-1/8	5/8	3/8	2.375	3.125	.688	375-02375-625B
2-3/8	3-3/8	1/2	1/2	2.375	3.375	.550	500-02375
2-3/8	3-1/2	7/8	9/16	2.375	3.500	.963	562-02375-875B
2-3/8	3-5/8	5/8	5/8	2.375	3.625	.688	625-02375
2-7/16	3-3/16	3/8	3/8	2.437	3.187	.413	375-02437
2-1/2	2-3/4	1/8	1/8	2.500	2.750	.138	125-02500
2-1/2	2-3/4	1/4	1/8	2.500	2.750	.275	125-02500-250
2-1/2	2-3/4	1/4	1/8	2.500	2.750	.275	125-02500-250B
2-1/2	2-7/8	3/16	3/16	2.500	2.875	.207	187-02500
2-1/2	2-7/8	1/4	3/16	2.500	2.875	.275	187-02500-250B
2-1/2	2-7/8	3/8	3/16	2.500	2.875	.413	187-02500-375
2-1/2	2-7/8	3/8	3/16	2.500	2.875	.413	187-02500-375B
2-1/2	2-15/16	7/32	7/32	2.500	2.937	.240	218-02500
2-1/2	3	1/4	1/4	2.500	3.000	.275	250-02500
2-1/2	3	1/4	1/4	2.500	3.000	.275	250-02500-250B
2-1/2	3	3/8	1/4	2.500	3.000	.413	250-02500-375
2-1/2	3	3/8	1/4	2.500	3.000	.413	250-02500-375B
2-1/2	3-1/8	5/16	5/16	2.500	3.125	.344	312-02500
2-1/2	3-1/8	1/2	5/16	2.500	3.125	.550	312-02500-500
2-1/2	3-1/8	1/2	5/16	2.500	3.125	.550	312-02500-500B
2-1/2	3-3/16	11/32	11/32	2.500	3.187	.377	343-02500
2-1/2	3-1/4	3/8	3/8	2.500	3.250	.413	375-02500
2-1/2	3-1/4	5/8	3/8	2.500	3.250	.688	375-02500-625
2-1/2	3-1/4	5/8	3/8	2.500	3.250	.688	375-02500-625B
2-1/2	3-1/4	15/16	3/8	2.500	3.250	1.031	375-02500-937
2-1/2	3-3/8	7/16	7/16	2.500	3.375	.481	437-02500
2-1/2	3-3/8	5/8	7/16	2.500	3.375	.688	437-02500-625B
2-1/2	3-1/2	1/2	1/2	2.500	3.500	.550	500-02500
2-1/2	3-1/2	3/4	1/2	2.500	3.500	.825	500-02500-750
2-1/2	3-1/2	3/4	1/2	2.500	3.500	.825	500-02500-750B

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
2-1/2	3-5/8	9/16	9/16	2.500	3.625	.619	562-02500
2-1/2	3-3/4	5/8	5/8	2.500	3.750	.688	625-02500
2-9/16	3	7/32	7/32	2.562	3.000	.240	218-02562
2-9/16	3-1/16	3/8	1/4	2.562	3.062	.413	250-02562-375B
2-9/16	3-1/8	9/32	9/32	2.562	3.125	.309	281-02562
2-9/16	3-3/16	5/16	5/16	2.562	3.187	.344	312-02562
2-5/8	2-7/8	1/8	1/8	2.625	2.875	.138	125-02625
2-5/8	3	3/16	3/16	2.625	3.000	.207	187-02625
2-5/8	3	9/32	3/16	2.625	3.000	.309	187-02625-281B
2-5/8	3	3/8	3/16	2.625	3.000	.413	187-02625-375
2-5/8	3	3/8	3/16	2.625	3.000	.413	187-02625-375B
2-5/8	3-1/8	1/4	1/4	2.625	3.125	.275	250-02625
2-5/8	3-1/8	3/8	1/4	2.625	3.125	.413	250-02625-375
2-5/8	3-1/8	3/8	1/4	2.625	3.125	.413	250-02625-375B
2-5/8	3-1/4	5/16	5/16	2.625	3.250	.344	312-02625
2-5/8	3-1/4	1/2	5/16	2.625	3.250	.550	312-02625-500
2-5/8	3-1/4	1/2	5/16	2.625	3.250	.550	312-02625-500B
2-5/8	3-3/8	3/8	3/8	2.625	3.375	.413	375-02625
2-5/8	3-3/8	5/8	3/8	2.625	3.375	.688	375-02625-625B
2-5/8	3-3/4	9/16	9/16	2.625	3.750	.619	562-02625
2-11/16	3-3/8	11/32	11/32	2.687	3.375	.377	343-02687
2-11/16	3-7/16	3/8	3/8	2.687	3.437	.413	375-02687
2-11/16	3-1/2	13/32	13/32	2.687	3.500	.447	406-02687
2-3/4	3	1/8	1/8	2.750	3.000	.138	125-02750
2-3/4	3-1/8	3/16	3/16	2.750	3.125	.207	187-02750
2-3/4	3-1/8	3/16	3/16	2.750	3.125	.207	187-02750-187B
2-3/4	3-1/8	9/32	3/16	2.750	3.125	.309	187-02750-281B
2-3/4	3-1/8	3/8	3/16	2.750	3.125	.413	187-02750-375
2-3/4	3-1/8	3/8	3/16	2.750	3.125	.413	187-02750-375B
2-3/4	3-1/4	1/4	1/4	2.750	3.250	.275	250-02750
2-3/4	3-1/4	.288	1/4	2.750	3.250	.317	250-02750-288
2-3/4	3-1/4	3/8	1/4	2.750	3.250	.413	250-02750-375
2-3/4	3-1/4	3/8	1/4	2.750	3.250	.413	250-02750-375B
2-3/4	3-3/8	5/16	5/16	2.750	3.375	.344	312-02750
2-3/4	3-3/8	1/2	5/16	2.750	3.375	.550	312-02750-500B
2-3/4	3-1/2	3/8	3/8	2.750	3.500	.413	375-02750
2-3/4	3-1/2	5/8	3/8	2.750	3.500	.688	375-02750-625
2-3/4	3-1/2	5/8	3/8	2.750	3.500	.688	375-02750-625B
2-3/4	3-3/4	1/2	1/2	2.750	3.750	.550	500-02750
2-3/4	4	5/8	5/8	2.750	4.000	.688	625-02750
2-3/4	4	1	5/8	2.750	4.000	1.100	625-02750-1000
2-3/4	4	1	5/8	2.750	4.000	1.100	625-02750-1000B
2-3/4	4-1/4	1-1/8	3/4	2.750	4.250	1.238	750-02750-1125
2-13/16	3-1/4	7/32	7/32	2.812	3.250	.240	218-02812
2-13/16	3-1/2	3/8	11/32	2.812	3.500	.413	343-02812-375

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
2-13/16	4-1/16	5/8	5/8	2.812	4.062	.688	625-02812
2-7/8	3-1/8	1/8	1/8	2.875	3.125	.138	125-02875
2-7/8	3-1/4	3/16	3/16	2.875	3.250	.207	187-02875
2-7/8	3-1/4	9/32	3/16	2.875	3.250	.309	187-02875-281B
2-7/8	3-1/4	3/8	3/16	2.875	3.250	.413	187-02875-375B
2-7/8	3-3/8	1/4	1/4	2.875	3.375	.275	250-02875
2-7/8	3-3/8	3/8	1/4	2.875	3.375	.413	250-02875-375B
2-7/8	3-1/2	5/16	5/16	2.875	3.500	.344	312-02875
2-7/8	3-1/2	1/2	5/16	2.875	3.500	.550	312-02875-500B
2-7/8	3-5/8	3/8	3/8	2.875	3.625	.413	375-02875
2-7/8	3-5/8	5/8	3/8	2.875	3.625	.688	375-02875-625B
2-7/8	3-3/4	7/16	7/16	2.875	3.750	.481	437-02875
2-7/8	3-7/8	1/2	1/2	2.875	3.875	.550	500-02875
2-7/8	4	7/8	9/16	2.875	4.000	.963	562-02875-875
2-7/8	4-1/8	1	5/8	2.875	4.125	1.100	625-02875-1000
2-7/8	4-1/8	1	5/8	2.875	4.125	1.100	625-02875-1000B
2-15/16	3-1/2	1/2	9/32	2.937	3.500	.550	281-02937-500B
2-15/16	3-11/16	3/8	3/8	2.937	3.687	.413	375-02937
3	3-1/4	1/8	1/8	3.000	3.250	.138	125-03000
3	3-1/4	1/4	1/8	3.000	3.250	.275	125-03000-250
3	3-3/8	3/16	3/16	3.000	3.375	.207	187-03000
3	3-3/8	1/4	3/16	3.000	3.375	.275	187-03000-250B
3	3-3/8	3/8	3/16	3.000	3.375	.413	187-03000-375
3	3-3/8	3/8	3/16	3.000	3.375	.413	187-03000-375B
3	3-7/16	7/32	7/32	3.000	3.437	.240	218-03000
3	3-1/2	1/4	1/4	3.000	3.500	.275	250-03000
3	3-1/2	1/4	1/4	3.000	3.500	.275	250-03000-250B
3	3-1/2	3/8	1/4	3.000	3.500	.413	250-03000-375
3	3-1/2	3/8	1/4	3.000	3.500	.413	250-03000-375B
3	3-5/8	5/16	5/16	3.000	3.625	.344	312-03000
3	3-5/8	1/2	5/16	3.000	3.625	.550	312-03000-500
3	3-5/8	1/2	5/16	3.000	3.625	.550	312-03000-500B
3	3-5/8	9/16	5/16	3.000	3.625	.619	312-03000-562
3	3-3/4	3/8	3/8	3.000	3.750	.413	375-03000
3	3-3/4	1/2	3/8	3.000	3.750	.550	375-03000-500B
3	3-3/4	5/8	3/8	3.000	3.750	.688	375-03000-625
3	3-3/4	5/8	3/8	3.000	3.750	.688	375-03000-625B
3	3-7/8	7/16	7/16	3.000	3.875	.481	437-03000
3	3-7/8	11/16	7/16	3.000	3.875	.756	437-03000-687
3	4	1/2	1/2	3.000	4.000	.550	500-03000
3	4	3/4	1/2	3.000	4.000	.825	500-03000-750
3	4	3/4	1/2	3.000	4.000	.825	500-03000-750B
3	4-1/4	5/8	5/8	3.000	4.250	.688	625-03000
3	4-3/8	11/16	11/16	3.000	4.375	.756	687-03000
3	4-1/2	3/4	3/4	3.000	4.500	.825	750-03000

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
3	5	1	1	3.000	5.000	1.100	1000-03000
3-1/16	3-1/2	7/32	7/32	3.062	3.500	.240	218-03062
3-1/8	3-1/2	3/16	3/16	3.125	3.500	.207	187-03125
3-1/8	3-1/2	3/16	3/16	3.125	3.500	.207	187-03125-187B
3-1/8	3-1/2	3/8	3/16	3.125	3.500	.413	187-03125-375
3-1/8	3-1/2	3/8	3/16	3.125	3.500	.413	187-03125-375B
3-1/8	3-5/8	1/4	1/4	3.125	3.625	.275	250-03125
3-1/8	3-5/8	3/8	1/4	3.125	3.625	.413	250-03125-375
3-1/8	3-3/4	5/16	5/16	3.125	3.750	.344	312-03125
3-1/8	3-7/8	3/8	3/8	3.125	3.875	.413	375-03125
3-1/8	3-7/8	5/8	3/8	3.125	3.875	.688	375-03125-625B
3-1/8	4	7/16	7/16	3.125	4.000	.481	437-03125
3-1/8	4	11/16	7/16	3.125	4.000	.756	437-03125-687B
3-1/8	4-5/8	3/4	3/4	3.125	4.625	.825	750-03125
3-1/4	3-1/2	1/8	1/8	3.250	3.500	.138	125-03250
3-1/4	3-5/8	3/16	3/16	3.250	3.625	.207	187-03250
3-1/4	3-5/8	3/8	3/16	3.250	3.625	.413	187-03250-375
3-1/4	3-5/8	3/8	3/16	3.250	3.625	.413	187-03250-375B
3-1/4	3-3/4	1/4	1/4	3.250	3.750	.275	250-03250
3-1/4	3-3/4	3/8	1/4	3.250	3.750	.413	250-03250-375
3-1/4	3-3/4	3/8	1/4	3.250	3.750	.413	250-03250-375B
3-1/4	3-7/8	5/16	5/16	3.250	3.875	.344	312-03250
3-1/4	3-7/8	1/2	5/16	3.250	3.875	.550	312-03250-500
3-1/4	3-7/8	1/2	5/16	3.250	3.875	.550	312-03250-500B
3-1/4	4	3/8	3/8	3.250	4.000	.413	375-03250
3-1/4	4	5/8	3/8	3.250	4.000	.688	375-03250-625
3-1/4	4	5/8	3/8	3.250	4.000	.688	375-03250-625B
3-1/4	4-1/8	7/16	7/16	3.250	4.125	.481	437-03250
3-1/4	4-1/4	1/2	1/2	3.250	4.250	.550	500-03250
3-1/4	4-1/4	3/4	1/2	3.250	4.250	.825	500-03250-750B
3-1/4	4-1/2	5/8	5/8	3.250	4.500	.688	625-03250
3-1/4	4-1/2	1	5/8	3.250	4.500	1.100	625-03250-1000B
3-11/32	3-15/16	15/32	19/64	3.343	3.937	.517	297-03343-470
3-3/8	3-3/4	3/16	3/16	3.375	3.750	.207	187-03375
3-3/8	3-3/4	3/16	3/16	3.375	3.750	.207	187-03375-187B
3-3/8	3-3/4	1/4	3/16	3.375	3.750	.275	187-03375-250B
3-3/8	3-3/4	3/8	3/16	3.375	3.750	.413	187-03375-375
3-3/8	3-3/4	3/8	3/16	3.375	3.750	.413	187-03375-375B
3-3/8	3-7/8	1/4	1/4	3.375	3.875	.275	250-03375
3-3/8	3-7/8	3/8	1/4	3.375	3.875	.413	250-03375-375
3-3/8	3-7/8	3/8	1/4	3.375	3.875	.413	250-03375-375B
3-3/8	4	5/16	5/16	3.375	4.000	.344	312-03375
3-3/8	4	5/16	5/16	3.375	4.000	.344	312-03375-312B
3-3/8	4	1/2	5/16	3.375	4.000	.550	312-03375-500
3-3/8	4	1/2	5/16	3.375	4.000	.550	312-03375-500B

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
3-3/8	4-1/8	3/8	3/8	3.375	4.125	.413	375-03375
3-3/8	4-1/8	5/8	3/8	3.375	4.125	.688	375-03375-625B
3-3/8	4-1/4	1/2	7/16	3.375	4.250	.550	437-03375-500B
3-3/8	4-3/8	5/8	1/2	3.375	4.375	.688	500-03375-625
3-3/8	4-3/8	5/8	1/2	3.375	4.375	.688	500-03375-625B
3-3/8	4-5/8	5/8	5/8	3.375	4.625	.688	625-03375
3-7/16	3-7/8	7/32	7/32	3.437	3.875	.240	218-03437
3-7/16	4	1/2	9/32	3.437	4.000	.550	281-03437-500B
3-1/2	3-3/4	1/8	1/8	3.500	3.750	.138	125-03500
3-1/2	3-3/4	1/4	1/8	3.500	3.750	.275	125-03500-250
3-1/2	3-7/8	3/16	3/16	3.500	3.875	.207	187-03500
3-1/2	3-7/8	.266	3/16	3.500	3.875	.293	187-03500-266B
3-1/2	3-7/8	9/32	3/16	3.500	3.875	.309	187-03500-281B
3-1/2	3-7/8	3/8	3/16	3.500	3.875	.413	187-03500-375
3-1/2	3-7/8	3/8	3/16	3.500	3.875	.413	187-03500-375B
3-1/2	4	1/4	1/4	3.500	4.000	.275	250-03500
3-1/2	4	3/8	1/4	3.500	4.000	.413	250-03500-375
3-1/2	4	3/8	1/4	3.500	4.000	.413	250-03500-375B
3-1/2	4-1/8	5/16	5/16	3.500	4.125	.344	312-03500
3-1/2	4-1/8	1/2	5/16	3.500	4.125	.550	312-03500-500
3-1/2	4-1/8	1/2	5/16	3.500	4.125	.550	312-03500-500B
3-1/2	4-1/4	3/8	3/8	3.500	4.250	.413	375-03500
3-1/2	4-1/4	5/8	3/8	3.500	4.250	.688	375-03500-625
3-1/2	4-1/4	5/8	3/8	3.500	4.250	.688	375-03500-625B
3-1/2	4-1/2	1/2	1/2	3.500	4.500	.550	500-03500
3-1/2	4-1/2	3/4	1/2	3.500	4.500	.825	500-03500-750
3-1/2	4-1/2	3/4	1/2	3.500	4.500	.825	500-03500-750B
3-1/2	4-3/4	5/8	5/8	3.500	4.750	.688	625-03500
3-1/2	4-3/4	1	5/8	3.500	4.750	1.100	625-03500-1000
3-1/2	5	3/4	3/4	3.500	5.000	.825	750-03500
3-5/8	3-7/8	1/8	1/8	3.625	3.875	.138	125-03625
3-5/8	3-7/8	3/16	1/8	3.625	3.875	.207	125-03625-187B
3-5/8	4	3/16	3/16	3.625	4.000	.207	187-03625
3-5/8	4	3/8	3/16	3.625	4.000	.413	187-03625-375
3-5/8	4	3/8	3/16	3.625	4.000	.413	187-03625-375B
3-5/8	4-1/8	1/4	1/4	3.625	4.125	.275	250-03625
3-5/8	4-1/8	3/8	1/4	3.625	4.125	.413	250-03625-375
3-5/8	4-1/8	3/8	1/4	3.625	4.125	.413	250-03625-375B
3-5/8	4-1/4	5/16	5/16	3.625	4.250	.344	312-03625
3-5/8	4-1/4	1/2	5/16	3.625	4.250	.550	312-03625-500B
3-5/8	4-3/8	3/8	3/8	3.625	4.375	.413	375-03625
3-5/8	4-3/8	5/8	3/8	3.625	4.375	.688	375-03625-625B
3-5/8	4-1/2	7/16	7/16	3.625	4.500	.481	437-03625
3-5/8	4-5/8	1/2	1/2	3.625	4.625	.550	500-03625
3-11/16	4-1/4	3/8	9/32	3.687	4.250	.413	281-03687-375

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
3-3/4	4-1/8	3/16	3/16	3.750	4.125	.207	187-03750
3-3/4	4-1/8	3/8	3/16	3.750	4.125	.413	187-03750-375
3-3/4	4-1/8	3/8	3/16	3.750	4.125	.413	187-03750-375B
3-3/4	4-1/4	1/4	1/4	3.750	4.250	.275	250-03750
3-3/4	4-1/4	3/8	1/4	3.750	4.250	.413	250-03750-375
3-3/4	4-1/4	3/8	1/4	3.750	4.250	.413	250-03750-375B
3-3/4	4-1/4	9/16	1/4	3.750	4.250	.619	250-03750-562B
3-3/4	4-3/8	5/16	5/16	3.750	4.375	.344	312-03750
3-3/4	4-3/8	3/8	5/16	3.750	4.375	.413	312-03750-375B
3-3/4	4-3/8	1/2	5/16	3.750	4.375	.550	312-03750-500B
3-3/4	4-3/8	5/8	5/16	3.750	4.375	.688	312-03750-625B
3-3/4	4-1/2	3/8	3/8	3.750	4.500	.413	375-03750
3-3/4	4-1/2	5/8	3/8	3.750	4.500	.688	375-03750-625
3-3/4	4-1/2	5/8	3/8	3.750	4.500	.688	375-03750-625B
3-3/4	4-3/4	1/2	1/2	3.750	4.750	.550	500-03750
3-3/4	4-3/4	11/16	1/2	3.750	4.750	.756	500-03750-687
3-3/4	4-3/4	.690	1/2	3.750	4.750	.759	500-03750-690B
3-3/4	5	5/8	5/8	3.750	5.000	.688	625-03750
3-3/4	5	1	5/8	3.750	5.000	1.100	625-03750-1000B
3-3/4	5-1/4	3/4	3/4	3.750	5.250	.825	750-03750
3-27/32	4-19/32	3/8	3/8	3.843	4.593	.413	375-03843
3.850	4.350	1/4	1/4	3.850	4.350	.275	250-03850
3-7/8	4-1/4	3/16	3/16	3.875	4.250	.207	187-03875
3-7/8	4-1/4	3/8	3/16	3.875	4.250	.413	187-03875-375B
3-7/8	4-3/8	1/4	1/4	3.875	4.375	.275	250-03875
3-7/8	4-3/8	3/8	1/4	3.875	4.375	.413	250-03875-375
3-7/8	4-7/16	1/2	9/32	3.875	4.437	.550	281-03875-500
3-7/8	4-1/2	5/16	5/16	3.875	4.500	.344	312-03875
3-7/8	4-1/2	1/2	5/16	3.875	4.500	.550	312-03875-500
3-7/8	4-5/8	3/8	3/8	3.875	4.625	.413	375-03875
3-7/8	4-5/8	5/8	3/8	3.875	4.625	.688	375-03875-625B
3-7/8	4-3/4	1/2	7/16	3.875	4.750	.550	437-03875-500B
3-7/8	4-3/4	3/4	7/16	3.875	4.750	.825	437-03875-750B
3-7/8	4-7/8	3/4	1/2	3.875	4.875	.825	500-03875-750B
3-7/8	5-1/8	5/8	5/8	3.875	5.125	.688	625-03875
3-15/16	4-1/2	1/2	9/32	3.937	4.500	.550	281-03937-500B
4	4-1/4	1/8	1/8	4.000	4.250	.138	125-04000
4	4-3/8	3/16	3/16	4.000	4.375	.207	187-04000
4	4-3/8	3/16	3/16	4.000	4.375	.207	187-04000-187B
4	4-3/8	3/8	3/16	4.000	4.375	.413	187-04000-375
4	4-3/8	3/8	3/16	4.000	4.375	.413	187-04000-375B
4	4-1/2	1/4	1/4	4.000	4.500	.275	250-04000
4	4-1/2	3/8	1/4	4.000	4.500	.413	250-04000-375
4	4-1/2	3/8	1/4	4.000	4.500	.413	250-04000-375B
4	4-1/2	9/16	1/4	4.000	4.500	.619	250-04000-562

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
4	4-1/2	9/16	1/4	4.000	4.500	.619	250-04000-562B
4	4-5/8	5/16	5/16	4.000	4.625	.344	312-04000
4	4-5/8	1/2	5/16	4.000	4.625	.550	312-04000-500
4	4-5/8	9/16	5/16	4.000	4.625	.619	312-04000-562
4	4-5/8	9/16	5/16	4.000	4.625	.619	312-04000-562B
4	4-3/4	3/8	3/8	4.000	4.750	.413	375-04000
4	4-3/4	5/8	3/8	4.000	4.750	.688	375-04000-625
4	4-3/4	5/8	3/8	4.000	4.750	.688	375-04000-625B
4	4-7/8	7/16	7/16	4.000	4.875	.481	437-04000
4	4-7/8	5/8	7/16	4.000	4.875	.688	437-04000-625
4	4-7/8	5/8	7/16	4.000	4.875	.688	437-04000-625B
4	5	1/2	1/2	4.000	5.000	.550	500-04000
4	5	3/4	1/2	4.000	5.000	.825	500-04000-750
4	5	3/4	1/2	4.000	5.000	.825	500-04000-750B
4	5-1/4	5/8	5/8	4.000	5.250	.688	625-04000
4	5-1/2	3/4	3/4	4.000	5.500	.825	750-04000
4	6	1	1	4.000	6.000	1.100	1000-04000
4-1/16	4-9/16	3/8	1/4	4.062	4.562	.413	250-04062-375B
4-1/16	4-13/16	3/8	3/8	4.062	4.812	.413	375-04062
4-1/8	4-1/2	3/16	3/16	4.125	4.500	.207	187-04125
4-1/8	4-1/2	3/8	3/16	4.125	4.500	.413	187-04125-375
4-1/8	4-1/2	3/8	3/16	4.125	4.500	.413	187-04125-375B
4-1/8	4-5/8	1/4	1/4	4.125	4.625	.275	250-04125
4-1/8	4-5/8	9/16	1/4	4.125	4.625	.619	250-04125-562B
4-1/8	4-3/4	5/16	5/16	4.125	4.750	.344	312-04125
4-1/8	4-3/4	9/16	5/16	4.125	4.750	.619	312-04125-562
4-1/8	4-3/4	9/16	5/16	4.125	4.750	.619	312-04125-562B
4-1/8	4-7/8	3/8	3/8	4.125	4.875	.413	375-04125
4-1/8	4-7/8	5/8	3/8	4.125	4.875	.688	375-04125-625B
4-1/8	5-1/8	1/2	1/2	4.125	5.125	.550	500-04125
4-1/8	5-1/4	9/16	9/16	4.125	5.250	.619	562-04125
4-1/4	4-1/2	1/8	1/8	4.250	4.500	.138	125-04250
4-1/4	4-5/8	3/16	3/16	4.250	4.625	.207	187-04250
4-1/4	4-5/8	9/32	3/16	4.250	4.625	.309	187-04250-281B
4-1/4	4-5/8	3/8	3/16	4.250	4.625	.413	187-04250-375
4-1/4	4-5/8	3/8	3/16	4.250	4.625	.413	187-04250-375B
4-1/4	4-3/4	1/4	1/4	4.250	4.750	.275	250-04250
4-1/4	4-3/4	3/8	1/4	4.250	4.750	.413	250-04250-375B
4-1/4	4-3/4	9/16	1/4	4.250	4.750	.619	250-04250-562
4-1/4	4-3/4	9/16	1/4	4.250	4.750	.619	250-04250-562B
4-1/4	4-7/8	5/16	5/16	4.250	4.875	.344	312-04250
4-1/4	4-7/8	9/16	5/16	4.250	4.875	.619	312-04250-562
4-1/4	4-7/8	9/16	5/16	4.250	4.875	.619	312-04250-562B
4-1/4	5	3/8	3/8	4.250	5.000	.413	375-04250
4-1/4	5	3/8	3/8	4.250	5.000	.413	375-04250-375B

SPEC SEAL Seals & O-rings Specialist

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
4-1/4	5	1/2	3/8	4.250	5.000	.550	375-04250-500
4-1/4	5	5/8	3/8	4.250	5.000	.688	375-04250-625
4-1/4	5	5/8	3/8	4.250	5.000	.688	375-04250-625B
4-1/4	5-1/4	1/2	1/2	4.250	5.250	.550	500-04250
4-1/4	5-1/4	3/4	1/2	4.250	5.250	.825	500-04250-750B
4-1/4	5-1/2	5/8	5/8	4.250	5.500	.688	625-04250
4-1/4	5-1/2	1	5/8	4.250	5.500	1.100	625-04250-1000B
4-1/4	5-3/4	3/4	3/4	4.250	5.750	.825	750-04250
4-1/4	6-1/4	1	1	4.250	6.250	1.100	1000-04250
4-5/16	5-5/16	1/2	1/2	4.312	5.312	.550	500-04312
4-3/8	4-5/8	1/8	1/8	4.375	4.625	.138	125-04375
4-3/8	4-3/4	3/16	3/16	4.375	4.750	.207	187-04375
4-3/8	4-3/4	3/8	3/16	4.375	4.750	.413	187-04375-375
4-3/8	4-3/4	3/8	3/16	4.375	4.750	.413	187-04375-375B
4-3/8	4-7/8	1/4	1/4	4.375	4.875	.275	250-04375
4-3/8	4-7/8	9/16	1/4	4.375	4.875	.619	250-04375-562
4-3/8	5	5/16	5/16	4.375	5.000	.344	312-04375
4-3/8	5	1/2	5/16	4.375	5.000	.550	312-04375-500
4-3/8	5	9/16	5/16	4.375	5.000	.619	312-04375-562
4-3/8	5	9/16	5/16	4.375	5.000	.619	312-04375-562B
4-3/8	5-1/8	3/8	3/8	4.375	5.125	.413	375-04375
4-3/8	5-1/8	5/8	3/8	4.375	5.125	.688	375-04375-625
4-3/8	5-1/8	5/8	3/8	4.375	5.125	.688	375-04375-625B
4-3/8	5-3/8	1/2	1/2	4.375	5.375	.550	500-04375
4-3/8	5-3/8	5/8	1/2	4.375	5.375	.688	500-04375-625B
4-3/8	5-3/8	3/4	1/2	4.375	5.375	.825	500-04375-750
4-3/8	5-3/8	3/4	1/2	4.375	5.375	.825	500-04375-750B
4-7/16	4-15/16	3/8	1/4	4.437	4.937	.413	250-04437-375B
4-7/16	5	9/32	9/32	4.437	5.000	.309	281-04437
4-7/16	5	1/2	9/32	4.437	5.000	.550	281-04437-500B
4-1/2	4-3/4	1/8	1/8	4.500	4.750	.138	125-04500
4-1/2	4-3/4	3/16	1/8	4.500	4.750	.207	125-04500-187B
4-1/2	4-7/8	3/16	3/16	4.500	4.875	.207	187-04500
4-1/2	4-7/8	3/16	3/16	4.500	4.875	.207	187-04500-187B
4-1/2	4-7/8	3/8	3/16	4.500	4.875	.413	187-04500-375
4-1/2	4-7/8	3/8	3/16	4.500	4.875	.413	187-04500-375B
4-1/2	5	1/4	1/4	4.500	5.000	.275	250-04500
4-1/2	5	1/4	1/4	4.500	5.000	.275	250-04500-250B
4-1/2	5	3/8	1/4	4.500	5.000	.413	250-04500-375
4-1/2	5	3/8	1/4	4.500	5.000	.413	250-04500-375B
4-1/2	5	1/2	1/4	4.500	5.000	.550	250-04500-500B
4-1/2	5	9/16	1/4	4.500	5.000	.619	250-04500-562
4-1/2	5	9/16	1/4	4.500	5.000	.619	250-04500-562B
4-1/2	5-1/8	5/16	5/16	4.500	5.125	.344	312-04500
4-1/2	5-1/8	9/16	5/16	4.500	5.125	.619	312-04500-562B

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
4-1/2	5-1/8	5/8	5/16	4.500	5.125	.688	312-04500-625B
4-1/2	5-1/4	3/8	3/8	4.500	5.250	.413	375-04500
4-1/2	5-1/4	5/8	3/8	4.500	5.250	.688	375-04500-625
4-1/2	5-1/4	5/8	3/8	4.500	5.250	.688	375-04500-625B
4-1/2	5-3/8	7/16	7/16	4.500	5.375	.481	437-04500
4-1/2	5-3/8	3/4	7/16	4.500	5.375	.825	437-04500-750B
4-1/2	5-1/2	1/2	1/2	4.500	5.500	.550	500-04500
4-1/2	5-1/2	3/4	1/2	4.500	5.500	.825	500-04500-750
4-1/2	5-1/2	3/4	1/2	4.500	5.500	.825	500-04500-750B
4-1/2	5-3/4	5/8	5/8	4.500	5.750	.688	625-04500
4-1/2	6	3/4	3/4	4.500	6.000	.825	750-04500
4-5/8	5	3/16	3/16	4.625	5.000	.207	187-04625
4-5/8	5	3/8	3/16	4.625	5.000	.413	187-04625-375
4-5/8	5-1/8	1/4	1/4	4.625	5.125	.275	250-04625
4-5/8	5-1/8	1/4	1/4	4.625	5.125	.275	250-04625-250B
4-5/8	5-1/8	9/16	1/4	4.625	5.125	.619	250-04625-562B
4-5/8	5-1/4	5/8	5/16	4.625	5.250	.688	312-04625-625
4-5/8	5-1/4	5/8	5/16	4.625	5.250	.688	312-04625-625B
4-5/8	5-3/8	3/8	3/8	4.625	5.375	.413	375-04625
4-5/8	5-3/8	5/8	3/8	4.625	5.375	.688	375-04625-625
4-5/8	5-3/8	5/8	3/8	4.625	5.375	.688	375-04625-625B
4-5/8	5-7/8	5/8	5/8	4.625	5.875	.688	625-04625
4-11/16	5-1/4	5/8	9/32	4.687	5.250	.688	281-04687-625B
4-3/4	5	1/8	1/8	4.750	5.000	.138	125-04750
4-3/4	5-1/8	3/16	3/16	4.750	5.125	.207	187-04750
4-3/4	5-1/4	1/4	1/4	4.750	5.250	.275	250-04750
4-3/4	5-1/4	3/8	1/4	4.750	5.250	.413	250-04750-375B
4-3/4	5-1/4	9/16	1/4	4.750	5.250	.619	250-04750-562
4-3/4	5-1/4	9/16	1/4	4.750	5.250	.619	250-04750-562B
4-3/4	5-3/8	5/16	5/16	4.750	5.375	.344	312-04750
4-3/4	5-3/8	5/8	5/16	4.750	5.375	.688	312-04750-625B
4-3/4	5-1/2	3/8	3/8	4.750	5.500	.413	375-04750
4-3/4	5-1/2	1/2	3/8	4.750	5.500	.550	375-04750-500
4-3/4	5-1/2	5/8	3/8	4.750	5.500	.688	375-04750-625
4-3/4	5-1/2	5/8	3/8	4.750	5.500	.688	375-04750-625B
4-3/4	5-5/8	7/16	7/16	4.750	5.625	.481	437-04750
4-3/4	5-5/8	5/8	7/16	4.750	5.625	.688	437-04750-625
4-3/4	5-5/8	3/4	7/16	4.750	5.625	.825	437-04750-750B
4-3/4	5-3/4	1/2	1/2	4.750	5.750	.550	500-04750
4-3/4	5-3/4	11/16	1/2	4.750	5.750	.756	500-04750-687
4-3/4	5-3/4	3/4	1/2	4.750	5.750	.825	500-04750-750B
4-3/4	6	5/8	5/8	4.750	6.000	.688	625-04750
4-3/4	6	1	5/8	4.750	6.000	1.100	625-04750-1000
4-3/4	6-1/4	1-1/4	3/4	4.750	6.250	1.375	750-04750-1250
4-7/8	5-1/4	9/16	3/16	4.875	5.250	.619	187-04875-562

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
4-7/8	5-3/8	1/4	1/4	4.875	5.375	.275	250-04875
4-7/8	5-3/8	3/8	1/4	4.875	5.375	.413	250-04875-375B
4-7/8	5-3/8	9/16	1/4	4.875	5.375	.619	250-04875-562
4-7/8	5-3/8	9/16	1/4	4.875	5.375	.619	250-04875-562B
4-7/8	5-1/2	5/16	5/16	4.875	5.500	.344	312-04875
4-7/8	5-5/8	3/8	3/8	4.875	5.625	.413	375-04875
4-7/8	5-5/8	5/8	3/8	4.875	5.625	.688	375-04875-625B
4-7/8	5-3/4	9/16	7/16	4.875	5.750	.619	437-04875-562B
4-7/8	5-7/8	9/16	1/2	4.875	5.875	.619	500-04875-562
4-15/16	5-1/2	11/32	9/32	4.937	5.500	.378	281-04937-343B
4-15/16	5-1/2	1/2	9/32	4.937	5.500	.550	281-04937-500B
5	5-1/4	1/8	1/8	5.000	5.250	.138	125-05000
5	5-3/8	9/32	3/16	5.000	5.375	.309	187-05000-281B
5	5-3/8	3/8	3/16	5.000	5.375	.413	187-05000-375
5	5-1/2	1/4	1/4	5.000	5.500	.275	250-05000
5	5-1/2	3/8	1/4	5.000	5.500	.413	250-05000-375
5	5-1/2	3/8	1/4	5.000	5.500	.413	250-05000-375B
5	5-1/2	9/16	1/4	5.000	5.500	.619	250-05000-562
5	5-1/2	9/16	1/4	5.000	5.500	.619	250-05000-562B
5	5-9/16	9/32	9/32	5.000	5.562	.309	281-05000
5	5-5/8	5/16	5/16	5.000	5.625	.344	312-05000
5	5-5/8	5/8	5/16	5.000	5.625	.688	312-05000-625B
5	5-3/4	3/8	3/8	5.000	5.750	.413	375-05000
5	5-3/4	1/2	3/8	5.000	5.750	.550	375-05000-500B
5	5-3/4	5/8	3/8	5.000	5.750	.688	375-05000-625
5	5-3/4	5/8	3/8	5.000	5.750	.688	375-05000-625B
5	5-7/8	3/4	7/16	5.000	5.875	.825	437-05000-750B
5	6	1/2	1/2	5.000	6.000	.550	500-05000
5	6	3/4	1/2	5.000	6.000	.825	500-05000-750
5	6	3/4	1/2	5.000	6.000	.825	500-05000-750B
5	6-1/4	5/8	5/8	5.000	6.250	.688	625-05000
5	6-1/4	1	5/8	5.000	6.250	1.100	625-05000-1000B
5	6-1/2	3/4	3/4	5.000	6.500	.825	750-05000
5	6-3/4	1	7/8	5.000	6.750	1.100	875-05000-1000
5	7	1-1/2	1	5.000	7.000	1.650	1000-05000-1500
5-1/8	5-5/8	1/4	1/4	5.125	5.625	.275	250-05125
5-1/8	5-3/4	5/16	5/16	5.125	5.750	.344	312-05125
5-1/8	5-3/4	5/8	5/16	5.125	5.750	.688	312-05125-625
5-1/8	5-3/4	5/8	5/16	5.125	5.750	.688	312-05125-625B
5-1/8	5-7/8	3/8	3/8	5.125	5.875	.413	375-05125
5-1/8	5-7/8	5/8	3/8	5.125	5.875	.688	375-05125-625B
5-1/8	6	7/16	7/16	5.125	6.000	.481	437-05125
5-1/8	6	1/2	7/16	5.125	6.000	.550	437-05125-500
5-1/8	6-1/8	1/2	1/2	5.125	6.125	.550	500-05125
5-1/8	6-1/8	3/4	1/2	5.125	6.125	.825	500-05125-750

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
5-1/4	5-5/8	3/16	3/16	5.250	5.625	.207	187-05250
5-1/4	5-3/4	1/4	1/4	5.250	5.750	.275	250-05250
5-1/4	5-3/4	3/8	1/4	5.250	5.750	.413	250-05250-375
5-1/4	5-3/4	3/8	1/4	5.250	5.750	.413	250-05250-375B
5-1/4	5-3/4	9/16	1/4	5.250	5.750	.619	250-05250-562
5-1/4	5-3/4	9/16	1/4	5.250	5.750	.619	250-05250-562B
5-1/4	5-7/8	5/16	5/16	5.250	5.875	.344	312-05250
5-1/4	5-7/8	5/8	5/16	5.250	5.875	.688	312-05250-625
5-1/4	5-7/8	5/8	5/16	5.250	5.875	.688	312-05250-625B
5-1/4	6	3/8	3/8	5.250	6.000	.413	375-05250
5-1/4	6	3/8	3/8	5.250	6.000	.413	375-05250-375B
5-1/4	6	1/2	3/8	5.250	6.000	.550	375-05250-500
5-1/4	6	1/2	3/8	5.250	6.000	.550	375-05250-500B
5-1/4	6	5/8	3/8	5.250	6.000	.688	375-05250-625
5-1/4	6	5/8	3/8	5.250	6.000	.688	375-05250-625B
5-1/4	6-1/4	1/2	1/2	5.250	6.250	.550	500-05250
5-1/4	6-1/4	1/2	1/2	5.250	6.250	.550	500-05250-500B
5-1/4	6-1/4	3/4	1/2	5.250	6.250	.825	500-05250-750B
5-1/4	6-1/2	1	5/8	5.250	6.500	1.100	625-05250-1000B
5-3/8	5-7/8	1/4	1/4	5.375	5.875	.275	250-05375
5-3/8	5-7/8	3/8	1/4	5.375	5.875	.413	250-05375-375
5-3/8	5-7/8	9/16	1/4	5.375	5.875	.619	250-05375-562B
5-3/8	6	5/16	5/16	5.375	6.000	.344	312-05375
5-3/8	6	5/8	5/16	5.375	6.000	.688	312-05375-625
5-3/8	6-1/8	3/8	3/8	5.375	6.125	.413	375-05375
5-3/8	6-1/8	5/8	3/8	5.375	6.125	.688	375-05375-625B
5-3/8	6-3/8	1/2	1/2	5.375	6.375	.550	500-05375
5-7/16	5-15/16	3/8	1/4	5.437	5.937	.413	250-05437-375B
5-7/16	6	9/32	9/32	5.437	6.000	.309	281-05437
5-7/16	6-7/16	1/2	1/2	5.437	6.437	.550	500-05437
5-1/2	5-7/8	3/8	3/16	5.500	5.875	.413	187-05500-375B
5-1/2	6	1/4	1/4	5.500	6.000	.275	250-05500
5-1/2	6	3/8	1/4	5.500	6.000	.413	250-05500-375
5-1/2	6	3/8	1/4	5.500	6.000	.413	250-05500-375B
5-1/2	6	9/16	1/4	5.500	6.000	.619	250-05500-562
5-1/2	6	9/16	1/4	5.500	6.000	.619	250-05500-562B
5-1/2	6-1/8	5/16	5/16	5.500	6.125	.344	312-05500
5-1/2	6-1/8	5/8	5/16	5.500	6.125	.688	312-05500-625
5-1/2	6-1/8	5/8	5/16	5.500	6.125	.688	312-05500-625B
5-1/2	6-1/4	3/8	3/8	5.500	6.250	.413	375-05500
5-1/2	6-1/4	5/8	3/8	5.500	6.250	.688	375-05500-625
5-1/2	6-1/4	5/8	3/8	5.500	6.250	.688	375-05500-625B
5-1/2	6-3/8	7/16	7/16	5.500	6.375	.481	437-05500
5-1/2	6-1/2	1/2	1/2	5.500	6.500	.550	500-05500
5-1/2	6-1/2	3/4	1/2	5.500	6.500	.825	500-05500-750

SPEC SEAL Seals & O-rings Specialist

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
5-1/2	6-1/2	3/4	1/2	5.500	6.500	.825	500-05500-750B
5-1/2	6-5/8	9/16	9/16	5.500	6.625	.619	562-05500
5-1/2	6-3/4	5/8	5/8	5.500	6.750	.688	625-05500
5-1/2	6-3/4	1	5/8	5.500	6.750	1.100	625-05500-1000
5-1/2	6-3/4	1	5/8	5.500	6.750	1.100	625-05500-1000B
5-1/2	7	3/4	3/4	5.500	7.000	.825	750-05500
5-1/2	7	1-1/4	3/4	5.500	7.000	1.375	750-05500-1250
5-5/8	6-1/8	1/4	1/4	5.625	6.125	.275	250-05625
5-5/8	6-1/8	9/16	1/4	5.625	6.125	.619	250-05625-562B
5-5/8	6-1/4	5/8	5/16	5.625	6.250	.688	312-05625-625B
5-5/8	6-3/8	3/8	3/8	5.625	6.375	.413	375-05625
5-5/8	6-3/8	5/8	3/8	5.625	6.375	.688	375-05625-625
5-5/8	6-3/8	5/8	3/8	5.625	6.375	.688	375-05625-625B
5-11/16	6-1/16	3/16	3/16	5.687	6.062	.207	187-05687
5-3/4	6	1/8	1/8	5.750	6.000	.138	125-05750
5-3/4	6-1/4	1/4	1/4	5.750	6.250	.275	250-05750
5-3/4	6-1/4	9/16	1/4	5.750	6.250	.619	250-05750-562
5-3/4	6-1/4	9/16	1/4	5.750	6.250	.619	250-05750-562B
5-3/4	6-3/8	5/8	5/16	5.750	6.375	.688	312-05750-625B
5-3/4	6-1/2	3/8	3/8	5.750	6.500	.413	375-05750
5-3/4	6-1/2	1/2	3/8	5.750	6.500	.550	375-05750-500
5-3/4	6-1/2	5/8	3/8	5.750	6.500	.688	375-05750-625
5-3/4	6-1/2	5/8	3/8	5.750	6.500	.688	375-05750-625B
5-3/4	6-3/4	1/2	1/2	5.750	6.750	.550	500-05750
5-3/4	6-3/4	3/4	1/2	5.750	6.750	.825	500-05750-750B
5-3/4	7	5/8	5/8	5.750	7.000	.688	625-05750
5-7/8	6-1/4	3/16	3/16	5.875	6.250	.207	187-05875
5-7/8	6-3/8	1/4	1/4	5.875	6.375	.275	250-05875
5-7/8	6-3/8	9/16	1/4	5.875	6.375	.619	250-05875-562
5-7/8	6-1/2	5/16	5/16	5.875	6.500	.344	312-05875
5-7/8	6-5/8	3/8	3/8	5.875	6.625	.413	375-05875
5-7/8	6-5/8	5/8	3/8	5.875	6.625	.688	375-05875-625B
5-15/16	6-1/2	1/2	9/32	5.937	6.500	.550	281-05937-500B
6	6-3/8	3/16	3/16	6.000	6.375	.207	187-06000
6	6-3/8	3/8	3/16	6.000	6.375	.413	187-06000-375
6	6-1/2	1/4	1/4	6.000	6.500	.275	250-06000
6	6-1/2	3/8	1/4	6.000	6.500	.413	250-06000-375B
6	6-1/2	7/16	1/4	6.000	6.500	.481	250-06000-437B
6	6-1/2	9/16	1/4	6.000	6.500	.619	250-06000-562
6	6-1/2	9/16	1/4	6.000	6.500	.619	250-06000-562B
6	6-5/8	5/16	5/16	6.000	6.625	.344	312-06000
6	6-5/8	5/8	5/16	6.000	6.625	.688	312-06000-625B
6	6-3/4	3/8	3/8	6.000	6.750	.413	375-06000
6	6-3/4	1/2	3/8	6.000	6.750	.550	375-06000-500B
6	6-3/4	5/8	5/16	6.000	6.750	.688	375-06000-625

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
6	6-3/4	5/8	3/8	6.000	6.750	.688	375-06000-625B
6	7	1/2	1/2	6.000	7.000	.550	500-06000
6	7	3/4	1/2	6.000	7.000	.825	500-06000-750
6	7	3/4	1/2	6.000	7.000	.825	500-06000-750B
6	7-1/4	5/8	5/8	6.000	7.250	.688	625-06000
6	7-1/4	1	5/8	6.000	7.250	1.100	625-06000-1000B
6	7-1/2	3/4	3/4	6.000	7.500	.825	750-06000
6	8	1	1	6.000	8.000	1.100	1000-06000
6-1/8	6-3/4	5/16	5/16	6.125	6.750	.344	312-06125
6-1/4	6-3/4	1/4	1/4	6.250	6.750	.275	250-06250
6-1/4	6-3/4	9/16	1/4	6.250	6.750	.619	250-06250-562
6-1/4	6-3/4	9/16	1/4	6.250	6.750	.619	250-06250-562B
6-1/4	6-7/8	5/16	5/16	6.250	6.875	.344	312-06250
6-1/4	7	3/8	3/8	6.250	7.000	.413	375-06250
6-1/4	7	1/2	3/8	6.250	7.000	.550	375-06250-500
6-1/4	7	1/2	3/8	6.250	7.000	.550	375-06250-500B
6-1/4	7	5/8	3/8	6.250	7.000	.688	375-06250-625
6-1/4	7	5/8	3/8	6.250	7.000	.688	375-06250-625B
6-1/4	7-1/4	1/2	1/2	6.250	7.250	.550	500-06250
6-1/4	7-1/4	3/4	1/2	6.250	7.250	.825	500-06250-750B
6-1/4	7-1/2	5/8	5/8	6.250	7.500	.688	625-06250
6-1/4	7-3/4	1-1/4	3/4	6.250	7.750	1.375	750-06250-1250
6-5/16	6-11/16	3/16	3/16	6.312	6.687	.207	187-06312
6-3/8	7	5/16	5/16	6.375	7.000	.344	312-06375
6-3/8	7	5/8	5/16	6.375	7.000	.688	312-06375-625
6-3/8	7	5/8	5/16	6.375	7.000	.688	312-06375-625B
6-3/8	7-3/8	1/2	1/2	6.375	7.375	.550	500-06375
6-7/16	7	9/32	9/32	6.437	7.000	.309	281-06437
6-1/2	7	1/4	1/4	6.500	7.000	.275	250-06500
6-1/2	7	3/8	1/4	6.500	7.000	.413	250-06500-375
6-1/2	7	3/8	1/4	6.500	7.000	.413	250-06500-375B
6-1/2	7	9/16	1/4	6.500	7.000	.619	250-06500-562
6-1/2	7	9/16	1/4	6.500	7.000	.619	250-06500-562B
6-1/2	7-1/8	5/16	5/16	6.500	7.125	.344	312-06500
6-1/2	7-1/8	5/8	5/16	6.500	7.125	.688	312-06500-625
6-1/2	7-1/8	5/8	5/16	6.500	7.125	.688	312-06500-625B
6-1/2	7-1/4	3/8	3/8	6.500	7.250	.413	375-06500
6-1/2	7-1/4	1/2	3/8	6.500	7.250	.550	375-06500-500
6-1/2	7-1/4	1/2	3/8	6.500	7.250	.550	375-06500-500B
6-1/2	7-1/4	5/8	3/8	6.500	7.250	.688	375-06500-625
6-1/2	7-1/4	5/8	3/8	6.500	7.250	.688	375-06500-625B
6-1/2	7-1/2	1/2	1/2	6.500	7.500	.550	500-06500
6-1/2	7-1/2	3/4	1/2	6.500	7.500	.825	500-06500-750
6-1/2	7-1/2	3/4	1/2	6.500	7.500	.825	500-06500-750B
6-1/2	7-3/4	5/8	5/8	6.500	7.750	.688	625-06500

SPEC SEAL Seals & O-rings Specialist

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
6-1/2	7-3/4	1	5/8	6.500	7.750	1.100	625-06500-1000
6-1/2	8	3/4	3/4	6.500	8.000	.825	750-06500
6-1/2	8	1-1/4	3/4	6.500	8.000	1.375	750-06500-1250
6-5/8	7-1/8	3/8	1/4	6.625	7.125	.413	250-06625-375
6-5/8	7-1/4	5/16	5/16	6.625	7.250	.344	312-06625
6-5/8	7-1/4	5/8	5/16	6.625	7.250	.688	312-06625-625B
6-5/8	7-7/8	5/8	5/8	6.625	7.875	.688	625-06625
6-3/4	7-1/4	1/4	1/4	6.750	7.250	.275	250-06750
6-3/4	7-1/4	3/8	1/4	6.750	7.250	.413	250-06750-375B
6-3/4	7-1/4	9/16	1/4	6.750	7.250	.619	250-06750-562
6-3/4	7-1/4	9/16	1/4	6.750	7.250	.619	250-06750-562B
6-3/4	7-3/8	5/16	5/16	6.750	7.375	.344	312-06750
6-3/4	7-3/8	5/8	5/16	6.750	7.375	.688	312-06750-625B
6-3/4	7-1/2	3/8	3/8	6.750	7.500	.413	375-06750
6-3/4	7-1/2	3/8	3/8	6.750	7.500	.413	375-06750-375B
6-3/4	7-1/2	1/2	3/8	6.750	7.500	.550	375-06750-500B
6-3/4	7-1/2	9/16	3/8	6.750	7.500	.619	375-06750-562
6-3/4	7-1/2	5/8	3/8	6.750	7.500	.688	375-06750-625B
6-3/4	7-5/8	3/4	7/16	6.750	7.625	.825	437-06750-750
6-3/4	7-3/4	1/2	1/2	6.750	7.750	.550	500-06750
6-3/4	7-3/4	3/4	1/2	6.750	7.750	.825	500-06750-750B
6-3/4	7-7/8	9/16	9/16	6.750	7.875	.619	562-06750
6-3/4	8	5/8	5/8	6.750	8.000	.688	625-06750
6-3/4	8	1	5/8	6.750	8.000	1.100	625-06750-1000
6-3/4	8	1	5/8	6.750	8.000	1.100	625-06750-1000B
6-13/16	8-1/16	5/8	5/8	6.812	8.062	.688	625-06812
6-7/8	7-5/8	5/8	3/8	6.875	7.625	.688	375-06875-625B
6-7/8	8-1/8	5/8	5/8	6.875	8.125	.688	625-06875
6-15/16	7-1/2	1/2	9/32	6.937	7.500	.550	281-06937-500B
7	7-3/8	3/8	3/16	7.000	7.375	.413	187-07000-375B
7	7-1/2	1/4	1/4	7.000	7.500	.275	250-07000
7	7-1/2	3/8	1/4	7.000	7.500	.413	250-07000-375
7	7-1/2	3/8	1/4	7.000	7.500	.413	250-07000-375B
7	7-1/2	9/16	1/4	7.000	7.500	.619	250-07000-562
7	7-1/2	9/16	1/4	7.000	7.500	.619	250-07000-562B
7	7-5/8	5/16	5/16	7.000	7.625	.344	312-07000
7	7-5/8	5/8	5/16	7.000	7.625	.688	312-07000-625B
7	7-3/4	3/8	3/8	7.000	7.750	.413	375-07000
7	7-3/4	1/2	3/8	7.000	7.750	.550	375-07000-500B
7	7-3/4	5/8	3/8	7.000	7.750	.688	375-07000-625
7	7-3/4	5/8	3/8	7.000	7.750	.688	375-07000-625B
7	8	1/2	1/2	7.000	8.000	.550	500-07000
7	8	3/4	1/2	7.000	8.000	.825	500-07000-750
7	8	3/4	1/2	7.000	8.000	.825	500-07000-750B
7	8-1/4	5/8	5/8	7.000	8.250	.688	625-07000

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
7	8-1/4	1	5/8	7.000	8.250	1.100	625-07000-1000B
7	8-1/2	3/4	3/4	7.000	8.500	.825	750-07000
7	8-1/2	1-1/4	3/4	7.000	8.500	1.375	750-07000-1250
7	9	1	1	7.000	9.000	1.100	1000-07000
7-1/8	7-5/8	1/4	1/4	7.125	7.625	.275	250-07125
7-1/8	8-3/8	1	5/8	7.125	8.375	1.100	625-07125-1000
7-3/16	8	13/32	13/32	7.187	8.000	.447	406-07187
7-1/4	7-3/4	1/4	1/4	7.250	7.750	.275	250-07250
7-1/4	7-3/4	9/16	1/4	7.250	7.750	.619	250-07250-562B
7-1/4	7-7/8	5/16	5/16	7.250	7.875	.344	312-07250
7-1/4	7-7/8	5/8	5/16	7.250	7.875	.688	312-07250-625B
7-1/4	8	3/8	3/8	7.250	8.000	.413	375-07250
7-1/4	8	5/8	3/8	7.250	8.000	.688	375-07250-625
7-1/4	8	5/8	3/8	7.250	8.000	.688	375-07250-625B
7-1/4	8-1/4	1/2	1/2	7.250	8.250	.550	500-07250
7-1/4	8-1/4	3/4	1/2	7.250	8.250	.825	500-07250-750B
7-1/4	8-1/2	1	5/8	7.250	8.500	1.100	625-07250-1000B
7-5/16	7-15/16	5/16	5/16	7.312	7.937	.344	312-07312
7-3/8	8	5/16	5/16	7.375	8.000	.344	312-07375
7-3/8	8-1/8	1/2	3/8	7.375	8.125	.550	375-07375-500B
7-7/16	7-15/16	1/4	1/4	7.437	7.937	.275	250-07437
7-7/16	7-15/16	9/16	1/4	7.437	7.937	.619	250-07437-562
7-1/2	7-7/8	1/4	3/16	7.500	7.875	.275	187-07500-250
7-1/2	8	1/4	1/4	7.500	8.000	.275	250-07500
7-1/2	8	9/16	1/4	7.500	8.000	.619	250-07500-562
7-1/2	8	9/16	1/4	7.500	8.000	.619	250-07500-562B
7-1/2	8-1/8	5/16	5/16	7.500	8.125	.344	312-07500
7-1/2	8-1/8	5/8	5/16	7.500	8.125	.688	312-07500-625
7-1/2	8-1/4	3/8	3/8	7.500	8.250	.413	375-07500
7-1/2	8-1/4	1/2	3/8	7.500	8.250	.550	375-07500-500
7-1/2	8-1/4	1/2	3/8	7.500	8.250	.550	375-07500-500B
7-1/2	8-1/4	5/8	3/8	7.500	8.250	.688	375-07500-625
7-1/2	8-1/4	5/8	3/8	7.500	8.250	.688	375-07500-625B
7-1/2	8-1/2	1/2	1/2	7.500	8.500	.550	500-07500
7-1/2	8-1/2	3/4	1/2	7.500	8.500	.825	500-07500-750
7-1/2	8-1/2	3/4	1/2	7.500	8.500	.825	500-07500-750B
7-1/2	8-3/4	1	5/8	7.500	8.750	1.100	625-07500-1000B
7-1/2	9	3/4	3/4	7.500	9.000	.825	750-07500
7-1/2	9	1-1/4	3/4	7.500	9.000	1.375	750-07500-1250
7-1/2	9-1/2	1	1	7.500	9.500	1.100	1000-07500
7-5/8	8-1/4	1/2	5/16	7.625	8.250	.550	312-07625-500
7-5/8	8-3/8	3/8	3/8	7.625	8.375	.413	375-07625
7-3/4	8-1/4	1/4	1/4	7.750	8.250	.275	250-07750
7-3/4	8-1/4	3/8	1/4	7.750	8.250	.413	250-07750-375
7-3/4	8-1/4	9/16	1/4	7.750	8.250	.619	250-07750-562

SPEC SEAL Seals & O-rings Specialist

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
7-3/4	8-1/4	9/16	1/4	7.750	8.250	.619	250-07750-562B
7-3/4	8-1/2	3/8	3/8	7.750	8.500	.413	375-07750
7-3/4	8-1/2	1/2	3/8	7.750	8.500	.550	375-07750-500
7-3/4	8-1/2	1/2	3/8	7.750	8.500	.550	375-07750-500B
7-3/4	8-1/2	5/8	3/8	7.750	8.500	.688	375-07750-625
7-3/4	8-1/2	5/8	3/8	7.750	8.500	.688	375-07750-625B
7-3/4	8-3/4	1/2	1/2	7.750	8.750	.550	500-07750
7-3/4	8-3/4	3/4	1/2	7.750	8.750	.825	500-07750-750B
7-3/4	9	5/8	5/8	7.750	9.000	.688	625-07750
7-3/4	9	1	5/8	7.750	9.000	1.100	625-07750-1000B
7-3/4	9-1/2	7/8	7/8	7.750	9.500	.963	875-07750
7.790	8.540	3/8	3/8	7.790	8.540	.413	375-07790-375B
7-13/16	8-5/16	1/4	1/4	7.812	8.312	.275	250-07812
7-7/8	8-1/2	5/8	5/16	7.875	8.500	.688	312-07875-625B
8	8-1/2	1/4	1/4	8.000	8.500	.275	250-08000
8	8-1/2	9/16	1/4	8.000	8.500	.619	250-08000-562B
8	8-5/8	5/16	5/16	8.000	8.625	.344	312-08000
8	8-5/8	5/8	5/16	8.000	8.625	.688	312-08000-625B
8	8-3/4	3/8	3/8	8.000	8.750	.413	375-08000
8	8-3/4	1/2	3/8	8.000	8.750	.550	375-08000-500
8	8-3/4	5/8	3/8	8.000	8.750	.688	375-08000-625
8	8-3/4	5/8	3/8	8.000	8.750	.688	375-08000-625B
8	9	1/2	1/2	8.000	9.000	.550	500-08000
8	9	3/4	1/2	8.000	9.000	.825	500-08000-750
8	9	3/4	1/2	8.000	9.000	.825	500-08000-750B
8	9-1/4	5/8	5/8	8.000	9.250	.688	625-08000
8	9-1/2	3/4	3/4	8.000	9.500	.825	750-08000
8	9-1/2	1-1/8	3/4	8.000	9.500	1.238	750-08000-1125B
8	9-1/2	1-1/4	3/4	8.000	9.500	1.375	750-08000-1250B
8	10	1	1	8.000	10.000	1.100	1000-08000
8-1/8	8-5/8	9/16	1/4	8.125	8.625	.619	250-08125-562B
8-1/8	9-1/8	1/2	1/2	8.125	9.125	.550	500-08125
8-3/16	9-7/16	5/8	5/8	8.187	9.437	.688	625-08187
8-1/4	8-3/4	1/4	1/4	8.250	8.750	.275	250-08250
8-1/4	8-3/4	3/8	1/4	8.250	8.750	.413	250-08250-375B
8-1/4	8-3/4	7/16	1/4	8.250	8.750	.481	250-08250-437B
8-1/4	8-3/4	9/16	1/4	8.250	8.750	.619	250-08250-562B
8-1/4	9	3/8	3/8	8.250	9.000	.413	375-08250
8-1/4	9	5/8	3/8	8.250	9.000	.688	375-08250-625
8-1/4	9	5/8	3/8	8.250	9.000	.688	375-08250-625B
8-1/4	9-1/4	1/2	1/2	8.250	9.250	.550	500-08250
8-1/4	9-1/4	3/4	1/2	8.250	9.250	.825	500-08250-750
8-1/4	9-1/4	3/4	1/2	8.250	9.250	.825	500-08250-750B
8-1/4	9-1/2	5/8	5/8	8.250	9.500	.688	625-08250
8-1/4	9-1/2	1	5/8	8.250	9.500	1.100	625-08250-1000B

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
8-1/4	9-3/4	3/4	3/4	8.250	9.750	.825	750-08250
8-3/8	9	5/8	5/16	8.375	9.000	.688	312-08375-625
8-3/8	9-5/8	5/8	5/8	8.375	9.625	.688	625-08375
8-3/8	9-7/8	3/4	3/4	8.375	9.875	.825	750-08375
8-1/2	9	1/4	1/4	8.500	9.000	.275	250-08500
8-1/2	9	9/16	1/4	8.500	9.000	.619	250-08500-562
8-1/2	9	9/16	1/4	8.500	9.000	.619	250-08500-562B
8-1/2	9-1/16	9/32	9/32	8.500	9.062	.309	281-08500
8-1/2	9-1/4	3/8	3/8	8.500	9.250	.413	375-08500
8-1/2	9-1/4	5/8	3/8	8.500	9.250	.688	375-08500-625B
8-1/2	9-1/2	1/2	1/2	8.500	9.500	.550	500-08500
8-1/2	9-1/2	3/4	1/2	8.500	9.500	.825	500-08500-750
8-1/2	9-1/2	3/4	1/2	8.500	9.500	.825	500-08500-750B
8-1/2	9-3/4	5/8	5/8	8.500	9.750	.688	625-08500
8-1/2	9-3/4	1	5/8	8.500	10.000	1.100	625-08500-1000B
8-1/2	10	3/4	3/4	8.500	10.000	.825	750-08500
8-1/2	10	1-1/8	3/4	8.500	10.000	1.238	750-08500-1125B
8-1/2	10	1-1/4	3/4	8.500	10.000	1.375	750-08500-1250
8-1/2	10-1/4	7/8	7/8	8.500	10.250	.963	875-08500
8-9/16	9-5/16	3/8	3/8	8.562	9.312	.413	375-08562
8-5/8	9-3/8	3/8	3/8	8.625	9.375	.413	375-08625
8-5/8	9-7/8	5/8	5/8	8.625	9.875	.688	625-08625
8-11/16	9-7/16	3/8	3/8	8.687	9.437	.413	375-08687
8-3/4	9-1/4	1/4	1/4	8.750	9.250	.275	250-08750
8-3/4	9-1/2	3/8	3/8	8.750	9.500	.413	375-08750
8-3/4	9-1/2	1/2	3/8	8.750	9.500	.550	375-08750-500B
8-3/4	9-1/2	5/8	3/8	8.750	9.500	.688	375-08750-625
8-3/4	9-1/2	3/4	3/8	8.750	9.500	.825	375-08750-750
8-3/4	9-1/2	3/4	3/8	8.750	9.500	.825	375-08750-750B
8-3/4	9-3/4	1/2	1/2	8.750	9.750	.550	500-08750
8-3/4	9-3/4	3/4	1/2	8.750	9.750	.825	500-08750-750B
8-3/4	10	5/8	5/8	8.750	10.000	.688	625-08750
8-3/4	10	1	5/8	8.750	10.000	1.100	625-08750-1000
8.795	9.545	3/8	3/8	8.795	9.545	.413	375-08795-375B
8-7/8	9-1/2	5/16	5/16	8.875	9.500	.344	312-08875
8-7/8	9-5/8	5/8	3/8	8.875	9.625	.688	375-08875-625B
8-7/8	9-7/8	3/4	1/2	8.875	9.875	.825	500-08875-750
8-15/16	9-1/2	1/2	9/32	8.937	9.500	.550	281-08937-500B
9	9-1/2	1/4	1/4	9.000	9.500	.275	250-09000
9	9-1/2	3/8	1/4	9.000	9.500	.413	250-09000-375
9	9-5/8	1/2	5/16	9.000	9.625	.550	312-09000-500
9	9-3/4	3/8	3/8	9.000	9.750	.413	375-09000
9	9-3/4	5/8	3/8	9.000	9.750	.688	375-09000-625
9	9-3/4	5/8	3/8	9.000	9.750	.688	375-09000-625B
9	10	1/2	1/2	9.000	10.000	.550	500-09000

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
9	10	3/4	1/2	9.000	10.000	.825	500-09000-750
9	10	3/4	1/2	9.000	10.000	.825	500-09000-750B
9	10-1/4	5/8	5/8	9.000	10.250	.688	625-09000
9	10-1/4	1	5/8	9.000	10.250	1.100	625-09000-1000B
9	10-1/2	3/4	3/4	9.000	10.500	.825	750-09000
9	10-1/2	1-1/4	3/4	9.000	10.500	1.375	750-09000-1250
9-1/8	9-3/4	5/8	5/16	9.125	9.750	.688	312-09125-625B
9-1/4	9-3/4	1/4	1/4	9.250	9.750	.275	250-09250
9-1/4	9-3/4	9/16	1/4	9.250	9.750	.619	250-09250-562
9-1/4	9-7/8	5/8	5/16	9.250	9.875	.688	312-09250-625B
9-1/4	10	3/8	3/8	9.250	10.000	.413	375-09250
9-1/4	10	1/2	3/8	9.250	10.000	.550	375-09250-500
9-1/4	10	5/8	3/8	9.250	10.000	.688	375-09250-625
9-1/4	10	5/8	3/8	9.250	10.000	.688	375-09250-625B
9-1/4	10-1/4	3/4	1/2	9.250	10.250	.825	500-09250-750B
9-1/4	10-1/2	5/8	5/8	9.250	10.500	.688	625-09250
9-5/16	10	11/32	11/32	9.312	10.000	.377	343-09312
9-3/8	10	5/8	5/16	9.375	10.000	.688	312-09375-625B
9-3/8	10-3/4	1	11/16	9.375	10.750	1.100	687-09375-1000
9-1/2	10	1/4	1/4	9.500	10.000	.275	250-09500
9-1/2	10	9/16	1/4	9.500	10.000	.619	250-09500-562
9-1/2	10	9/16	1/4	9.500	10.000	.619	250-09500-562B
9-1/2	10-1/4	3/8	3/8	9.500	10.250	.413	375-09500
9-1/2	10-1/4	5/8	3/8	9.500	10.250	.688	375-09500-625B
9-1/2	10-1/2	1/2	1/2	9.500	10.500	.550	500-09500
9-1/2	10-1/2	3/4	1/2	9.500	10.500	.825	500-09500-750
9-1/2	10-1/2	3/4	1/2	9.500	10.500	.825	500-09500-750B
9-1/2	11	3/4	3/4	9.500	11.000	.825	750-09500
9-5/8	10-1/4	5/16	5/16	9.625	10.250	.344	312-09625
9-5/8	10-1/4	5/8	5/16	9.625	10.250	.688	312-09625-625B
9-5/8	10-3/8	5/8	3/8	9.625	10.375	.688	375-09625-625
9-5/8	11-1/2	1-1/2	15/16	9.625	11.500	1.650	937-09625-1500
9-3/4	10-1/4	1/4	1/4	9.750	10.250	.275	250-09750
9-3/4	10-1/4	3/8	1/4	9.750	10.250	.413	250-09750-375B
9-3/4	10-1/4	9/16	1/4	9.750	10.250	.619	250-09750-562B
9-3/4	10-3/8	5/8	5/16	9.750	10.375	.688	312-09750-625B
9-3/4	10-1/2	3/8	3/8	9.750	10.500	.413	375-09750
9-3/4	10-1/2	1/2	3/8	9.750	10.500	.550	375-09750-500
9-3/4	10-1/2	5/8	3/8	9.750	10.500	.688	375-09750-625
9-3/4	10-3/4	1/2	1/2	9.750	10.750	.550	500-09750
9-3/4	11	5/8	5/8	9.750	11.000	.688	625-09750
9-3/4	11	1	5/8	9.750	11.000	1.100	625-09750-1000B
9-3/4	11-1/4	1-1/4	3/4	9.750	11.250	1.375	750-09750-1250B
9-3/4	11-1/2	7/8	7/8	9.750	11.500	.963	875-09750
9-13/16	11-5/16	1-1/4	3/4	9.812	11.312	1.375	750-09812-1250

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
9-7/8	10-5/8	3/8	3/8	9.875	10.625	.413	375-09875
10	10-1/2	1/4	1/4	10.000	10.500	.275	250-10000
10	10-1/2	9/16	1/4	10.000	10.500	.619	250-10000-562B
10	10-3/4	3/8	3/8	10.000	10.750	.413	375-10000
10	10-3/4	5/8	3/8	10.000	10.750	.688	375-10000-625B
10	11	1/2	1/2	10.000	11.000	.550	500-10000
10	11	3/4	1/2	10.000	11.000	.825	500-10000-750
10	11	3/4	1/2	10.000	11.000	.825	500-10000-750B
10	11-1/4	5/8	5/8	10.000	11.250	.688	625-10000
10	11-1/4	1	5/8	10.000	11.250	1.100	625-10000-1000
10	11-1/2	3/4	3/4	10.000	11.500	.825	750-10000
10	11-1/2	1-1/4	3/4	10.000	11.500	1.375	750-10000-1250B
10	12	1	1	10.000	12.000	1.100	1000-10000
10	12-1/4	1-1/8	1-1/8	10.000	12.250	1.238	1125-10000
10-1/8	10-3/4	5/16	5/16	10.125	10.750	.344	312-10125
10-3/16	11	1/2	13/32	10.187	11.000	.550	406-10187-500
10-1/4	10-3/4	9/16	1/4	10.250	10.750	.619	250-10250-562B
10-1/4	11	3/8	3/8	10.250	11.000	.413	375-10250
10-1/4	11	1/2	3/8	10.250	11.000	.550	375-10250-500B
10-1/4	11	5/8	3/8	10.250	11.000	.688	375-10250-625
10-1/4	11	3/4	3/8	10.250	11.000	.825	375-10250-750B
10-1/4	11-1/4	3/4	1/2	10.250	11.250	.825	500-10250-750B
10-1/4	11-1/2	5/8	5/8	10.250	11.500	.688	625-10250
10-3/8	11	5/8	5/16	10.375	11.000	.688	312-10375-625B
10-1/2	11	1/4	1/4	10.500	11.000	.275	250-10500
10-1/2	11	1/2	1/4	10.500	11.000	.550	250-10500-500
10-1/2	11	9/16	1/4	10.500	11.000	.619	250-10500-562B
10-1/2	11-1/8	1/2	5/16	10.500	11.125	.550	312-10500-500
10-1/2	11-1/4	3/8	3/8	10.500	11.250	.413	375-10500
10-1/2	11-1/4	3/8	3/8	10.500	11.250	.413	375-10500-375B
10-1/2	11-1/4	5/8	3/8	10.500	11.250	.688	375-10500-625
10-1/2	11-1/4	5/8	3/8	10.500	11.250	.688	375-10500-625B
10-1/2	11-1/2	1/2	1/2	10.500	11.500	.550	500-10500
10-1/2	11-1/2	3/4	1/2	10.500	11.500	.825	500-10500-750
10-1/2	11-1/2	3/4	1/2	10.500	11.500	.825	500-10500-750B
10-1/2	11-3/4	5/8	5/8	10.500	11.750	.688	625-10500
10-1/2	11-3/4	3/4	5/8	10.500	11.750	.825	625-10500-750B
10-1/2	12	3/4	3/4	10.500	12.000	.825	750-10500
10-1/2	12	1	3/4	10.500	12.000	1.100	750-10500-1000B
10-1/2	12	1-1/4	3/4	10.500	12.000	1.375	750-10500-1250
10-5/8	11-5/8	3/4	1/2	10.625	11.625	.825	500-10625-750
10-3/4	11-1/4	1/4	1/4	10.750	11.250	.275	250-10750
10-3/4	11-1/2	3/8	3/8	10.750	11.500	.413	375-10750
10-3/4	11-1/2	5/8	3/8	10.750	11.500	.688	375-10750-625
10-3/4	11-1/2	5/8	3/8	10.750	11.500	.688	375-10750-625B

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
10-3/4	11-3/4	1/2	1/2	10.750	11.750	.550	500-10750
10-3/4	11-3/4	3/4	1/2	10.750	11.750	.825	500-10750-750
10-3/4	12-1/4	3/4	3/4	10.750	12.250	.825	750-10750
10-7/8	11-3/8	1/4	1/4	10.875	11.375	.275	250-10875
10-7/8	11-7/8	1/2	1/2	10.875	11.875	.550	500-10875
11	11-1/2	1/4	1/4	11.000	11.500	.275	250-11000
11	11-1/2	9/16	1/4	11.000	11.500	.619	250-11000-562B
11	11-3/4	3/8	3/8	11.000	11.750	.413	375-11000
11	12	1/2	1/2	11.000	12.000	.550	500-11000
11	12	3/4	1/2	11.000	12.000	.825	500-11000-750
11	12	3/4	1/2	11.000	12.000	.825	500-11000-750B
11	12-1/4	5/8	5/8	11.000	12.250	.688	625-11000
11	12-1/4	1	5/8	11.000	12.250	1.100	625-11000-1000
11	12-1/4	1	5/8	11.000	12.250	1.100	625-11000-1000B
11	12-1/2	3/4	3/4	11.000	12.500	.825	750-11000
11	12-1/2	1-1/4	3/4	11.000	12.500	1.375	750-11000-1250
11-1/4	11-3/4	1/4	1/4	11.250	11.750	.275	250-11250
11-1/4	11-3/4	3/8	1/4	11.250	11.750	.413	250-11250-375B
11-1/4	11-3/4	9/16	1/4	11.250	11.750	.619	250-11250-562B
11-1/4	12	3/8	3/8	11.250	12.000	.413	375-11250
11-1/4	12	5/8	3/8	11.250	12.000	.688	375-11250-625
11-1/4	12	5/8	3/8	11.250	12.000	.688	375-11250-625B
11-1/4	12-1/4	1/2	1/2	11.250	12.250	.550	500-11250
11-1/4	12-1/2	1	5/8	11.250	12.500	1.100	625-11250-1000B
11-3/8	12-3/8	1/2	1/2	11.375	12.375	.550	500-11375
11-3/8	12-3/8	3/4	1/2	11.375	12.375	.825	500-11375-750B
11-1/2	12	1/4	1/4	11.500	12.000	.275	250-11500
11-1/2	12-1/4	3/8	3/8	11.500	12.250	.413	375-11500
11-1/2	12-1/4	5/8	3/8	11.500	12.250	.688	375-11500-625
11-1/2	12-1/4	5/8	3/8	11.500	12.250	.688	375-11500-625B
11-1/2	12-1/2	1/2	1/2	11.500	12.500	.550	500-11500
11-1/2	12-1/2	3/4	1/2	11.500	12.500	.825	500-11500-750
11-1/2	12-1/2	3/4	1/2	11.500	12.500	.825	500-11500-750B
11-1/2	12-3/4	1	5/8	11.500	12.750	1.100	625-11500-1000B
11-1/2	13	1-1/4	3/4	11.500	13.000	1.375	750-11500-1250B
11-3/4	12-1/4	1/4	1/4	11.750	12.250	.275	250-11750
11-3/4	12-1/2	3/8	3/8	11.750	12.500	.413	375-11750
11-3/4	12-1/2	5/8	3/8	11.750	12.500	.688	375-11750-625B
11-3/4	12-1/2	3/4	3/8	11.750	12.500	.825	375-11750-750B
11-3/4	12-3/4	1/2	1/2	11.750	12.750	.550	500-11750
11-3/4	12-3/4	3/4	1/2	11.750	12.750	.825	500-11750-750B
11-3/4	13	1	5/8	11.750	13.000	1.100	625-11750-1000B
11-3/4	13-3/4	1	1	11.750	13.750	1.100	1000-11750
11-7/8	12-7/8	3/4	1/2	11.875	12.875	.825	500-11875-750B
12	12-1/2	1/4	1/4	12.000	12.500	.275	250-12000

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
12	12-5/8	5/16	5/16	12.000	12.625	.344	312-12000
12	12-3/4	3/8	3/8	12.000	12.750	.413	375-12000
12	12-3/4	5/8	3/8	12.000	12.750	.688	375-12000-625B
12	13	1/2	1/2	12.000	13.000	.550	500-12000
12	13	3/4	1/2	12.000	13.000	.825	500-12000-750B
12	13-1/4	5/8	5/8	12.000	13.250	.688	625-12000
12	13-1/4	1	5/8	12.000	13.250	1.100	625-12000-1000
12	13-1/4	1	5/8	12.000	13.250	1.100	625-12000-1000B
12	13-1/2	3/4	3/4	12.000	13.500	.825	750-12000
12	13-1/2	1-1/4	3/4	12.000	13.500	1.375	750-12000-1250B
12	14	1	1	12.000	14.000	1.100	1000-12000
12	14	1-1/2	1	12.000	14.000	1.650	1000-12000-1500B
12	14-1/4	1-1/8	1-1/8	12.000	14.250	1.238	1125-12000
12-1/8	13-1/8	3/4	1/2	12.125	13.125	.825	500-12125-750B
12-1/4	12-7/8	5/8	5/16	12.250	12.875	.688	312-12250-625B
12-1/4	13	3/8	3/8	12.250	13.000	.413	375-12250
12-1/4	13	5/8	3/8	12.250	13.000	.688	375-12250-625
12-1/4	13	5/8	3/8	12.250	13.000	.688	375-12250-625B
12-1/4	13-1/4	3/4	1/2	12.250	13.250	.825	500-12250-750B
12-1/4	13-1/2	5/8	5/8	12.250	13.500	.688	625-12250
12-1/4	13-1/2	1	5/8	12.250	13.500	1.100	625-12250-1000B
12-1/4	13-7/8	1-1/8	13/16	12.250	13.875	1.238	812-12250-1125
12-1/2	13	1/4	1/4	12.500	13.000	.275	250-12500
12-1/2	13-1/8	5/8	5/16	12.500	13.125	.688	312-12500-625B
12-1/2	13-1/4	3/8	3/8	12.500	13.250	.413	375-12500
12-1/2	13-1/4	5/8	3/8	12.500	13.250	.688	375-12500-625
12-1/2	13-1/2	3/4	1/2	12.500	13.500	.825	500-12500-750
12-1/2	13-1/2	3/4	1/2	12.500	13.500	.825	500-12500-750B
12-1/2	13-3/4	1	5/8	12.500	13.750	1.100	625-12500-1000
12-1/2	14	3/4	3/4	12.500	14.000	.825	750-12500
12-1/2	14	1-1/4	3/4	12.500	14.000	1.375	750-12500-1250B
12-1/2	14-1/2	1	1	12.500	14.500	1.100	1000-12500
12-9/16	13-11/16	7/8	9/16	12.562	13.687	.963	562-12562-875B
12-3/4	13-1/4	9/16	1/4	12.750	13.250	.619	250-12750-562B
12-3/4	13-3/8	5/16	5/16	12.750	13.375	.344	312-12750
12-3/4	13-1/2	3/8	3/8	12.750	13.500	.413	375-12750
12-3/4	13-1/2	5/8	3/8	12.750	13.500	.688	375-12750-625B
12-3/4	13-3/4	1/2	1/2	12.750	13.750	.550	500-12750
12-3/4	14	5/8	5/8	12.750	14.000	.688	625-12750
12-3/4	14	1	5/8	12.750	14.000	1.100	625-12750-1000
13	13-1/2	1/4	1/4	13.000	13.500	.275	250-13000
13	13-1/2	9/16	1/4	13.000	13.500	.619	250-13000-562
13	13-1/2	9/16	1/4	13.000	13.500	.619	250-13000-562B
13	13-3/4	3/8	3/8	13.000	13.750	.413	375-13000
13	13-3/4	3/8	3/8	13.000	13.750	.413	375-13000-375B

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
13	13-3/4	5/8	3/8	13.000	13.750	.688	375-13000-625B
13	14	1/2	1/2	13.000	14.000	.550	500-13000
13	14	3/4	1/2	13.000	14.000	.825	500-13000-750
13	14	3/4	1/2	13.000	14.000	.825	500-13000-750B
13	14-1/4	5/8	5/8	13.000	14.250	.688	625-13000
13	14-1/2	3/4	3/4	13.000	14.500	.825	750-13000
13	14-1/2	1	3/4	13.000	14.500	1.100	750-13000-1000B
13	14-3/4	1-3/8	7/8	13.000	14.750	1.513	875-13000-1375
13-3/16	14	13/32	13/32	13.187	14.000	.447	406-13187
13-1/4	14	3/8	3/8	13.250	14.000	.413	375-13250
13-1/4	14-1/4	1/2	1/2	13.250	14.250	.550	500-13250
13-1/4	14-1/4	3/4	1/2	13.250	14.250	.825	500-13250-750
13-1/4	14-1/4	3/4	1/2	13.250	14.250	.825	500-13250-750B
13-3/8	14	5/16	5/16	13.375	14.000	.344	312-13375
13-1/2	14	1/4	1/4	13.500	14.000	.275	250-13500
13-1/2	14-1/4	3/8	3/8	13.500	14.250	.413	375-13500
13-1/2	14-1/4	5/8	3/8	13.500	14.250	.688	375-13500-625
13-1/2	14-1/4	5/8	3/8	13.500	14.250	.688	375-13500-625B
13-1/2	14-1/2	3/4	1/2	13.500	14.500	.825	500-13500-750
13-1/2	14-1/2	3/4	1/2	13.500	14.500	.825	500-13500-750B
13-1/2	14-3/4	7/8	5/8	13.500	14.750	.963	625-13500-875B
13-1/2	15	3/4	3/4	13.500	15.000	.825	750-13500
13-3/4	14-1/2	3/8	3/8	13.750	14.500	.413	375-13750
13-3/4	14-1/2	5/8	3/8	13.750	14.500	.688	375-13750-625B
13-3/4	15-1/4	3/4	3/4	13.750	15.250	.825	750-13750
14	14-1/2	1/4	1/4	14.000	14.500	.275	250-14000
14	14-1/2	3/8	1/4	14.000	14.500	.413	250-14000-375
14	14-3/4	3/8	3/8	14.000	14.750	.413	375-14000
14	15	1/2	1/2	14.000	15.000	.550	500-14000
14	15	3/4	1/2	14.000	15.000	.825	500-14000-750
14	15	3/4	1/2	14.000	15.000	.825	500-14000-750B
14	15-1/4	1	5/8	14.000	15.250	1.100	625-14000-1000B
14	15-1/2	3/4	3/4	14.000	15.500	.825	750-14000
14	15-1/2	1-1/4	3/4	14.000	15.500	1.375	750-14000-1250B
14	15-3/4	1-1/2	7/8	14.000	15.750	1.650	875-14000-1500
14	16	1	1	14.000	16.000	1.100	1000-14000
14-1/8	14-5/8	1/4	1/4	14.125	14.625	.275	250-14125
14-1/4	14-3/4	1/4	1/4	14.250	14.750	.275	250-14250
14-1/4	14-7/8	5/16	5/16	14.250	14.875	.344	312-14250
14-1/4	15	5/8	3/8	14.250	15.000	.688	375-14250-625B
14-1/4	15-3/4	3/4	3/4	14.250	15.750	.825	750-14250
14.420	15.420	1/2	1/2	14.420	15.420	.550	500-14420-500B
14-1/2	15	3/8	1/4	14.500	15.000	.413	250-14500-375
14-1/2	15-1/4	3/8	3/8	14.500	15.250	.413	375-14500
14-1/2	15-1/2	1/2	1/2	14.500	15.500	.550	500-14500

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
14-1/2	16	3/4	3/4	14.500	16.000	.825	750-14500
14-1/2	16-1/2	1	1	14.500	16.500	1.100	1000-14500
14-3/4	15-1/2	3/8	3/8	14.750	15.500	.413	375-14750
14-3/4	15-1/2	5/8	3/8	14.750	15.500	.688	375-14750-625
14-3/4	15-1/2	5/8	3/8	14.750	15.500	.688	375-14750-625B
14-3/4	15-3/4	3/4	1/2	14.750	15.750	.825	500-14750-750B
14-3/4	16	5/8	5/8	14.750	16.000	.688	625-14750
14-3/4	16-1/4	3/4	3/4	14.750	16.250	.825	750-14750
14-7/8	15-1/2	5/16	5/16	14.875	15.500	.344	312-14875
14-7/8	15-5/8	5/8	3/8	14.875	15.625	.688	375-14875-625
15	15-1/2	9/16	1/4	15.000	15.500	.619	250-15000-562
15	15-1/2	9/16	1/4	15.000	15.500	.619	250-15000-562B
15	15-3/4	3/8	3/8	15.000	15.750	.413	375-15000
15	16	1/2	1/2	15.000	16.000	.550	500-15000
15	16	3/4	1/2	15.000	16.000	.825	500-15000-750
15	16	3/4	1/2	15.000	16.000	.825	500-15000-750B
15	16-1/4	5/8	5/8	15.000	16.250	.688	625-15000
15	16-1/2	1-1/4	3/4	15.000	16.500	1.375	750-15000-1250
15	17	1-1/2	1	15.000	17.000	1.650	1000-15000-1500B
15-1/4	16	5/8	3/8	15.250	16.000	.688	375-15250-625
15-1/4	16-1/4	3/4	1/2	15.250	16.250	.825	500-15250-750B
15-3/8	16	5/8	5/16	15.375	16.000	.688	312-15375-625
15-1/2	16-1/4	3/8	3/8	15.500	16.250	.413	375-15500
15-1/2	16-1/2	3/4	1/2	15.500	16.500	.825	500-15500-750
15-1/2	16-1/2	3/4	1/2	15.500	16.500	.825	500-15500-750B
15-1/2	16-3/4	1	5/8	15.500	16.750	1.100	625-15500-1000B
15-5/8	16-1/4	5/8	5/16	15.625	16.250	.688	312-15625-625B
15-5/8	17-1/8	1-1/4	3/4	15.625	17.125	1.375	750-15625-1250B
15-3/4	16-1/4	9/16	1/4	15.750	16.250	.619	250-15750-562
15-3/4	16-1/2	3/8	3/8	15.750	16.500	.413	375-15750
15-3/4	16-3/4	1/2	1/2	15.750	16.750	.550	500-15750
15-7/8	16-1/2	5/16	5/16	15.875	16.500	.344	312-15875
16	16-1/2	1/4	1/4	16.000	16.500	.275	250-16000-250
16	16-1/2	3/8	1/4	16.000	16.500	.413	250-16000-375
16	16-3/4	3/8	3/8	16.000	16.750	.413	375-16000
16	16-3/4	5/8	3/8	16.000	16.750	.688	375-16000-625
16	17	3/4	1/2	16.000	17.000	.825	500-16000-750
16	17-1/2	3/4	3/4	16.000	17.500	.825	750-16000
16	17-3/4	1-1/4	7/8	16.000	17.750	1.375	875-16000-1250
16	17-3/4	1-3/8	7/8	16.000	17.750	1.513	875-16000-1375
16	18	1	1	16.000	18.000	1.100	1000-16000
16	18	1-1/4	1	16.000	18.000	1.375	1000-16000-1250
16	18	1-1/4	1	16.000	18.000	1.375	1000-16000-1250B
16-1/4	17	3/8	3/8	16.250	17.000	.413	375-16250
16-1/4	18	7/8	7/8	16.250	18.000	.963	875-16250

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
16.410	17.410	1/2	1/2	16.410	17.410	.550	500-16410-500B
16-1/2	17-1/4	3/8	3/8	16.500	17.250	.413	375-16500
16-1/2	17-1/2	3/4	1/2	16.500	17.500	.825	500-16500-750B
16-1/2	18	3/4	3/4	16.500	18.000	.825	750-16500-750
16-1/2	18	1-1/4	3/4	16.500	18.000	1.375	750-16500-1250
16-3/4	17-3/4	3/4	1/2	16.750	17.750	.825	500-16750-750B
16-3/4	18	5/8	5/8	16.750	18.000	.688	625-16750
17	18	1/2	1/2	17.000	18.000	.550	500-17000
17	18	3/4	1/2	17.000	18.000	.825	500-17000-750
17	18	3/4	1/2	17.000	18.000	.825	500-17000-750B
17	19	1-1/4	1	17.000	19.000	1.375	1000-17000-1250
17-1/4	18	3/8	3/8	17.250	18.000	.413	375-17250
17-3/8	18-7/8	1-1/4	3/4	17.375	18.875	1.375	750-17375-1250B
17-3/8	19	1-1/8	13/16	17.375	19.000	1.238	812-17375-1125
17-1/2	18-1/2	1/2	1/2	17.500	18.500	.550	500-17500
17-1/2	18-1/2	3/4	1/2	17.500	18.500	.825	500-17500-750B
17-1/2	18-3/4	1	5/8	17.500	18.750	1.100	625-17500-1000
17-1/2	19-1/2	1-1/2	1	17.500	19.500	1.650	1000-17500-1500B
17-5/8	19-1/8	1-1/4	3/4	17.625	19.125	1.375	750-17625-1250B
17-3/4	18-1/2	1/2	3/8	17.750	18.500	.550	375-17750-500
17-3/4	19	1	5/8	17.750	19.000	1.100	625-17750-1000B
17-15/16	19-3/8	1-1/4	23/32	17.937	19.375	1.375	719-17937-1250B
18	19	3/4	1/2	18.000	19.000	.825	500-18000-750
18	19	3/4	1/2	18.000	19.000	.825	500-18000-750B
18	19-1/4	1-1/4	5/8	18.000	19.250	1.375	625-18000-1250
18	19-1/2	3/4	3/4	18.000	19.500	.825	750-18000
18	19-1/2	1-1/4	3/4	18.000	19.500	1.375	750-18000-1250
18	19-3/4	1-1/4	7/8	18.000	19.750	1.375	875-18000-1250
18-1/2	19-1/2	3/4	1/2	18.500	19.500	.825	500-18500-750
18-1/2	20-1/2	1	1	18.500	20.500	1.100	1000-18500
18-3/4	20	5/8	5/8	18.750	20.000	.688	625-18750
18-3/4	20	1	5/8	18.750	20.000	1.100	625-18750-1000B
19	19-1/2	1/4	1/4	19.000	19.500	.275	250-19000
19	20	1/2	1/2	19.000	20.000	.550	500-19000
19	20	3/4	1/2	19.000	20.000	.825	500-19000-750
19	20	3/4	1/2	19.000	20.000	.825	500-19000-750B
19	20-1/2	3/4	3/4	19.000	20.500	.825	750-19000
19	20-1/2	1-1/4	3/4	19.000	20.500	1.375	750-19000-1250B
19-1/8	19-5/8	9/16	1/4	19.125	19.625	.619	250-19125-562B
19-1/8	20-1/8	3/4	1/2	19.125	20.125	.825	500-19125-750
19-1/4	20	5/8	3/8	19.250	20.000	.688	375-19250-625B
19-1/4	20-1/2	5/8	5/8	19.250	20.500	.688	625-19250
19-3/8	20-1/4	1/2	7/16	19.375	20.250	.550	437-19375-500B
19-1/2	20	1/4	1/4	19.500	20.000	.275	250-19500-250
19-1/2	20	5/16	1/4	19.500	20.000	.344	250-19500-312

SPEC SEAL Seals & O-rings Specialist

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
19-1/2	20-1/2	1/2	1/2	19.500	20.500	.550	500-19500
19-5/8	20-5/8	3/4	1/2	19.625	20.625	.825	500-19625-750B
19-3/4	21	1	5/8	19.750	21.000	1.100	625-19750-1000B
19-15/16	21-11/16	1-3/8	7/8	19.937	21.687	1.513	875-19937-1375B
20	21	1/2	1/2	20.000	21.000	.550	500-20000
20	21	3/4	1/2	20.000	21.000	.825	500-20000-750
20	21	3/4	1/2	20.000	21.000	.825	500-20000-750B
20	21-1/4	5/8	5/8	20.000	21.250	.688	625-20000
20	21-1/2	1	3/4	20.000	21.500	1.100	750-20000-1000B
20	21-1/2	1-1/4	3/4	20.000	21.500	1.375	750-20000-1250
20	21-1/2	1-1/4	3/4	20.000	21.500	1.375	750-20000-1250B
20	21-3/4	7/8	7/8	20.000	21.750	.963	875-20000
20	22	7/8	1	20.000	22.000	.963	1000-20000-875
20	22	1-1/2	1	20.000	22.000	1.650	1000-20000-1500
20-1/4	21-1/4	3/4	1/2	20.250	21.250	.825	500-20250-750B
20-1/2	21-1/2	3/4	1/2	20.500	21.500	.825	500-20500-750
20-1/2	22	3/4	3/4	20.500	22.000	.825	750-20500
20-1/2	22	1	3/4	20.500	22.000	1.100	750-20500-1000B
21	21-1/2	5/16	1/4	21.000	21.500	.344	250-21000-312
21	22	1/2	1/2	21.000	22.000	.550	500-21000
21	22	3/4	1/2	21.000	22.000	.825	500-21000-750
21	22	3/4	1/2	21.000	22.000	.825	500-21000-750B
21	22-1/2	1-1/4	3/4	21.000	22.500	1.375	750-21000-1250
21-1/4	23-1/4	1-1/2	1	21.250	23.250	1.650	1000-21250-1500B
21-1/2	22-1/2	3/4	1/2	21.500	22.500	.825	500-21500-750
21-1/2	23	1-1/4	3/4	21.500	23.000	1.375	750-21500-1250
21-3/4	22-1/4	3/8	1/4	21.750	22.250	.413	250-21750-375B
21-13/16	22-7/16	5/16	5/16	21.812	22.437	.344	312-21812
22	23-1/2	3/4	3/4	22.000	23.500	.825	750-22000
22	23-1/2	1-1/4	3/4	22.000	23.500	1.375	750-22000-1250
22	24	1-3/8	1	22.000	24.000	1.513	1000-22000-1375
22-1/16	22-9/16	3/8	1/4	22.062	22.562	.413	250-22062-375B
22-1/4	23-3/4	1-1/4	3/4	22.250	23.750	1.375	750-22250-1250
22-1/2	23	5/16	1/4	22.500	23.000	.344	250-22500-312
22-1/2	24	3/4	3/4	22.500	24.000	.825	750-22500
22-1/2	24	1-1/4	3/4	22.500	24.000	1.375	750-22500-1250
22-3/4	23-3/4	5/8	1/2	22.750	23.750	.688	500-22750-625
23	23-1/2	3/8	1/4	23.000	23.500	.413	250-23000-375B
23	23-3/4	3/8	3/8	23.000	23.750	.413	375-23000
23	24	1/2	1/2	23.000	24.000	.550	500-23000
23-1/4	24	5/8	3/8	23.250	24.000	.688	375-23250-625
23-3/8	25-3/8	1	1	23.375	25.375	1.100	1000-23375
23-1/2	24	1/4	1/4	23.500	24.000	.275	250-23500
23-1/2	25	1-1/4	3/4	23.500	25.000	1.375	750-23500-1250B
23-3/4	24-1/4	3/8	1/4	23.750	24.250	.413	250-23750-375B

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
24	24-3/4	5/8	3/8	24.000	24.750	.688	375-24000-625
24	25	3/4	1/2	24.000	25.000	.825	500-24000-750B
24	25-1/2	1-1/4	3/4	24.000	25.500	1.375	750-24000-1250
24	25-3/4	1-1/4	7/8	24.000	25.750	1.375	875-24000-1250
24	26	1-1/2	1	24.000	26.000	1.650	1000-24000-1500B
24-1/2	25	1/4	1/4	24.500	25.000	.275	250-24500
24-1/2	25-1/2	3/4	1/2	24.500	25.500	.825	500-24500-750B
24-1/2	26	.688	3/4	24.500	26.000	.757	750-24500-688
24-3/4	26	5/8	5/8	24.750	26.000	.688	625-24750
24-7/8	25-7/8	3/4	1/2	24.875	25.875	.825	500-24875-750B
25	25-3/4	5/8	3/8	25.000	25.750	.688	375-25000-625B
25	27	1-11/32	1	25.000	27.000	1.477	1000-25000-1343
25-1/4	26-1/4	3/4	1/2	25.250	26.250	.825	500-25250-750
25-1/2	26-1/4	5/8	3/8	25.500	26.250	.688	375-25500-625
25-1/2	27	3/4	3/4	25.500	27.000	.825	750-25500
25-3/4	26-1/2	5/8	3/8	25.750	26.500	.688	375-25750-625B
26	27	1/2	1/2	26.000	27.000	.550	500-26000
26	27-1/2	3/4	3/4	26.000	27.500	.825	750-26000
26	28	1-1/2	1	26.000	28.000	1.650	1000-26000-1500
26	28	1-1/2	1	26.000	28.000	1.650	1000-26000-1500B
26-1/8	27-1/8	3/4	1/2	26.125	27.125	.825	500-26125-750B
26.190	27.190	5/8	1/2	26.190	27.190	.688	500-26190-625B
26-1/2	27-1/2	1/2	1/2	26.500	27.500	.550	500-26500
26-1/2	27-1/2	3/4	1/2	26.500	27.500	.825	500-26500-750B
26-23/32	27-7/32	5/16	1/4	26.718	27.218	.344	250-26718-312
26-3/4	27-1/2	5/8	3/8	26.750	27.500	.688	375-26750-625
27	28	3/4	1/2	27.000	28.000	.825	500-27000-750
27-1/4	28	3/8	3/8	27.250	28.000	.413	375-27250
27-1/2	28-1/2	3/4	1/2	27.500	28.500	.825	500-27500-750
27-5/8	28-3/8	3/8	3/8	27.625	28.375	.413	375-27625
28	29	1/2	1/2	28.000	29.000	.550	500-28000
28	29	3/4	1/2	28.000	29.000	.825	500-28000-750
28	30	1	1	28.000	30.000	1.100	1000-28000
28-1/2	29-1/2	3/4	1/2	28.500	29.500	.825	500-28500-750
28-3/4	29-1/2	5/8	3/8	28.750	29.500	.688	375-28750-625
29	29-3/4	5/8	3/8	29.000	29.750	.688	375-29000-625
29	30	3/4	1/2	29.000	30.000	.825	500-29000-750
29	30	3/4	1/2	29.000	30.000	.825	500-29000-750B
29	31	1-1/2	1	29.000	31.000	1.650	1000-29000-1500
29	31	1-1/2	1	29.000	31.000	1.650	1000-29000-1500B
29-1/2	31	1-1/2	3/4	29.500	31.000	1.650	750-29500-1500
30	30-3/4	5/8	3/8	30.000	30.750	.688	375-30000-625B
30	31	5/8	1/2	30.000	31.000	.688	500-30000-625
30	31-1/4	1	5/8	30.000	31.250	1.100	625-30000-1000B
30	32	1-1/2	1	30.000	32.000	1.650	1000-30000-1500B

Rubber Energized U-Cup

(Inch Size)

Nominal Part Size				Rod/Groove Dia.	Bore/Groove Dia.	Groove Width	Reference (For order processing)
ID	OD	H	CS	d	D	L	
30-1/4	31-1/4	3/4	1/2	30.250	31.250	.825	500-30250-750
30-3/4	31-3/4	3/4	1/2	30.750	31.750	.825	500-30750-750B
31	32	1/2	1/2	31.000	32.000	.550	500-31000
31	32-1/2	.688	3/4	31.000	32.500	.757	750-31000-688
31-1/2	32-1/4	5/8	3/8	31.500	32.250	.688	375-31500-625
31-3/4	32-1/2	3/8	3/8	31.750	32.500	.413	375-31750
32	32-3/4	5/8	3/8	32.000	32.750	.688	375-32000-625
32	33	1/2	1/2	32.000	33.000	.550	500-32000
32	33-1/2	7/8	3/4	32.000	33.500	.963	750-32000-875
32-1/2	33-1/4	3/8	3/8	32.500	33.250	.413	375-32500
33	34	3/4	1/2	33.000	34.000	.825	500-33000-750
33-3/8	35-3/8	1-1/2	1	33.375	35.375	1.650	1000-33375-1500B
34	34-3/4	5/8	3/8	34.000	34.750	.688	375-34000-625
34-1/2	35-1/2	3/4	1/2	34.500	35.500	.825	500-34500-750B
35	35-3/4	5/8	3/8	35.000	35.750	.688	375-35000-625
36	36-3/4	5/8	3/8	36.000	36.750	.688	375-36000-625
36	37-3/4	1-3/8	7/8	36.000	37.750	1.513	875-36000-1375B
37	37-3/4	5/8	3/8	37.000	37.750	.688	375-37000-625
37	38	3/4	1/2	37.000	38.000	.825	500-37000-750
37-1/2	38-1/4	3/8	3/8	37.500	38.250	.413	375-37500
38	39	3/4	1/2	38.000	39.000	.825	500-38000-750B
38-1/2	39-1/4	3/8	3/8	38.500	39.250	.413	375-38500
38-3/4	39-3/4	3/4	1/2	38.750	39.750	.825	500-38750-750B
40	40-3/4	5/8	3/8	40.000	40.750	.688	375-40000-625
41	42	3/4	1/2	41.000	42.000	.825	500-41000-750B
42	43	3/4	1/2	42.000	43.000	.825	500-42000-750B
43-1/2	44-1/2	3/4	1/2	43.500	44.500	.825	500-43500-750B
44-1/8	45-1/8	3/4	1/2	44.125	45.125	.825	500-44125-750B
47-1/2	48-1/2	3/4	1/2	47.500	48.500	.825	500-47500-750B

SPEC SEAL

Seals & O-rings Specialist

SPEC SEAL
Seals & O-rings Specialist

Rod Seals

Design	Ref.	Material	Pressure (BAR)	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	SP-55-171	PTFE+Bronze - O-Ring	400	-40 +200	15	●		198
	RS TTI	PU	400	-40 +95	0.6	●		204
	UHR	PU	400	-40 +95	0.6	●		205
	UNR	PU	400	-40 +95	0.6	●		206
	RS/L H-605 TTI/L	PU	400	-45 +110	1	●		216
	SD TS/L TTS/L	PU	400	-40 +95	0.6	●		226
	JAM	PU-NBR-PU	500	-30 +100	0.5	●		232
	BD H-621	PU-NBR-POM	500	-35 +110	0.5	●		234
	TGO	NBR+Fabric	220	-30 +120	0.5	●		236
	SE	NBR+Fabric	220	-30 +120	0.5	●	●	236
	SE/G	NBR+Fabric-POM	450	-30 +120	0.5	●	●	236
	PSE	NBR+Fabric-POM	700	-30 +120	0.5	●		246
	SP-11-2100 DS19	PTFE-Stainless Spring	450	-150 +225	15	●	●	250
	C1	NBR	160	-35 +100	0.5	●		254
	GNY	NBR	175 (250)	-30 +100	1 (0.5)	●		260

Note : Packing used with back up ring can stand pressure show in ( ).

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Rod Seals

Design	Ref.	Material	Pressure (BAR)	Temp. (°C)	Speed (m/s)	Dim mm. inch	Page
	RNY	NBR	140 (210)	-25 +100	1 (0.5)	•	262
	SNY	NBR	210	-45 +100	0.5	•	264
	PS	NBR	140 (210)	-10 +80	0.5	•	266
	SP-55-111	PTFE+Bronze - O-Ring	400	-40 +200	15	•	268
	SP-11-7401	PTFE - O Ring	350	-40 +200	15	•	272
	SAL	NBR+Fabric-PU	400	-30 +100	0.5	•	276
	TR	NBR+POM	350	-30 +110	1	•	278

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PTFE Seal - 171

Rod Seals

SP-55-171 (Metric Size)

SP-55-171

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Bronze - O Ring	400	-40 +200	15

- Excellent anti-friction characteristics.
- No stick-slip effect during start up.
- Long service life.
- Simple groove configuration.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
S	C
< 3.75	2.0
5.50	3.0
7.75	4.0
10.50	5.5
12.25	7.0

Installation Dimensions

Series No.	Rod Dia.			Groove Dia.	Groove Width.	Radius	Radial Clearance F max.*			O-Ring Cross-Section
	Standard Application	Light Application	Heavy-Duty Application	D	L	r1	100 Bar	200 Bar	400 Bar	
A	3 - 7.9	8 - 18.9	-	d + 4.9	2.2	0.4	0.30	0.20	0.15	1.78
B	8 - 18.9	19 - 37.9	-	d + 7.3	3.2	0.6	0.40	0.25	0.15	2.62
C	19 - 37.9	38 - 199.9	8 - 18.9	d + 10.7	4.2	1.0	0.40	0.25	0.20	3.53
D	38 - 199.9	200 - 255.9	19 - 37.9	d + 15.1	6.3	1.3	0.50	0.30	0.20	5.33
E	200 - 255.9	256 - 649.9	38 - 199.9	d + 20.5	8.1	1.8	0.60	0.35	0.25	7.00
F	256 - 649.9	650 - 999.9	200 - 255.9	d + 24.0	8.1	1.8	0.60	0.35	0.25	7.00
G	650 - 999.9	≥ 1000	256 - 649.9	d + 27.3	9.5	2.5	0.70	0.50	0.30	8.40
H	≥ 1000	-	650 - 999.9	d + 38.0	13.8	3.0	1.00	0.70	0.60	12.00

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
4.0	8.9	2.2	010	SP-55-171-0040	S55013-0040	ER-39-710-4
5.0	9.9	2.2	011	SP-55-171-0050	S55013-0050	ER-39-710-5
6.0	10.9	2.2	011	SP-55-171-0060	S55013-0060	ER-39-710-6
7.0	11.9	2.2	012	SP-55-171-0070	S55013-0070	ER-39-710-7
8.0	12.9	2.2	012	SP-55-171-0080A	S55015-0080	ER-39-711-8
8.0	15.3	3.2	111	SP-55-171-0080	S55013-0080	ER-39-710-8
10.0	14.9	2.2	013	SP-55-171-0100A	S55015-0100	ER-39-711-10
10.0	17.3	3.2	113	SP-55-171-0100	S55013-0100	ER-39-710-10
12.0	16.9	2.2	015	SP-55-171-0120A	S55015-0120	ER-39-711-12
12.0	19.3	3.2	114	SP-55-171-0120	S55013-0120	ER-39-710-12
14.0	18.9	2.2	016	SP-55-171-0140A	S55015-0140	ER-39-711-14
14.0	21.3	3.2	115	SP-55-171-0140	S55013-0140	ER-39-710-14
15.0	19.9	2.2	016	SP-55-171-0150A	S55015-0150	ER-39-711-15
15.0	22.3	3.2	116	SP-55-171-0150	S55013-0150	ER-39-710-15
16.0	20.9	2.2	017	SP-55-171-0160A	S55015-0160	ER-39-711-16
16.0	23.3	3.2	116	SP-55-171-0160	S55013-0160	ER-39-710-16
18.0	22.9	2.2	018	SP-55-171-0180A	S55015-0180	ER-39-711-18
18.0	25.3	3.2	118	SP-55-171-0180	S55013-0180	ER-39-710-18
20.0	27.3	3.2	118	SP-55-171-0200B	S55015-0200	ER-39-711-20
20.0	30.7	4.2	214	SP-55-171-0200	S55013-0200	ER-39-710-20
22.0	29.3	3.2	120	SP-55-171-0220B	S55015-0220	ER-39-711-22
22.0	32.7	4.2	215	SP-55-171-0220	S55013-0220	ER-39-710-22
25.0	32.3	3.2	122	SP-55-171-0250B	S55015-0250	ER-39-711-25
25.0	35.7	4.2	217	SP-55-171-0250	S55013-0250	ER-39-710-25
28.0	35.3	3.2	124	SP-55-171-0280B	S55015-0280	ER-39-711-28

PTFE Seal - 171

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
28.0	38.7	4.2	219	SP-55-171-0280	S55013-0280	ER-39-710-28
30.0	37.3	3.2	125	SP-55-171-0300B	S55015-0300	ER-39-711-30
30.0	40.7	4.2	220	SP-55-171-0300	S55013-0300	ER-39-710-30
32.0	39.3	3.2	126	SP-55-171-0320B	S55015-0320	ER-39-711-32
32.0	42.7	4.2	221	SP-55-171-0320	S55013-0320	ER-39-710-32
35.0	42.3	3.2	128	SP-55-171-0350B	S55015-0350	ER-39-711-35
35.0	45.7	4.2	222	SP-55-171-0350	S55013-0350	ER-39-710-35
36.0	43.3	3.2	129	SP-55-171-0360B	S55015-0360	ER-39-711-36
36.0	46.7	4.2	223	SP-55-171-0360	S55013-0360	ER-39-710-36
38.0	48.7	4.2	223	SP-55-171-0380C	S55015-0380	ER-39-711-38
38.0	53.1	6.3	327	SP-55-171-0380	S55013-0380	ER-39-710-38
40.0	50.7	4.2	224	SP-55-171-0400C	S55015-0400	ER-39-711-40
40.0	55.1	6.3	328	SP-55-171-0400	S55013-0400	ER-39-710-40
42.0	52.7	4.2	225	SP-55-171-0420C	S55015-0420	ER-39-711-42
42.0	57.1	6.3	328	SP-55-171-0420	S55013-0420	ER-39-710-42
45.0	55.7	4.2	226	SP-55-171-0450C	S55015-0450	ER-39-711-45
45.0	60.1	6.3	329	SP-55-171-0450	S55013-0450	ER-39-710-45
50.0	60.7	4.2	227	SP-55-171-0500C	S55015-0500	ER-39-711-50
50.0	65.1	6.3	331	SP-55-171-0500	S55013-0500	ER-39-710-50
55.0	65.7	4.2	229	SP-55-171-0550C	S55015-0550	ER-39-711-55
55.0	70.1	6.3	332	SP-55-171-0550	S55013-0550	ER-39-710-55
56.0	66.7	4.2	229	SP-55-171-0560C	S55015-0560	ER-39-711-56
56.0	71.1	6.3	333	SP-55-171-0560	S55013-0560	ER-39-710-56
60.0	70.7	4.2	230	SP-55-171-0600C	S55015-0600	ER-39-711-60
60.0	75.1	6.3	334	SP-55-171-0600	S55013-0600	ER-39-710-60
63.0	78.1	6.3	335	SP-55-171-0630	S55013-0630	ER-39-710-63
65.0	80.1	6.3	336	SP-55-171-0650	S55013-0650	ER-39-710-65
70.0	85.1	6.3	337	SP-55-171-0700	S55013-0700	ER-39-710-70
75.0	90.1	6.3	339	SP-55-171-0750	S55013-0750	ER-39-710-75
80.0	95.1	6.3	340	SP-55-171-0800	S55013-0800	ER-39-710-80
85.0	100.1	6.3	342	SP-55-171-0850	S55013-0850	ER-39-710-85
90.0	105.1	6.3	344	SP-55-171-0900	S55013-0900	ER-39-710-90
95.0	110.1	6.3	345	SP-55-171-0950	S55013-0950	ER-39-710-95
100.0	115.1	6.3	347	SP-55-171-1000	S55013-1000	ER-39-710-100
105.0	120.1	6.3	348	SP-55-171-1050	S55013-1050	ER-39-710-105
110.0	125.1	6.3	350	SP-55-171-1100	S55013-1100	ER-39-710-110
115.0	130.1	6.3	351	SP-55-171-1150	S55013-1150	ER-39-710-115
120.0	135.1	6.3	353	SP-55-171-1200	S55013-1200	ER-39-710-120
125.0	140.1	6.3	355	SP-55-171-1250	S55013-1250	ER-39-710-125
130.0	145.1	6.3	356	SP-55-171-1300	S55013-1300	ER-39-710-130

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
135.0	150.1	6.3	358	SP-55-171-1350	S55013-1350	ER-39-710-135
140.0	155.1	6.3	359	SP-55-171-1400	S55013-1400	ER-39-710-140
150.0	165.1	6.3	362	SP-55-171-1500	S55013-1500	ER-39-710-150
160.0	175.1	6.3	363	SP-55-171-1600	S55013-1600	ER-39-710-160
170.0	185.1	6.3	365	SP-55-171-1700	S55013-1700	ER-39-710-170
180.0	195.1	6.3	366	SP-55-171-1800	S55013-1800	ER-39-710-180
190.0	205.1	6.3	368	SP-55-171-1900	S55013-1900	ER-39-710-190
195.0	210.1	6.3	369	SP-55-171-1950	S55013-1950	ER-39-710-195
200.0	220.5	8.1	445	SP-55-171-2000	S55013-2000	ER-39-710-200
210.0	230.5	8.1	446	SP-55-171-2100	S55013-2100	ER-39-710-210
220.0	240.5	8.1	447	SP-55-171-2200	S55013-2200	ER-39-710-220
225.0	245.5	8.1	447	SP-55-171-2250	S55013-2250	ER-39-710-225
230.0	250.5	8.1	448	SP-55-171-2300	S55013-2300	ER-39-710-230
240.0	260.5	8.1	449	SP-55-171-2400	S55013-2400	ER-39-710-240
250.0	270.5	8.1	449	SP-55-171-2500	S55013-2500	ER-39-710-250
260.0	284.0	8.1	450	SP-55-171-2600	S55013-2600	ER-39-710-260
270.0	294.0	8.1	451	SP-55-171-2700	S55013-2700	ER-39-710-270
280.0	304.0	8.1	452	SP-55-171-2800	S55013-2800	ER-39-710-280
290.0	314.0	8.1	453	SP-55-171-2900	S55013-2900	ER-39-710-290
300.0	324.0	8.1	454	SP-55-171-3000	S55013-3000	ER-39-710-300
310.0	334.0	8.1	454	SP-55-171-3100	S55013-3100	ER-39-710-310
320.0	344.0	8.1	455	SP-55-171-3200	S55013-3200	ER-39-710-320
330.0	354.0	8.1	456	SP-55-171-3300	S55013-3300	ER-39-710-330
340.0	364.0	8.1	457	SP-55-171-3400	S55013-3400	ER-39-710-340
350.0	374.0	8.1	458	SP-55-171-3500	S55013-3500	ER-39-710-350
360.0	384.0	8.1	458	SP-55-171-3600	S55013-3600	ER-39-710-360
370.0	394.0	8.1	459	SP-55-171-3700	S55013-3700	ER-39-710-370
380.0	404.0	8.1	460	SP-55-171-3800	S55013-3800	ER-39-710-380
390.0	414.0	8.1	461	SP-55-171-3900	S55013-3900	ER-39-710-390
400.0	424.0	8.1	461	SP-55-171-4000	S55013-4000	ER-39-710-400
410.0	434.0	8.1	462	SP-55-171-4100	S55013-4100	ER-39-710-410
420.0	444.0	8.1	463	SP-55-171-4200	S55013-4200	ER-39-710-420
430.0	454.0	8.1	464	SP-55-171-4300	S55013-4300	ER-39-710-430
440.0	464.0	8.1	464	SP-55-171-4400	S55013-4400	ER-39-710-440
450.0	474.0	8.1	465	SP-55-171-4500	S55013-4500	ER-39-710-450
460.0	484.0	8.1	466	SP-55-171-4600	S55013-4600	ER-39-710-460
470.0	494.0	8.1	467	SP-55-171-4700	S55013-4700	ER-39-710-470
480.0	504.0	8.1	468	SP-55-171-4800	S55013-4800	ER-39-710-480
490.0	514.0	8.1	469	SP-55-171-4900	S55013-4900	ER-39-710-490
500.0	524.0	8.1	469	SP-55-171-5000	S55013-5000	ER-39-710-500

PTFE Seal - 171

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	O-RING No.	Reference (For order processing)	Reference	Reference
510.0	534.0	8.1	469	SP-55-171-5100	S55013-5100	ER-39-710-510
520.0	544.0	8.1	470	SP-55-171-5200	S55013-5200	ER-39-710-520
530.0	554.0	8.1	470	SP-55-171-5300	S55013-5300	ER-39-710-530
540.0	564.0	8.1	471	SP-55-171-5400	S55013-5400	ER-39-710-540
550.0	574.0	8.1	471	SP-55-171-5500	S55013-5500	ER-39-710-550
560.0	584.0	8.1	471	SP-55-171-5600	S55013-5600	ER-39-710-560
570.0	594.0	8.1	472	SP-55-171-5700	S55013-5700	ER-39-710-570
580.0	604.0	8.1	472	SP-55-171-5800	S55013-5800	ER-39-710-580
590.0	614.0	8.1	473	SP-55-171-5900	S55013-5900	ER-39-710-590
600.0	624.0	8.1	473	SP-55-171-6000	S55013-6000	ER-39-710-600
610.0	634.0	8.1	473	SP-55-171-6100	S55013-6100	ER-39-710-610
620.0	644.0	8.1	474	SP-55-171-6200	S55013-6200	ER-39-710-620
630.0	654.0	8.1	474	SP-55-171-6300	S55013-6300	ER-39-710-630
640.0	664.0	8.1	475	SP-55-171-6400	S55013-6400	ER-39-710-640
650.0	677.3	9.5	665 * 8.4	SP-55-171-6500	S55013-6500	ER-39-710-650
660.0	687.3	9.5	675 * 8.4	SP-55-171-6600	S55013-6600	ER-39-710-660
670.0	697.3	9.5	685 * 8.4	SP-55-171-6700	S55013-6700	ER-39-710-670
680.0	707.3	9.5	695 * 8.4	SP-55-171-6800	S55013-6800	ER-39-710-680
690.0	717.3	9.5	705 * 8.4	SP-55-171-6900	S55013-6900	ER-39-710-690
700.0	727.3	9.5	715 * 8.4	SP-55-171-7000	S55013-7000	ER-39-710-700
710.0	737.3	9.5	725 * 8.4	SP-55-171-7100	S55013-7100	ER-39-710-710

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. SP-55 - 17 1 - 0040

Seal ring material code

Seal profile

O ring material code

Rod diameter x 10

SPEC SEAL

Seals & O-rings Specialist

Rod U-Cup

Rod Seals

RS, TTI (Metric Size)

(Size list on page 207-215)

RS, TTI

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-40 +95	0.6

- Good pressure-adapted sealing effect.
- Good resistance to clearance extrusion.
- Simple installation.
- Lower friction in the low pressure range compared with double-lipped version.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Pressure	Clearance F Max	
Bar	d <60 mm	d > 60 mm
50	0.40	0.50
100	0.30	0.40
200	0.20	0.30
300	0.15	0.20
400	0.10	0.15

Rod Seals

UHR (Metric Size)

(Size list on page 207-215)

UHR

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-40 +95	0.6

- Good pressure-adapted sealing effect.
- Good resistance to clearance extrusion.
- Simple installation.
- Lower friction in the low pressure range compared with double-lipped version.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Rod U-Cup

Rod Seals

UNR (Metric Size)

UNR

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-40 +95	0.6

- Good pressure-adapted sealing effect.
- Good resistance to clearance extrusion.
- Simple installation.
- Lower friction in the low pressure range compared with double-lipped version.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
6.0	12.0	5.5	5.8	RS 006-012/1		
6.0	14.0	5.7	6.3	RS 006-014		
8.0	14.4	9.5	10.5	RS 008-014.4/1		
8.0	16.0	5.7	6.3	RS 008-016		
8.0	18.0	8.0	9.0	RS 008-018/1		
10.0	18.0	5.7	6.3	RS 010-018		
10.0	18.0	5.8	6.3		UC 010-018-05.8 TTI	
10.0	20.0	7.2	8.0	RS 010-020		
10.0	20.0	8.0	9.0	RS 010-020/1		
12.0	18.0	5.8	6.3		UC 012-018-05.8 TTI	
12.0	20.0	5.7	6.4	RS 012-020		
12.0	20.0	5.8	6.3		UC 012-020-05.8 TTI	
12.0	22.0	7.0	8.0		UC 012-022-07 TTI	
12.0	22.0	7.2	8.0	RS 012-022		
12.0	22.0	8.0	9.0	RS 012-022/1		
14.0	22.0	5.7	6.3	RS 014-022		
14.0	22.0	5.8	6.3		UC 014-022-05.8 TTI	
14.0	24.0	7.0	8.0		UC 014-024-07 TTI	
14.0	24.0	7.2	8.0	RS 014-024		
14.0	24.0	8.0	9.0	RS 014-024/1		
15.0	23.0	5.7	6.3	RS 015-023		
15.0	23.0	5.8	6.3		UC 015-023-05.8 TTI	
15.0	25.0	5.7	6.3	RS 015-025/1		
16.0	20.6	3.3	3.6	RS 016-020.6		
16.0	22.0	5.5	6.0		UC 016-022-05.5 TTI	
16.0	24.0	5.7	6.3	RS 016-024		
16.0	24.0	5.8	6.3		UC 016-024-05.8 TTI	
16.0	24.0	6.2	7.0	RS 016-024/1		
16.0	26.0	7.0	8.0		UC 016-026-07 TTI	
16.0	26.0	7.2	8.0	RS 016-026		
16.0	26.0	8.0	9.0	RS 016-026/1		
16.0	26.0	9.0	10.0	RS 016-026/2		
18.0	24.0	4.7	5.2	RS 018-024		
18.0	26.0	5.2	5.7			UHR-018
18.0	26.0	5.7	6.3	RS 018-026		
18.0	26.0	5.8	6.3		UC 018-026-05.8 TTI	
18.0	26.0	8.0	9.0	RS 018-026/1		
18.0	28.0	7.0	8.0		UC 018-028-07 TTI	
18.0	28.0	7.2	8.0	RS 018-028		
18.0	28.0	8.0	9.0	RS 018-028/1		
20.0	26.0	5.0	5.5		UC 020-026-05 TTI	
20.0	26.0	5.0	6.0	RS 020-026/1		
20.0	28.0	5.2	5.7			UHR-020
20.0	28.0	5.7	6.3	RS 020-028		
20.0	28.0	5.8	6.3		UC 020-028-05.8 TTI	

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
20.0	28.0	6.2	7.0	RS 020-028/1		
20.0	28.0	7.0	8.0		UC 020-028-07 TTI	
20.0	28.0	7.2	8.0	RS 020-028/2		
20.0	30.0	7.0	8.0		UC 020-030-07 TTI	
20.0	30.0	7.2	8.0	RS 020-030		
20.0	30.0	8.0	9.0	RS 020-030/2		
20.0	30.0	10.0	11.0	RS 020-030/1	UC 020-030-10 TTI	
20.0	35.0	10.0	11.0	RS 020-035		
22.0	30.0	5.7	6.3	RS 022-030		
22.0	30.0	5.8	6.3		UC 022-030-05.8 TTI	
22.0	32.0	7.0	8.0		UC 022-032-07 TTI	
22.0	32.0	7.2	8.0	RS 022-032		
22.0	32.0	8.0	9.0	RS 022-032/1		
22.0	32.0	10.0	11.0	RS 022-032/2	UC 022-032-10 TTI	
22.4	30.0	5.2	5.7			UHR-022.4
24.0	34.0	7.2	8.0	RS 024-034		
24.0	34.0	8.5	9.5	RS 024-034/1		
25.0	33.0	5.7	6.3	RS 025-033		
25.0	33.0	5.8	6.3		UC 025-033-05.8 TTI	
25.0	33.0	6.3	7.0	RS 025-033/3		
25.0	33.0	7.0	8.0		UC 025-033-07 TTI	
25.0	33.0	7.2	8.0	RS 025-033/1		
25.0	33.0	10.0	11.0	RS 025-033/2		
25.0	35.0	7.0	8.0		UC 025-035-07 TTI	
25.0	35.0	7.2	8.0	RS 025-035		
25.0	35.0	8.0	9.0	RS 025-035/2	UC 025-035-08 TTI	
25.0	35.0	10.0	11.0	RS 025-035/1	UC 025-035-10 TTI	
25.0	38.0	9.0	10.0	RS 025-038/1		
25.0	40.0	10.0	11.0	RS 025-040		
28.0	35.5	5.2	5.7			UHR-028
28.0	36.0	5.7	6.3	RS 028-036		
28.0	36.0	5.8	6.3		UC 028-036-05.8 TTI	
28.0	38.0	7.0	8.0		UC 028-038-07 TTI	
28.0	38.0	7.2	8.0	RS 028-038		
28.0	38.0	8.0	9.0	RS 028-038/1		
28.0	38.0	10.0	11.0	RS 028-038/2		
28.0	40.0	8.5	9.5	RS 028-040		
28.0	40.0	10.0	11.0	RS 028-040/1		
28.0	43.0	11.5	12.5	RS 028-043		
29.0	35.0	5.6	6.3	RS 029-035		
30.0	38.0	5.7	6.3	RS 030-038		
30.0	38.0	5.8	6.3		UC 030-038-05.8 TTI	
30.0	38.0	8.0	9.0	RS 030-038/1	UC 030-038-08 TTI	
30.0	40.0	5.7	6.3	RS 030-040/3		
30.0	40.0	7.0	8.0		UC 030-040-07 TTI	

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
30.0	40.0	7.2	8.0	RS 030-040		
30.0	40.0	9.5	10.5	RS 030-040/2		
30.0	40.0	10.0	11.0	RS 030-40/1	UC 030-040-10 TTI	
30.0	43.0	9.0	10.0	RS 030-043		
30.0	45.0	8.0	9.0	RS 030-045/1		
30.0	45.0	10.0	11.0	RS 030-045		
32.0	40.0	5.7	6.3	RS 032-040		
32.0	40.0	5.8	6.3		UC 032-040-05.8 TTI	
32.0	40.0	8.0	9.0	RS 032-040/1	UC 032-040-08 TTI	
32.0	42.0	7.0	8.0		UC 032-042-07 TTI	
32.0	42.0	7.2	8.0	RS 032-042		
32.0	42.0	10.0	11.0	RS 032-042/1	UC 032-042-10 TTI	
32.0	42.5	8.0	9.0	RS 032-042.5/1		
32.0	45.0	9.5	10.5	RS 032-045/1		
32.0	47.0	10.0	11.0	RS 032-047/1		
33.0	43.0	10.0	11.0	RS 033-043/1		
35.0	43.0	5.7	6.3	RS 035-043		
35.0	43.0	5.8	6.3		UC 035-043-05.8 TTI	
35.0	43.0	8.0	9.0	RS 035-043/1	UC 035-043-08 TTI	
35.0	45.0	7.0	8.0		UC 035-045-07 TTI	
35.0	45.0	7.2	8.0	RS 035-045		
35.0	45.0	10.0	11.0	RS 035-045/1	UC 035-045-10 TTI	
35.0	45.0	12.5	13.5	RS 035-045/2		
35.0	46.0	8.0	9.0	RS 035-046		
35.0	46.0	9.0	10.0	RS 035-046/1		
35.0	50.0	10.0	11.0	RS 035-050		
35.0	55.0	12.0	13.0	RS 035-055		
35.5	45.0	6.5	7.0			UHR-035.5
36.0	44.0	5.8	6.3		UC 036-044-05.8 TTI	
36.0	46.0	7.0	8.0		UC 036-046-07 TTI	
36.0	46.0	7.2	8.0	RS 036-046		
36.0	46.0	10.0	11.0	RS 036-046/1	UC 036-046-10 TTI	
36.0	48.0	7.0	8.0	RS 036-048/1		
36.0	48.0	8.0	9.0	RS 036-048		
36.0	51.0	10.0	11.0	RS 036-051		
36.0	51.0	11.5	12.5	RS 036-051/1		
37.0	45.0	5.7	6.3	RS 037-045		
38.0	44.5	4.7	5.3	RS 038-044.5		
38.0	45.0	5.0	5.5	RS 038-045		
38.0	45.0	6.2	7.0	RS 038-045/1		
40.0	48.0	5.7	6.3	RS 040-048		
40.0	48.0	5.8	6.3		UC 040-048-05.8 TTI	
40.0	48.0	8.0	9.0		UC 040-048-08 TTI	
40.0	49.5	9.5	10.5	RS 040-049.5/1		
40.0	50.0	6.5	7.0			UHR-040

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
40.0	50.0	7.0	8.0		UC 040-050-07 TTI	
40.0	50.0	7.2	8.0	RS 040-050		
40.0	50.0	10.0	11.0	RS 040-050/1	UC 040-050-10 TTI	
40.0	50.0	12.5	13.5	RS 040-050/2		
40.0	52.0	8.0	9.0	RS 040-052		
40.0	55.0	10.0	11.0	RS 040-055		
40.0	55.0	11.5	12.5	RS 040-055/1		
40.0	60.0	12.0	13.0	RS 040-060		
42.0	62.0	10.0	11.0	RS 042-062/1		
42.0	62.0	12.0	13.0	RS 042-062		
45.0	53.0	5.7	6.3	RS 045-053		
45.0	53.0	5.8	6.3		UC 045-053-05.8 TTI	
45.0	53.0	8.0	9.0		UC 045-053-08 TTI	
45.0	53.0	10.0	11.0	RS 045-053/2		
45.0	53.0	12.0	13.0	RS 045-053/1		
45.0	55.0	6.5	7.0			UHR-045A
45.0	55.0	7.0	8.0		UC 045-055-07 TTI	
45.0	55.0	7.2	8.0	RS 045-055		
45.0	55.0	10.0	11.0	RS 045-055/1	UC 045-055-10 TTI	
45.0	56.0	7.5	8.0			UHR-045
45.0	57.7	9.5	10.5	RS 045-057.7/1		
45.0	58.0	9.0	10.0	RS 045-058/1		
45.0	60.0	10.0	11.0	RS 045-060		
45.0	60.0	11.5	12.5	RS 045-060/1		
45.0	65.0	10.0	11.0	RS 045-065/2		
45.0	65.0	12.0	13.0	RS 045-065		
45.0	65.0	13.5	14.5	RS 045-065/1		
46.0	56.0	7.2	8.0	RS 046-056		
50.0	60.0	6.5	7.0			UHR-050
50.0	60.0	7.0	8.0		UC 050-060-07 TTI	
50.0	60.0	7.2	8.0	RS 050-060		
50.0	60.0	10.0	11.0	RS 050-060/1	UC 050-060-10 TTI	
50.0	60.0	12.0	13.0	RS 050-060/2	UC 050-060-12 TTI	
50.0	62.0	8.0	9.0	RS 050-062		
50.0	62.7	9.5	10.5	RS 050-062.7/1		
50.0	65.0	10.0	11.0	RS 050-065	UC 050-065-10 TTI	
50.0	65.0	11.5	12.5	RS 050-065/1	UC 050-065-11.5 TTI	
50.0	68.0	9.0	10.0	RS 050-068/1		
50.0	70.0	10.0	11.0	RS 050-070/1		
50.0	70.0	12.0	13.0	RS 050-070		
50.0	70.0	13.5	14.5	RS 050-070/2		
55.0	63.0	12.0	13.0	RS 055-063/1		
55.0	65.0	7.0	8.0		UC 055-065-07 TTI	
55.0	65.0	7.2	8.0	RS 055-065		
55.0	65.0	10.0	11.0	RS 055-065/1	UC 055-065-10 TTI	

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
55.0	65.0	12.0	13.0	RS 055-065/2	UC 055-065-12 TTI	
55.0	65.0	13.5	14.5	RS 055-065/3		
55.0	67.0	10.0	11.0	RS 055-067/1		
55.0	70.0	10.0	11.0	RS 055-070	UC 055-070-10 TTI	
55.0	70.0	12.0	13.0	RS 055-070/1	UC 055-070-12 TTI	
55.0	75.0	12.0	13.0	RS 055-075		
55.0	75.0	13.5	14.5	RS 055-075/1		
56.0	66.0	6.5	7.0			UHR-056
56.0	66.0	10.0	11.0	RS 056-066/1	UC 056-066-10 TTI	
56.0	71.0	10.0	11.0	RS 056-071	UC 056-071-10 TTI	
56.0	71.0	11.5	12.5	RS 056-071/1	UC 056-071-11.5 TTI	
56.0	76.0	12.0	13.0	RS 056-076		
56.0	76.0	13.5	14.5	RS 056-076/1		
56.0	76.0	15.0	16.0	RS 056-076/2		
60.0	70.0	7.0	8.0		UC 060-070-07 TTI	
60.0	70.0	7.2	8.0	RS 060-070		
60.0	70.0	10.0	11.0	RS 060-070/2	UC 060-070-10 TTI	
60.0	70.0	12.0	13.0	RS 060-070/1	UC 060-070-12 TTI	
60.0	72.0	8.0	9.0	RS 060-072		
60.0	72.0	9.0	10.0	RS 060-072/1		
60.0	75.0	10.0	11.0	RS 060-075	UC 060-075-10 TTI	
60.0	75.0	12.0	13.0	RS 060-075/1	UC 060-075-12 TTI	
60.0	77.0	11.0	12.0	RS 060-077		
60.0	80.0	12.0	13.0	RS 060-080		
60.0	80.0	13.5	14.5	RS 060-080/1		
61.0	69.0	7.5	8.5	RS 061-069/1		
62.0	74.0	13.0	14.0	RS 062-074/1		
63.0	73.0	6.5	7.0			UHR-063
63.0	73.0	10.0	11.0	RS 063-073/1	UC 063-073-10 TTI	
63.0	73.0	12.0	13.0	RS 063-073/2		
63.0	78.0	10.0	11.0	RS 063-078	UC 063-078-10 TTI	
63.0	78.0	11.5	12.5	RS 063-078/2	UC 063-078-11.5 TTI	
63.0	78.0	12.0	13.0	RS 063-078/1		
63.0	83.0	12.0	13.0	RS 063-083		
63.0	83.0	13.5	14.5	RS 063-083/1		
63.0	83.0	15.0	16.0	RS 063-083/2		
65.0	75.0	10.0	11.0	RS 065-075/3	UC 065-075-10 TTI	
65.0	75.0	12.0	13.0	RS 065-075/1	UC 065-075-12 TTI	
65.0	75.0	13.5	14.5	RS 065-075/2		
65.0	77.0	9.0	10.0	RS 065-077/1		
65.0	80.0	10.0	11.0	RS 065-080	UC 065-080-10 TTI	
65.0	80.0	12.0	13.0	RS 065-080/1	UC 065-080-12 TTI	
65.0	85.0	12.0	13.0	RS 065-085		
65.0	85.0	13.5	14.5	RS 065-085/1		
67.0	77.0	6.5	7.0			UHR-067

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
70.0	80.0	6.0	6.5	RS 070-080/3		
70.0	80.0	7.0	8.0		UC 070-080-07 TTI	
70.0	80.0	7.2	8.0	RS 070-080		
70.0	80.0	10.0	11.0	RS 070-080/2	UC 070-080-10 TTI	
70.0	80.0	12.0	13.0	RS 070-080/1	UC 070-080-12 TTI	
70.0	85.0	10.0	11.0	RS 070-085	UC 070-085-10 TTI	
70.0	85.0	11.5	12.5	RS 070-085/2	UC 070-085-11.5 TTI	
70.0	85.0	12.0	13.0	RS 070-085/1		
70.0	90.0	12.0	13.0	RS 070-090		
70.0	90.0	13.5	14.5	RS 070-090/1		
70.0	90.0	15.0	16.0	RS 070-090/2		
71.0	80.0	6.5	7.0			UHR-071
73.0	82.5	7.2	8.0	RS 073-082.5		
75.0	85.0	7.0	8.0		UC 075-085-07 TTI	
75.0	85.0	7.2	8.0	RS 075-085		
75.0	85.0	12.0	13.0	RS 075-085/1	UC 075-085-12 TTI	
75.0	90.0	10.0	11.0	RS 075-090	UC 075-090-10 TTI	
75.0	90.0	12.0	13.0	RS 075-090/1	UC 075-090-12 TTI	
75.0	95.0	12.0	13.0	RS 075-095		
75.0	95.0	13.5	14.5	RS 075-095/1		
76.0	84.0	7.5	8.5	RS 076-084/1		
80.0	90.0	6.5	7.0			UHR-080
80.0	90.0	7.0	8.0		UC 080-090-07 TTI	
80.0	90.0	7.2	8.0	RS 080-090		
80.0	90.0	12.0	13.0	RS 080-090/2	UC 080-090-12 TTI	
80.0	90.0	14.0	15.0	RS 080-090/1		
80.0	95.0	10.0	11.0	RS 080-095	UC 080-095-10 TTI	
80.0	95.0	11.5	12.5	RS 080-095/1	UC 080-095-11.5 TTI	
80.0	95.0	12.0	13.0	RS 080-095/2		
80.0	100.0	12.0	13.0	RS 080-100		
80.0	100.0	13.5	14.5	RS 080-100/1		
80.0	100.0	15.0	16.0	RS 080-100/2	UC 080-100-15 TTI	
85.0	95.0	7.0	8.0		UC 085-095-07 TTI	
85.0	95.0	7.2	8.0	RS 085-095		
85.0	95.0	12.0	13.0		UC 085-095-12 TTI	
85.0	100.0	9.5	10.0			UHR-085
85.0	100.0	11.0	12.0	RS 085-100/1		
85.0	100.0	11.5	12.5	RS 085-100/3	UC 085-100-11.5 TTI	
85.0	100.0	12.0	13.0	RS 085-100/2		
85.0	105.0	12.0	13.0	RS 085-105		
85.0	105.0	13.5	14.5	RS 085-105/1		
90.0	100.0	11.5	12.5	RS 090-100/1		
90.0	105.0	8.5	9.5	RS 090-105/2		
90.0	105.0	9.5	10.0			UHR-090
90.0	105.0	9.5	10.5	RS 090-105/4		

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
90.0	105.0	11.5	12.5	RS 090-105/3	UC 090-105-11.5 TTI	
90.0	105.0	12.0	13.0	RS 090-105/1		
90.0	110.0	12.0	13.0	RS 090-110		
90.0	110.0	15.0	16.0	RS 090-110/1	UC 090-110-15 TTI	
91.0	99.0	7.5	8.5	RS 091-099/1		
93.0	104.0	10.0	11.0	RS 093-104/1		
95.0	105.0	10.0	11.0	RS 095-105/1	UC 095-105-10 TTI	
95.0	115.0	12.0	13.0	RS 095-115		
100.0	110.0	11.5	12.5		UC 100-110-11.5 TTI	
100.0	110.0	14.0	15.0	RS 100-110/1		
100.0	113.0	12.5	13.5	RS 100-113/1		
100.0	115.0	9.5	10.0			UHR-100
100.0	115.0	10.5	11.5	RS 100-115/2		
100.0	115.0	12.0	13.0	RS 100-115/1	UC 100-115-12 TTI	
100.0	120.0	12.0	13.0	RS 100-120		
100.0	120.0	13.5	14.5	RS 100-120/1		
100.0	120.0	15.0	16.0	RS 100-120/2	UC 100-120-15 TTI	
100.0	125.0	19.0	20.0	RS 100-125		
105.0	115.0	10.0	11.0	RS 105-115/1	UC 105-115-10 TTI	
105.0	115.0	11.5	12.5	RS 105-115/2	UC 105-115-11.5 TTI	
105.0	115.0	13.5	14.5	RS 105-115/3		
105.0	125.0	12.0	13.0	RS 105-125		
110.0	125.0	11.0	12.0	RS 110-125/1		
110.0	125.0	15.0	16.0	RS 110-125/2		
110.0	130.0	12.0	13.0	RS 110-130	UC 110-130-12 TTI	
110.0	130.0	15.0	16.0	RS 110-130/1	UC 110-130-15 TTI	
110.0	135.0	19.0	20.0	RS 110-135		
112.0	125.0	9.0	9.5			UHR-112
115.0	135.0	12.0	13.0	RS 115-135	UC 115-135-12 TTI	
120.0	130.0	7.2	8.0	RS 120-130/1		
120.0	130.0	11.5	12.5	RS 120-130/2	UC 120-130-11.5 TTI	
120.0	132.0	10.0	11.0	RS 120-132/1		
120.0	135.0	11.5	12.5	RS 120-135/1	UC 120-135-11.5 TTI	
120.0	135.0	15.0	16.0	RS 120-135/2		
120.0	140.0	12.0	13.0	RS 120-140		
120.0	140.0	15.0	16.0	RS 120-140/1	UC 120-140-15 TTI	
125.0	140.0	9.5	10.0			UHR-125
125.0	145.0	12.0	13.0	RS 125-145	UC 125-145-12 TTI	
125.0	145.0	15.0	16.0	RS 125-145/1	UC 125-145-15 TTI	
125.0	150.0	14.0	15.0	RS 125-150		
125.0	150.0	19.0	20.0	RS 125-150/1	UC 125-150-19 TTI	
125.0	155.0	18.0	19.0	RS 125-155		
127.0	139.7	9.2	10.0	RS 127-139.7/1		
130.0	140.0	7.2	8.0	RS 130-140		
130.0	145.0	12.0	13.0	RS 130-145		

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
130.0	145.0	14.0	15.0	RS 130-145/2		
130.0	145.0	15.0	16.0	RS 130-145/1	UC 130-145-15 TTI	
130.0	150.0	12.0	13.0	RS 130-150	UC 130-150-12 TTI	
130.0	150.0	15.0	16.0	RS 130-150/1	UC 130-150-15 TTI	
140.0	150.0	11.5	12.5	RS 140-150/1		
140.0	155.0	9.5	10.0			UHR-140
140.0	155.0	12.0	13.0	RS 140-155/1		
140.0	160.0	12.0	13.0	RS 140-160	UC 140-160-12 TTI	
140.0	160.0	13.5	14.5	RS 140-160/1		
140.0	160.0	15.0	16.0	RS 140-160/2	UC 140-160-15 TTI	
140.0	165.0	19.0	20.0	RS 140-165	UC 140-165-19 TTI	
143.0	151.0	13.5	14.5	RS 143-151		
145.0	157.7	9.0	10.0	RS 145-157.7/1		
147.0	160.0	12.0	13.0	RS 147-160/1		
150.0	170.0	12.0	13.0	RS 150-170	UC 150-170-12 TTI	
150.0	170.0	13.5	14.5	RS 150-170/1		
150.0	170.0	15.0	16.0	RS 150-170/2	UC 150-170-15 TTI	
160.0	175.0	9.5	10.0			UHR-160
160.0	180.0	12.0	13.0	RS 160-180	UC 160-180-12 TTI	
160.0	180.0	15.0	16.0	RS 160-180/1	UC 160-180-15 TTI	
160.0	185.0	16.0	17.0			UNR-160
160.0	185.0	19.0	20.0	RS 160-185		
165.0	180.0	9.5	10.0			UHR-165
165.0	195.0	20.0	21.0	RS 165-195		
170.0	190.0	12.0	13.0	RS 170-190	UC 170-190-12 TTI	
170.0	190.0	15.0	16.0	RS 170-190/1	UC 170-190-15 TTI	
170.0	195.0	16.0	17.0			UNR-170
180.0	200.0	12.0	13.0	RS 180-200	UC 180-200-12 TTI	
180.0	200.0	12.5	13.0			UHR-180
180.0	200.0	15.0	16.0	RS 180-200/1	UC 180-200-15 TTI	
180.0	200.0	19.0	20.0	RS 180-200/2	UC 180-200-19 TTI	
180.0	205.0	16.0	17.0			UNR-180
190.0	210.0	12.0	13.0	RS 190-210	UC 190-210-12 TTI	
190.0	210.0	15.0	16.0	RS 190-210/1	UC 190-210-15 TTI	
190.0	215.0	16.0	17.0			UNR-190
198.0	207.6	7.3	7.5	RS 198-207.6		
200.0	212.0	15.0	16.0	RS 200-212/1		
200.0	220.0	12.0	13.0	RS 200-220		
200.0	220.0	12.5	13.0			UHR-200
200.0	220.0	15.0	16.0	RS 200-220/1	UC 200-220-15 TTI	
200.0	225.0	16.0	17.0			UNR-200
200.0	225.0	19.0	20.0	RS 200-225		
210.0	230.0	12.0	13.0	RS 210-230		
210.0	230.0	14.0	15.0	RS 210-230/1		
210.0	230.0	15.0	16.0	RS 210-230/2	UC 210-230-15 TTI	

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
210.0	235.0	24.5	26.0	RS 210-235/1		
212.0	237.0	19.0	20.0			UNR-212
220.0	240.0	12.0	13.0	RS 220-240	UC 220-240-12 TTI	
220.0	240.0	15.0	16.0	RS 220-240/1	UC 220-240-15 TTI	
220.0	250.0	18.0	19.0	RS 220-250		
224.0	249.0	19.0	20.0			UNR-224
230.0	250.0	12.0	13.0	RS 230-250	UC 230-250-12 TTI	
230.0	255.0	19.0	20.0			UNR-230
230.0	260.0	23.7	25.0	RS 230-260		
236.0	261.0	19.0	20.0			UNR-236
240.0	260.0	12.0	13.0	RS 240-260	UC 240-260-12 TTI	
240.0	260.0	15.0	16.0	RS 240-260/1	UC 240-260-15 TTI	
240.0	270.0	18.0	19.0	RS 240-270	UC 240-270-18 TTI	
250.0	270.0	12.0	13.0	RS 250-270	UC 250-270-12 TTI	
250.0	270.0	15.0	16.0	RS 250-270/1	UC 250-270-15 TTI	
250.0	275.0	19.0	20.0			UNR-250
250.0	280.0	21.5	23.0		UC 250-280-21.5 TTI	
250.0	280.0	22.0	23.0	RS 250-280		
265.0	295.0	19.0	20.0			UNR-265
270.0	300.0	18.0	19.0	RS 270-300	UC 270-300-18 TTI	
270.0	300.0	19.0	20.0			UNR-270
280.0	305.0	15.0	16.0	RS 280-305/1		
280.0	310.0	19.0	20.0			UNR-280
280.0	310.0	23.5	25.0		UC 280-310-23.5 TTI	
280.0	310.0	24.0	25.0	RS 280-310		

* For order processing, the computer code will be e.g. UC 006-012-05.5 RS, UC 010-018-05.8 TTI

Rod U-Cup

Rod Seals

RS/L, H-605, TTI/L (Metric Size)

RS/L, H-605, TTI/L

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-45 +110	1

- Twin lip design offering lower friction.
- Good abrasion resistance, wear-resistant.
- Easy installation.
- Range includes standard asian housings.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Pressure	Clearance F Max	
Bar	d <60 mm	d > 60 mm
50	0.40	0.50
100	0.30	0.40
200	0.20	0.30
300	0.15	0.20
400	0.10	0.15

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
10.0	15.0	3.6	4.0		H605-4402300	
12.0	18.0	5.7	6.3		H605-4314900	
12.0	19.0	4.5	5.0		H605-4341600	
12.0	20.0	5.7	6.3		H605-4310900	
12.0	22.0	7.7	9.0		H605-4315000	
12.7	18.0	5.5	6.0		H605-4370400	
13.0	20.0	4.5	5.0		H605-4351600	
14.0	22.0	5.7	6.3		H605-4311000	
14.0	24.0	7.0	8.0			UC 014-024-07 TTI/L
14.0	24.0	7.3	8.0	RS 014-024/L	H605-4310000	
15.0	23.0	5.8	6.3			UC 015-023-05.8 TTI/AI
15.0	26.0	7.0	8.0	RS 015-026/L		UC 015-026-07 TTI/L
15.3	25.5	6.3	7.4		H605-4333800	
15.4	25.5	6.5	7.4	RS 015.4-025.5/L		
16.0	22.0	4.5	5.0		H605-4341700	
16.0	22.0	5.0	6.0		H605-4314100	
16.0	24.0	5.8	6.3		H605-4295200	
16.0	26.0	7.7	9.0		H605-4311100	
18.0	25.0	5.0	6.0		H605-4314200	
18.0	26.0	5.0	5.7		H605-4611000	
18.0	26.0	5.7	6.3		H605-4311200	
18.0	26.0	6.0	7.0		H605-4333900	
18.0	26.0	6.2	7.2			UC 018-026-06.2 TTI/L
18.0	26.0	6.3	7.0	RS 018-026/L1		
18.0	26.0	8.0	9.0	RS 018-026/L		UC 018-026-08 TTI/L
18.0	28.0	7.7	9.0		H605-4305100	
19.5	27.5	8.0	9.0	RS 019.5-027.5/L		
20.0	25.0	3.2	3.5		H605-4332100	
20.0	26.0	5.0	5.5		H605-4315100	
20.0	28.0	5.0	5.7		H605-4611100	
20.0	28.0	5.7	6.3		H605-4362100	
20.0	30.0	6.0	7.0		H605-4611200	
20.0	30.0	7.7	9.0		H605-4305200	
20.0	30.0	10.0	11.0		H605-4310300	
22.0	30.0	5.7	6.3		H605-4305300	
22.0	30.0	6.0	7.0	RS 022-030/L		
22.0	30.0	7.3	8.0		H605-4356800	
22.0	32.0	7.3	8.0		H605-4310800	
22.0	32.0	10.0	11.0		H605-4311300	
22.4	30.0	5.0	5.7		H605-4611300	
25.0	33.0	5.0	5.7		H605-4610100	
25.0	33.0	5.7	6.3		H605-4305400	
25.0	33.0	6.0	7.0	RS 025-033/L2		
25.0	33.0	6.5	7.5	RS 025-033/L1		
25.0	33.0	6.7	7.7			UC 025-033-06.7 TTI/L

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
25.0	33.0	6.8	7.5		H605-4333500	
25.0	33.0	7.0	8.0			UC 025-033-07 TTI/L
25.0	33.0	10.0	11.0		H605-4315200	
25.0	35.0	7.3	8.0	RS 025-035/L	H605-4512000	
25.0	35.0	7.7	9.0		H605-4311400	
25.0	35.0	10.0	11.0		H605-4310500	
25.0	37.0	10.0	11.0		H605-4379900	
25.0	40.0	10.0	11.0		H605-4322900	
26.0	36.0	7.0	8.0		H605-4459400	
28.0	35.5	5.0	5.7		H605-4611400	
28.0	38.0	7.3	8.0		H605-4305500	
28.0	38.0	7.5	8.5	RS 028-038/L		
28.0	43.0	11.4	12.5		H605-4399000	
30.0	38.0	6.3	7.0		H605-4402700	
30.0	40.0	6.0	7.0		H605-4610200	
30.0	40.0	6.5	7.5	RS 030-040/L1		
30.0	40.0	7.0	8.0			UC 030-040-07 TTI/L
30.0	40.0	7.3	8.0	RS 030-040/L		
30.0	40.0	10.0	11.0		H605-4304600	
30.0	42.0	10.9	12.0		H605-4383100	
30.0	50.0	10.0	11.0		H605-4328500	
32.0	40.0	6.0	7.0		H605-4310700	
32.0	40.0	6.7	7.7	RS 032-040/L	H605-4334000	
32.0	40.0	6.9	7.9			UC 032-040-06.9 TTI/L
32.0	40.0	7.7	9.0		H605-4315300	
32.0	41.5	7.9	8.9	RS 032-041.5/L	H605-4334100	UC 032-041.5-07.9 TTI/L
32.0	42.0	5.7	6.3		H605-4360100	
32.0	42.0	6.0	7.0		H605-4616100	
32.0	42.0	7.3	8.0		H605-4374200	
32.0	42.0	10.0	11.0		H605-4305600	
32.0	47.0	9.1	10.0		H605-4329600	
32.0	47.0	10.0	11.0		H605-4338900	
32.0	48.0	10.0	11.0		H605-4492500	
35.0	43.0	6.3	7.0		H605-4402800	
35.0	43.0	7.0	8.0			UC 035-043-07 TTI/L
35.0	43.0	7.2	8.0	RS 035-043/L		
35.0	43.0	8.2	9.0		H605-4309000	
35.0	45.0	6.0	7.0		H605-4611500	
35.0	45.0	7.7	9.0		H605-4314300	
35.0	45.0	10.0	11.0		H605-4305700	
35.0	50.0	9.0	10.0		H605-4611600	
35.0	50.0	10.0	11.0		H605-4322500	
36.0	44.0	6.2	7.2			UC 036-044-06.2 TTI/L
36.0	44.0	6.3	7.0	RS 036-044/L		
36.0	44.0	6.4	7.5		H605-4373900	

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
36.0	44.0	8.2	9.0		H605-4395000	
36.0	46.0	5.7	6.3		H605-4372100	
36.0	46.0	7.3	8.0		H605-4304900	
36.0	46.0	7.5	8.5	RS 036-046/L		
36.0	46.0	10.0	11.0		H605-4305000	
38.0	48.0	10.0	11.0		H605-4515500	
38.0	53.0	10.0	11.0		H605-4480900	
40.0	48.0	8.0	9.0			UC 040-048-08 TTI/AI
40.0	48.0	8.2	9.0		H605-4396800	
40.0	49.5	9.5	10.5	RS 040-049.5/L	H605-4334200	
40.0	50.0	6.0	7.0		H605-4610300	
40.0	50.0	7.0	8.0			UC 040-050-07 TTI/L
40.0	50.0	7.3	8.0	RS 040-050/L	H605-4311600	
40.0	50.0	10.0	11.0		H605-4293800	
40.0	52.0	10.9	12.0		H605-4381800	
40.0	55.0	9.0	10.0		H605-4611700	
40.0	55.0	10.0	11.0	RS 040-055/L	H605-4328300	UC 040-055-10 TTI/L
42.0	50.0	7.5	8.0		H605-4373800	
42.0	50.0	11.5	12.5	RS 042-050/L		UC 042-050-11.5 TTI/L
42.0	52.0	10.0	11.0		H605-4338200	
42.0	53.0	9.0	10.0	RS 042-053/L		UC 042-053-09 TTI/L
45.0	53.0	8.1	9.0		H605-4402900	
45.0	53.0	11.5	12.5	RS 045-053/L		UC 045-053-11.5 TTI/L
45.0	53.0	11.8	13.0		H605-4315600	
45.0	55.0	5.6	6.3		H605-4479700	
45.0	55.0	6.0	7.0		H605-4610400	
45.0	55.0	7.3	8.0		H605-4305900	
45.0	55.0	10.0	11.0		H605-4302600	
45.0	55.0	11.5	12.5	RS 045-055/L		UC 045-055-11.5 TTI/L
45.0	57.7	9.5	10.5	RS 045-057.7/L	H605-4322800	UC 045-057.7-09.5 TTI/L
45.0	60.0	10.0	11.0		H605-4315400	
45.0	65.0	10.0	11.0		H605-4315500	
48.0	56.0	11.5	12.5	RS 048-056/L1		UC 048-056-11.5 TTI/L
48.0	56.0	12.0	13.0	RS 048-056/L		UC 048-056-12 TTI/L
48.0	60.0	10.0	11.0		H605-4432600	
50.0	57.0	9.0	10.0		H605-4538600	
50.0	57.0	10.0	11.0	RS 050-057/L		UC 050-057-10 TTI/L
50.0	58.0	11.5	12.5	RS 050-058/L		UC 050-058-11.5 TTI/L
50.0	60.0	6.0	7.0		H605-4611800	
50.0	60.0	7.3	8.0		H605-4306000	
50.0	60.0	10.0	11.0		H605-4304500	UC 050-060-10 TTI/AI
50.0	60.0	11.8	13.0		H605-4314400	
50.0	62.0	8.0	9.0			UC 050-062-08 TTI/AI
50.0	62.7	8.0	9.0			UC 050-062.7-08 TTI/L
50.0	62.7	9.5	10.5	RS 050-062.7/L	H605-4334400	

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
50.0	65.0	9.0	10.0		H605-4611900	
50.0	65.0	9.5	10.5		H605-4344000	
50.0	65.0	10.0	11.0	RS 050-065/L1		UC 050-065-10 TTI/L
50.0	65.0	10.9	12.0		H605-4291700	
50.0	65.0	14.5	16.0		H605-4381900	
50.0	65.0	15.5	16.5	RS 050-065/L		UC 050-065-15.5 TTI/L
50.0	70.0	12.0	13.0		H605-4612000	
50.0	70.0	14.0	15.0	RS 050-070/L		UC 050-070-14 TTI/L
53.0	65.0	9.0	10.0		H605-4371700	
55.0	62.5	9.0	10.0	RS 055-062.5/L		UC 055-062.5-09 TTI/L
55.0	63.0	11.5	12.5	RS 055-063/L		UC 055-063-11.5 TTI/L
55.0	65.0	6.0	7.0		H605-4615600	
55.0	65.0	8.2	9.0		H605-4360400	
55.0	65.0	8.5	9.5	RS 055-065/L1		UC 055-065-08.5 TTI/L
55.0	65.0	10.0	11.0	RS 055-065/L	H605-4306100	UC 055-065-10 TTI/L
55.0	65.0	11.8	13.0		H605-4323400	
55.0	70.0	9.0	10.0		H605-4612100	
55.0	70.0	11.8	13.0		H605-4319200	
55.0	75.0	12.0	13.0		H605-4612200	
56.0	66.0	10.0	11.0		H605-4311800	
56.0	71.0	10.0	11.0		H605-4311900	
56.0	71.0	11.4	12.5		H605-4306200	
57.1	66.7	9.5	10.5	RS 057.1-066.7/L		UC 057.1-066.7-09.5 TTI/L
57.1	69.8	9.5	10.5	RS 057.1-069.8/L		
58.0	68.0	11.5	12.5	RS 058-068/L		
60.0	68.0	11.0	12.5		H605-4538000	
60.0	68.0	11.5	12.5	RS 060-068/L		UC 060-068-11.5 TTI/L
60.0	70.0	6.0	7.0		H605-4610500	
60.0	70.0	10.0	11.0		H605-4310600	
60.0	70.0	11.5	12.5	RS 060-070/L		UC 060-070-11.5 TTI/L
60.0	70.0	11.8	13.0		H605-4306300	
60.0	70.0	12.0	13.0	RS 060-070/L1		UC 060-070-12 TTI/L
60.0	71.0	7.0	8.0		H605-4615700	
60.0	72.0	10.0	11.0		H605-4323500	
60.0	75.0	9.0	10.0		H605-4612300	
60.0	75.0	10.0	11.0	RS 060-075/L1	H605-4378700	UC 060-075-10 TTI/L
60.0	75.0	11.8	13.0		H605-4306400	
60.0	75.0	15.5	16.5	RS 060-075/L		UC 060-075-15.5 TTI/L
60.0	75.0	20.5	22.5		H605-4391800	
60.0	80.0	11.4	12.5		H605-4514300	
60.0	80.0	12.0	13.0		H605-4612400	
63.0	73.0	6.0	7.0		H605-4612500	
63.0	73.0	11.8	13.0		H605-4312000	
63.0	75.0	7.7	8.7			UC 063-075-07.7 TTI/L
63.0	75.0	10.0	11.0	RS 063-075/L		UC 063-075-10 TTI/L

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
63.0	78.0	10.0	11.0		H605-4312100	
63.0	78.0	11.4	12.5		H605-4306500	
63.0	83.0	12.0	13.0			UC 063-083-12 TTI/AI
63.0	83.0	13.5	14.5	RS 063-083/L		UC 063-083-13.5 TTI/L
63.5	76.2	9.5	10.5	RS 063.5-076.2/L		UC 063.5-076.2-09.5 TTI/L
65.0	73.0	11.5	12.5	RS 065-073/L		UC 065-073-11.5 TTI/L
65.0	75.0	6.0	7.0		H605-4615900	
65.0	75.0	7.7	9.0		H605-4314500	
65.0	75.0	10.0	11.0	RS 065-075/L		UC 065-075-10 TTI/L
65.0	75.0	11.8	13.0		H605-4306600	
65.0	77.7	9.5	10.5	RS 065-077.7/L	H605-4334500	UC 065-077.7-09.5 TTI/L
65.0	78.0	10.0	11.0		H605-4616200	
65.0	80.0	9.0	10.0		H605-4612600	
65.0	80.0	11.8	13.0		H605-4312200	
65.0	85.0	12.0	13.0		H605-4612700	
66.0	80.0	10.0	11.0	RS 066-080/L		UC 066-080-10 TTI/L
67.0	77.0	6.0	7.0		H605-4612800	
67.0	75.0	11.5	12.5	RS 067-075/L		UC 067-075-11.5 TTI/L
69.8	82.5	9.5	10.5	RS 069.8-082.5/L		UC 069.8-082.5-09.5 TTI/L
70.0	77.5	9.0	10.0	RS 070-077.5/L		UC 070-077.5-09 TTI/L
70.0	78.0	11.5	12.5	RS 070-078/L		UC 070-078-11.5 TTI/L
70.0	79.0	13.0	14.0	RS 070-079/L		UC 070-079-13 TTI/L
70.0	80.0	6.0	7.0		H605-4615800	
70.0	80.0	11.5	12.5	RS 070-080/L		UC 070-080-11.5 TTI/L
70.0	80.0	11.8	13.0		H605-4312300	
70.0	80.0	12.0	13.0	RS 070-080/L1		UC 070-080-12 TTI/L
70.0	82.0	8.7	9.6		H605-4494700	
70.0	82.0	10.0	11.0		H605-4323600	
70.0	83.0	10.0	11.0		H605-4616400	
70.0	85.0	9.0	10.0		H605-4612900	
70.0	85.0	10.0	11.0		H605-4302700	
70.0	85.0	11.4	12.5		H605-4301200	
70.0	85.0	11.5	12.5	RS 070-085/L		UC 070-085-11.5 TTI/L
70.0	85.0	20.5	22.5		H605-4401400	
70.0	90.0	12.0	13.0	RS 070-090/L	H605-4613000	UC 070-090-12 TTI/L
73.0	82.4	7.0	7.8	RS 073-082.4/L		
75.0	83.0	11.5	12.5	RS 075-083/L		UC 075-083-11.5 TTI/L
75.0	85.0	8.5	9.5	RS 075-085/L1		UC 075-085-08.5 TTI/L
75.0	85.0	10.0	11.0	RS 075-085/L2		UC 075-085-10 TTI/L
75.0	85.0	11.5	12.5	RS 075-085/L		UC 075-085-11.5 TTI/L
75.0	85.0	11.8	13.0		H605-4312400	
75.0	88.0	10.0	11.0		H605-4616300	
75.0	90.0	9.0	10.0		H605-4613100	
75.0	95.0	12.0	13.0		H605-4613200	
76.2	88.9	9.5	10.5	RS 076.2-088.9/L		

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
77.0	86.0	14.0	15.0	RS 077-086/L		UC 077-086-14 TTI/L
78.0	86.0	9.0	10.0		H605-4538700	
78.0	86.0	11.5	12.5	RS 078-086/L1		UC 078-086-11.5 TTI/L
78.0	86.0	13.5	14.5	RS 078-086/L		UC 078-086-13.5 TTI/L
78.0	88.0	12.0	13.0	RS 078-088/L		UC 078-088-12 TTI/L
78.0	90.0	12.0	13.0	RS 078-090/L		UC 078-090-12 TTI/L
79.4	88.9	9.5	10.5	RS 079.4-088.9/L		UC 079.4-088.9-09.5 TTI/L
80.0	88.0	11.5	12.5	RS 080-088/L		UC 080-088-11.5 TTI/L
80.0	90.0	6.0	7.0		H605-4616000	
80.0	90.0	10.0	11.0		H605-4390400	
80.0	90.0	11.8	13.0		H605-4312500	
80.0	92.0	8.7	9.6		H605-4494800	
80.0	93.0	10.0	11.0		H605-4615200	
80.0	95.0	9.0	10.0		H605-4613300	
80.0	95.0	10.0	11.0		H605-4383500	
80.0	95.0	11.8	13.0		H605-4306700	
80.0	100.0	12.0	13.0		H605-4613400	
80.0	100.0	14.5	16.0		H605-4382800	
80.0	110.0	16.4	18.0		H605-4342900	
82.5	97.5	12.0	13.0	RS 082.5-097.5/L		UC 082.5-097.5-12 TTI/L
85.0	92.5	9.0	10.0	RS 085-092.5/L		
85.0	93.0	10.0	11.0		H605-4392700	
85.0	93.0	11.0	12.5		H605-4537900	
85.0	93.0	11.5	12.5	RS 085-093/L		UC 085-093-11.5 TTI/L
85.0	100.0	9.0	10.0		H605-4610600	
85.0	100.0	10.0	11.0		H605-4615300	
85.0	100.0	11.8	13.0		H605-4306800	
85.0	105.0	12.0	13.0		H605-4613500	
88.9	101.6	9.5	10.5	RS 088.9-101.6/L		
90.0	98.0	11.5	12.5	RS 090-098/L		UC 090-098-11.5 TTI/L
90.0	100.0	6.8	7.5		H605-4493500	
90.0	100.0	9.0	10.0		H605-4366900	
90.0	100.0	11.5	12.5	RS 090-100/L		UC 090-100-11.5 TTI/L
90.0	100.0	11.8	13.0		H605-4314600	
90.0	102.0	8.7	9.6		H605-4333000	
90.0	105.0	9.0	10.0		H605-4613600	
90.0	105.0	10.0	11.0		H605-4615400	
90.0	105.0	11.4	12.5		H605-4306900	
90.0	105.0	11.5	12.5	RS 090-105/L		UC 090-105-11.5 TTI/L
90.0	110.0	12.0	13.0	RS 090-110/L	H605-4613700	UC 090-110-12 TTI/L
93.0	101.0	11.5	12.5	RS 093-101/L		
95.0	103.0	11.5	12.5	RS 095-103/L		UC 095-103-11.5 TTI/L
95.0	105.0	8.7	9.5	RS 095-105/L1		UC 095-105-08.7 TTI/L
95.0	105.0	12.0	13.0	RS 095-105/L		UC 095-105-12 TTI/L
95.0	110.0	9.0	10.0		H605-4610700	

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
95.0	110.0	10.0	11.0		H605-4615500	
95.0	115.0	12.0	13.0		H605-4613800	
96.0	104.0	10.9	12.0		H605-4380300	
97.0	105.0	11.5	12.5	RS 097-105/L1		UC 097-105-11.5 TTI/L
97.0	105.0	13.5	14.5	RS 097-105/L		UC 097-105-13.5 TTI/L
97.0	106.0	14.0	15.0	RS 097-106/L		UC 097-106-14 TTI/L
99.0	109.0	12.0	13.0	RS 099-109/L		UC 099-109-12 TTI/L
100.0	108.0	11.5	12.5	RS 100-108/L		UC 100-108-11.5 TTI/L
100.0	110.0	10.0	11.0	RS 100-110/L1		UC 100-110-10 TTI/L
100.0	110.0	10.9	12.0		H605-4461700	
100.0	110.0	11.5	12.5	RS 100-110/L		UC 100-110-11.5 TTI/L
100.0	115.0	9.0	10.0		H605-4610800	
100.0	115.0	11.8	13.0		H605-4312600	
100.0	120.0	11.8	13.0		H605-4312700	
100.0	120.0	14.5	16.0		H605-4307000	
105.0	113.0	10.0	11.0		H605-4392800	
105.0	113.0	11.5	12.5	RS 105-113/L1		UC 105-113-11.5 TTI/L
105.0	113.0	13.5	14.5	RS 105-113/L		UC 105-113-13.5 TTI/L
105.0	115.0	11.5	12.5	RS 105-115/L		UC 105-115-11.5 TTI/L
105.0	115.0	13.2	14.5		H605-4390500	
105.0	120.0	14.5	16.0		H605-4379500	
108.0	123.0	10.9	12.0		H605-4329100	
110.0	118.0	11.5	12.5	RS 110-118/L		UC 110-118-11.5 TTI/L
110.0	125.0	9.0	10.0		H605-4459700	
110.0	125.0	11.0	12.0		H605-4537800	
110.0	125.0	14.5	16.0		H605-4481600	
110.0	130.0	11.8	13.0		H605-4312800	
110.0	130.0	14.5	16.0		H605-4307100	
110.0	135.0	14.5	16.0		H605-4343000	
112.0	122.0	10.0	11.0	RS 112-122/L		UC 112-122-10 TTI/L
112.0	125.0	9.0	10.0		H605-4610900	
113.0	123.0	8.5	9.5			UC 113-123-08.5 TTI/L
113.0	123.0	8.7	9.5	RS 113-123/L1		
115.0	123.0	11.5	12.5	RS 115-123/L		UC 115-123-11.5 TTI/L
115.0	125.0	12.0	13.0	RS 115-125/L1		UC 115-125-12 TTI/L
115.0	125.0	14.0	15.0	RS 115-125/L		UC 115-125-14 TTI/L
115.0	130.0	9.0	10.0		H605-4459800	
115.0	130.0	10.0	11.0	RS 115-130/L		
115.0	130.0	10.9	12.0		H605-4434600	
115.0	130.0	14.5	16.0		H605-4342600	
117.0	126.0	14.0	15.0	RS 117-126/L		
118.0	126.0	11.5	12.5	RS 118-126/L1		UC 118-126-11.5 TTI/L
118.0	126.0	13.5	14.5	RS 118-126/L		UC 118-126-13.5 TTI/L
120.0	128.0	11.5	12.5	RS 120-128/L		UC 120-128-11.5 TTI/L
120.0	130.0	10.9	12.0		H605-4461800	

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

Rod U-Cup

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
120.0	130.0	11.5	12.5	RS 120-130/L		UC 120-130-11.5 TTI/L
120.0	130.0	12.0	13.0	RS 120-130/L1		UC 120-130-12 TTI/L
120.0	135.0	9.0	10.0		H605-4614000	
120.0	140.0	12.0	13.0		H605-4614100	
120.0	140.0	14.5	16.0		H605-4312900	
121.0	135.0	9.0	10.0	RS 121-135/L		
125.0	133.0	11.0	12.0		H605-4392900	
125.0	133.0	11.5	12.5	RS 125-133/L		
125.0	135.0	10.0	11.0	RS 125-135/L		UC 125-135-10 TTI/L
125.0	140.0	9.0	10.0		H605-4614200	
125.0	145.0	12.0	13.0		H605-4614300	
125.0	145.0	14.5	16.0		H605-4307300	
125.0	150.0	12.5	14.0		H605-4367000	
127.0	140.0	11.5	12.5	RS 127-140/L		UC 127-140-11.5 TTI/L
128.0	136.0	11.5	12.5	RS 128-136/L		UC 128-136-11.5 TTI/L
130.0	138.0	11.5	12.5	RS 130-138/L		UC 130-138-11.5 TTI/L
130.0	140.0	14.5	16.0		H605-4390600	
130.0	145.0	9.0	10.0		H605-4614400	
130.0	150.0	12.0	13.0		H605-4614500	
130.0	150.0	14.5	16.0		H605-4313000	
131.0	150.0	13.0	14.0	RS 131-150/L		
132.0	142.0	8.5	9.5			UC 132-142-08.5 TTI/L
132.0	142.0	8.7	9.5	RS 132-142/L1		
132.5	157.5	13.2	14.5		H605-4329400	
135.0	143.0	11.5	12.5	RS 135-143/L		UC 135-143-11.5 TTI/L
135.0	150.0	11.0	12.5		H605-4537700	
135.0	150.0	11.5	12.5	RS 135-150/L		UC 135-150-11.5 TTI/L
135.0	150.0	15.0	16.0	RS 135-150/L1		UC 135-150-15 TTI/L
137.0	146.0	14.0	15.0	RS 137-146/L		
140.0	148.0	11.5	12.5	RS 140-148/L		UC 140-148-11.5 TTI/L
140.0	150.0	10.9	12.0		H605-4461900	
140.0	150.0	11.5	12.5	RS 140-150/L		UC 140-150-11.5 TTI/L
140.0	155.0	9.0	10.0		H605-4614600	
140.0	155.0	11.8	13.0		H605-4555300	
140.0	160.0	11.8	13.0		H605-4313100	
140.0	160.0	14.5	16.0		H605-4307400	
141.0	151.0	12.0	13.0	RS 141-151/L		UC 141-151-12 TTI/L
143.0	151.0	11.5	12.5	RS 143-151/L1		UC 143-151-11.5 TTI/L
143.0	151.0	13.5	14.5	RS 143-151/L		UC 143-151-13.5 TTI/L
145.0	155.0	12.0	13.0	RS 145-155/L		UC 145-155-12 TTI/L
145.0	160.0	12.0	13.0	RS 145-160/L		UC 145-160-12 TTI/L
148.0	160.0	12.0	13.0	RS 148-160/L		
150.0	165.0	9.0	10.0		H605-4614700	
150.0	170.0	12.0	13.0		H605-4614800	
150.0	170.0	13.2	14.5		H605-4367100	

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width. L	Reference	Reference	Reference
150.0	170.0	14.5	16.5		H605-4342800	
151.0	159.0	9.0	10.0		H605-4538800	
152.0	160.0	11.5	12.5	RS 152-160/L		UC 152-160-11.5 TTI/L
152.0	162.0	10.0	11.0	RS 152-162/L		UC 152-162-10 TTI/L
152.0	171.0	11.5	12.5	RS 152-171/L		
152.5	160.5	14.0	15.0	RS 152.5-160.5/L		UC 152.5-160.5-14 TTI/L
155.0	163.0	11.5	12.5	RS 155-163/L		UC 155-163-11.5 TTI/L
155.0	170.0	14.5	16.0		H605-4342700	
160.0	168.0	11.5	12.5	RS 160-168/L		UC 160-168-11.5 TTI/L
160.0	170.0	11.5	12.5	RS 160-170/L		UC 160-170-11.5 TTI/L
160.0	175.0	9.0	10.0		H605-4614900	
160.0	175.0	10.9	12.0		H605-4462000	
160.0	180.0	12.0	13.0		H605-4615000	
160.0	180.0	14.5	16.0		H605-4345000	
162.0	172.0	12.0	13.0	RS 162-172/L		UC 162-172-12 TTI/L
165.0	184.0	13.0	14.0	RS 165-184/L		UC 165-184-13 TTI/L
170.0	178.0	11.5	12.5	RS 170-178/L		UC 170-178-11.5 TTI/L
170.0	180.0	12.0	13.0	RS 170-180/L		UC 170-180-12 TTI/L
170.0	190.0	14.5	16.0		H605-4398800	
171.0	179.0	11.5	12.5	RS 171-179/L		UC 171-179-11.5 TTI/L
175.0	185.0	12.0	13.0	RS 175-185/L		UC 175-185-12 TTI/L
177.0	205.0	19.0	20.0	RS 177-205/L		
180.0	188.0	13.5	14.5	RS 180-188/L		UC 180-188-13.5 TTI/L
180.0	190.0	10.0	11.0	RS 180-190/L		UC 180-190-10 TTI/L
180.0	195.0	12.5	13.5	RS 180-195/L		UC 180-195-12.5 TTI/L
180.0	200.0	11.8	13.0		H605-4314700	
180.0	200.0	14.5	16.0		H605-4560900	
185.0	193.0	11.5	12.5	RS 185-193/L		UC 185-193-11.5 TTI/L
185.0	200.0	10.9	12.0		H605-4462100	
200.0	208.0	11.5	12.5	RS 200-208/L		
200.0	220.0	12.0	13.0		H605-4615100	
200.0	220.0	14.5	16.0		H605-4380200	
205.0	220.0	12.2	13.5		H605-4522400	
205.0	220.0	12.5	13.5	RS 205-220/L		UC 205-220-12.5 TTI/L
209.0	228.0	13.0	14.0	RS 209-228/L		
212.0	220.0	13.5	14.5	RS 212-220/L		UC 212-220-13.5 TTI/L
220.0	240.0	14.5	16.0		H605-4555400	
232.0	246.0	12.0	13.0	RS 232-246/L		

* For order processing, the computer code will be e.g. UC 014-024-07.3 RS/L, UC 010-015-03.6 H605

Rod U-Cup

Rod Seals

SD, TS/L, TTS/L (Metric Size)

SD, TS/L, TTS/L

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU	400	-40 +95	0.6

- Good sealing effect at high and low pressures.
- Good abrasion resistance, wear resistant.
- Unaffected by sudden loads.
- Suitable for small grooves.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Pressure	Clearance F Max	
Bar	d <60 mm	d > 60 mm
50	0.40	0.50
100	0.30	0.40
200	0.20	0.30
300	0.15	0.20
400	0.10	0.15

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Reference (For order processing)	Reference (For order processing)
d	D	H	L		
6.0	14.0	5.8	6.3	UC 006-014-05.8 SD	UC 006-014-05.8 TS/L
6.3	14.3	6.0	7.0	UC 006.3-014.3-06 SD	UC 006.3-014.3-06 TS/L
8.0	16.0	5.8	6.3	UC 008-016-05.8 SD	UC 008-016-05.8 TS/L
10.0	16.0	4.8	5.4	UC 010-016-04.8 SD	UC 010-016-04.8 TS/L
10.0	18.0	5.8	6.3	UC 010-018-05.8 SD	UC 010-018-05.8 TS/L
12.0	19.0	5.7	6.3	UC 012-019-05.7 SD	UC 012-019-05.7 TS/L
12.0	20.0	5.8	6.3	UC 012-020-05.8 SD	UC 012-020-05.8 TS/L
12.0	23.0	6.5	7.5	UC 012-023-06.5 SD	UC 012-023-06.5 TS/L
14.0	20.0	4.8	5.3	UC 014-020-04.8 SD	UC 014-020-04.8 TS/L
14.0	22.0	5.8	6.3	UC 014-022-05.8 SD	UC 014-022-05.8 TS/L
15.0	21.5	4.2	5.0	UC 015-021.5-04.2 SD	UC 015-021.5-04.2 TS/L
15.4	25.5	6.5	7.4	UC 015.4-025.5-06.5 SD	UC 015.4-025.5-06.5 TS/L
16.0	24.0	5.8	6.3	UC 016-024-05.8 SD	UC 016-024-05.8 TS/L
18.0	26.0	5.8	6.3	UC 018-026-05.8 SD	UC 018-026-05.8 TS/L
18.0	26.0	6.0	7.0	UC 018-026-06 SD	UC 018-026-06 TS/L
18.0	26.0	8.0	9.0	UC 018-026-08 SD	UC 018-026-08 TS/L
18.0	28.0	5.8	6.3	UC 018-028-05.8 SD	UC 018-028-05.8 TS/L
19.5	27.5	8.0	9.0	UC 019.5-027.5-08 SD	UC 019.5-027.5-08 TS/L
20.0	26.0	5.2	6.0	UC 020-026-05.2 SD	UC 020-026-05.2 TS/L
20.0	28.0	5.8	6.3	UC 020-028-05.8 SD	UC 020-028-05.8 TS/L
20.0	28.0	7.0	8.0		UC 020-028-07 TTS/L
20.0	30.0	4.5	5.0	UC 020-030-04.5 SD	UC 020-030-04.5 TS/L
20.0	30.0	7.0	8.0	UC 020-030-07 SD	UC 020-030-07 TS/L
20.0	30.0	8.0	9.0		UC 020-030-08 TTS/L
22.0	30.0	5.8	6.3	UC 022-030-05.8 SD	UC 022-030-05.8 TS/L
22.0	30.0	7.0	8.0		UC 022-030-07 TTS/L
22.0	32.0	8.0	9.0		UC 022-032-08 TTS/L
25.0	33.0	5.8	6.3	UC 025-033-05.8 SD	UC 025-033-05.8 TS/L
25.0	33.0	6.5	7.5	UC 025-033-06.5 SD	UC 025-033-06.5 TS/L
25.0	33.0	7.0	8.0	UC 025-033-07 SD	UC 025-033-07 TS/L
25.0	35.0	5.8	6.3	UC 025-035-05.8 SD	UC 025-035-05.8 TS/L
25.0	35.0	7.0	8.0	UC 025-035-07 SD	UC 025-035-07 TS/L
25.0	35.0	8.0	9.0	UC 025-035-08 SD	UC 025-035-08 TS/L
28.0	34.2	5.2	6.0	UC 028-034.2-05.2 SD	UC 028-034.2-05.2 TS/L
28.0	36.0	5.8	6.3	UC 028-036-05.8 SD	UC 028-036-05.8 TS/L
28.0	38.0	5.8	6.3	UC 028-038-05.8 SD	UC 028-038-05.8 TS/L
28.0	38.0	7.0	8.0	UC 028-038-07 SD	UC 028-038-07 TS/L
30.0	38.0	5.8	6.3	UC 030-038-05.8 SD	UC 030-038-05.8 TS/L
30.0	38.0	7.0	8.0	UC 030-038-07 SD	UC 030-038-07 TS/L
30.0	40.0	6.5	7.5	UC 030-040-06.5 SD	UC 030-040-06.5 TS/L

Rod U-Cup

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Reference (For order processing)	Reference (For order processing)
d	D	H	L		
30.0	40.0	7.0	8.0		UC 030-040-07 TTS/L
30.0	40.0	10.0	11.0	UC 030-040-10 SD	UC 030-040-10 TS/L
32.0	40.0	5.8	6.3	UC 032-040-05.8 SD	UC 032-040-05.8 TS/L
32.0	40.0	6.7	7.7	UC 032-040-06.7 SD	UC 032-040-06.7 TS/L
32.0	40.0	8.0	9.0	UC 032-040-08 SD	UC 032-040-08 TS/L
32.0	41.5	7.8	8.9	UC 032-041.5-07.8 SD	UC 032-041.5-07.8 TS/L
32.0	42.0	7.0	8.0		UC 032-042-07 TTS/L
32.0	42.0	8.0	9.0		UC 032-042-08 TTS/L
32.0	42.0	10.0	11.0		UC 032-042-10 TTS/L
32.0	42.5	8.0	9.0	UC 032-042.5-08 SD	UC 032-042.5-08 TS/L
35.0	43.0	5.8	6.3	UC 035-043-05.8 SD	UC 035-043-05.8 TS/L
35.0	43.0	6.0	7.0	UC 035-043-06 SD	UC 035-043-06 TS/L
35.0	43.0	8.0	9.0		UC 035-043-08 TTS/L
35.0	45.0	7.0	8.0		UC 035-045-07 TTS/L
35.0	45.0	10.0	11.0	UC 035-045-10 SD	UC 035-045-10 TS/L
35.0	45.0	12.5	13.5	UC 035-045-12.5 SD	UC 035-045-12.5 TS/L
35.0	50.0	10.0	11.0	UC 035-050-10 SD	UC 035-050-10 TS/L
36.0	44.0	5.8	6.3	UC 036-044-05.8 SD	UC 036-044-05.8 TS/L
36.0	44.0	6.0	7.0		UC 036-044-06 TTS/L
38.0	50.0	8.5	9.5	UC 038-050-08.5 SD	UC 038-050-08.5 TS/L
40.0	48.0	5.8	6.3	UC 040-048-05.8 SD	UC 040-048-05.8 TS/L
40.0	48.0	8.0	9.0	UC 040-048-08 SD	UC 040-048-08 TS/L
40.0	49.5	9.5	10.5	UC 040-049.5-09.5 SD	UC 040-049.5-09.5 TS/L
40.0	50.0	7.0	8.0	UC 040-050-07 SD	UC 040-050-07 TS/L
40.0	50.0	10.0	11.0	UC 040-050-10 SD	UC 040-050-10 TS/L
40.0	55.0	10.0	11.0	UC 040-055-10 SD	UC 040-055-10 TS/L
40.0	60.0	10.0	11.0	UC 040-060-10 SD	UC 040-060-10 TS/L
42.0	52.0	8.0	9.0	UC 042-052-08 SD	UC 042-052-08 TS/L
45.0	53.0	5.8	6.3	UC 045-053-05.8 SD	UC 045-053-05.8 TS/L
45.0	53.0	8.0	9.0	UC 045-053-08 SD	UC 045-053-08 TS/L
45.0	55.0	7.0	8.0	UC 045-055-07 SD	UC 045-055-07 TS/L
45.0	55.0	10.0	11.0	UC 045-055-10 SD	UC 045-055-10 TS/L
45.0	57.7	9.5	10.5	UC 045-057.7-09.5 SD	UC 045-057.7-09.5 TS/L
48.0	60.0	6.0	7.0	UC 048-060-06 SD	UC 048-060-06 TS/L
50.0	58.0	8.0	9.0		UC 050-058-08 TTS/L
50.0	60.0	7.0	8.0	UC 050-060-07 SD	UC 050-060-07 TS/L
50.0	60.0	9.0	10.0	UC 050-060-09 SD	UC 050-060-09 TS/L
50.0	60.0	10.0	11.0	UC 050-060-10 SD	UC 050-060-10 TS/L
50.0	62.7	9.5	10.5	UC 050-062.7-09.5 SD	UC 050-062.7-09.5 TS/L
50.0	65.0	10.0	11.0	UC 050-065-10 SD	UC 050-065-10 TS/L

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Reference (For order processing)	Reference (For order processing)
d	D	H	L		
50.0	70.0	13.5	14.5	UC 050-070-13.5 SD	UC 050-070-13.5 TS/L
55.0	63.0	8.0	9.0	UC 055-063-08 SD	UC 055-063-08 TS/L
55.0	65.0	10.0	11.0	UC 055-065-10 SD	UC 055-065-10 TS/L
55.0	65.0	12.0	13.0	UC 055-065-12 SD	UC 055-065-12 TS/L
56.0	71.0	11.5	12.5	UC 056-071-11.5 SD	UC 056-071-11.5 TS/L
57.1	66.7	9.5	10.5	UC 057.1-066.7-09.5 SD	UC 057.1-066.7-09.5 TS/L
57.1	69.8	9.5	10.5	UC 057.1-069.8-09.5 SD	UC 057.1-069.8-09.5 TS/L
60.0	68.0	8.0	9.0	UC 060-068-08 SD	UC 060-068-08 TS/L
60.0	68.0	11.5	12.5	UC 060-068-11.5 SD	UC 060-068-11.5 TS/L
60.0	68.0	13.0	14.0		UC 060-068-13 TTS/L
60.0	70.0	10.0	11.0		UC 060-070-10 TTS/L
60.0	70.0	11.5	12.5	UC 060-070-11.5 SD	UC 060-070-11.5 TS/L
60.0	70.0	12.0	13.0		UC 060-070-12 TTS/L
60.0	71.0	8.0	9.0	UC 060-071-08 SD	UC 060-071-08 TS/L
60.0	72.0	9.0	10.0	UC 060-072-09 SD	UC 060-072-09 TS/L
60.0	75.0	10.0	11.0	UC 060-075-10 SD	UC 060-075-10 TS/L
61.0	69.0	8.0	9.0	UC 061-069-08 SD	UC 061-069-08 TS/L
63.0	75.0	10.0	11.0		UC 063-075-10 TTS/L
63.5	76.2	9.5	10.5	UC 063.5-076.2-09.5 SD	UC 063.5-076.2-09.5 TS/L
65.0	75.0	12.0	13.0		UC 065-075-12 TTS/L
65.0	75.0	12.5	13.5	UC 065-075-12.5 SD	UC 065-075-12.5 TS/L
65.0	77.7	9.5	10.5	UC 065-077.7-09.5 SD	UC 065-077.7-09.5 TS/L
65.0	79.2	11.5	12.5	UC 065-079.2-11.5 SD	UC 065-079.2-11.5 TS/L
66.7	76.2	9.5	10.5	UC 066.7-076.2-09.5 SD	UC 066.7-076.2-09.5 TS/L
69.8	82.5	9.5	10.5	UC 069.8-082.5-09.5 SD	UC 069.8-082.5-09.5 TS/L
70.0	80.0	12.0	13.0		UC 070-080-12 TTS/L
70.0	85.0	11.5	12.5	UC 070-085-11.5 SD	UC 070-085-11.5 TS/L
73.0	82.4	7.0	8.0	UC 073-082.4-07 SD	UC 073-082.4-07 TS/L
75.0	83.0	8.0	9.0	UC 075-083-08 SD	UC 075-083-08 TS/L
75.0	85.0	7.0	8.0	UC 075-085-07 SD	UC 075-085-07 TS/L
75.0	85.0	12.0	13.0	UC 075-085-12 SD	UC 075-085-12 TS/L
75.0	90.0	10.5	11.5	UC 075-090-10.5 SD	UC 075-090-10.5 TS/L
76.2	88.9	9.5	10.5	UC 076.2-088.9-09.5 SD	UC 076.2-088.9-09.5 TS/L
76.2	91.2	12.0	13.0	UC 076.2-091.2-12 SD	UC 076.2-091.2-12 TS/L
79.4	88.9	9.5	10.5	UC 079.4-088.9-09.5 SD	UC 079.4-088.9-09.5 TS/L
80.0	88.0	11.5	12.5	UC 080-088-11.5 SD	UC 080-088-11.5 TS/L
80.0	90.0	12.0	13.0	UC 080-090-12 SD	UC 080-090-12 TS/L
80.0	92.0	9.0	9.6	UC 080-092-09 SD	UC 080-092-09 TS/L
80.0	95.0	11.0	12.0	UC 080-095-11 SD	UC 080-095-11 TS/L
80.0	95.0	11.5	12.5	UC 080-095-11.5 SD	UC 080-095-11.5 TS/L

Rod U-Cup

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Reference (For order processing)	Reference (For order processing)
d	D	H	L		
80.0	96.0	9.5	10.5	UC 080-096-09.5 SD	UC 080-096-09.5 TS/L
82.5	97.5	12.0	13.0	UC 082.5-097.5-12 SD	UC 082.5-097.5-12 TS/L
85.0	93.0	11.5	12.5	UC 085-093-11.5 SD	UC 085-093-11.5 TS/L
85.0	95.0	12.0	13.0	UC 085-095-12 SD	UC 085-095-12 TS/L
86.0	101.0	12.0	13.0	UC 086-101-12 SD	UC 086-101-12 TS/L
88.0	96.0	8.0	9.0	UC 088-096-08 SD	UC 088-096-08 TS/L
88.9	101.6	9.5	10.5	UC 088.9-101.6-09.5 SD	UC 088.9-101.6-09.5 TS/L
90.0	102.0	9.0	10.0	UC 090-102-09 SD	UC 090-102-09 TS/L
90.0	105.0	11.5	12.5	UC 090-105-11.5 SD	UC 090-105-11.5 TS/L
90.0	110.0	14.0	15.0	UC 090-110-14 SD	UC 090-110-14 TS/L
91.0	99.0	8.0	9.0	UC 091-099-08 SD	UC 091-099-08 TS/L
100.0	108.0	11.5	12.5	UC 100-108-11.5 SD	UC 100-108-11.5 TS/L
100.0	115.0	12.0	13.0	UC 100-115-12 SD	UC 100-115-12 TS/L
108.0	116.0	8.0	9.0	UC 108-116-08 SD	UC 108-116-08 TS/L
110.0	125.0	11.3	12.0	UC 110-125-11.3 SD	UC 110-125-11.3 TS/L
112.0	127.0	12.0	13.0	UC 112-127-12 SD	UC 112-127-12 TS/L
120.0	128.0	8.0	9.0		UC 120-128-08 TTS/L
120.0	128.0	11.5	12.5	UC 120-128-11.5 SD	UC 120-128-11.5 TS/L
126.0	134.0	8.0	9.0	UC 126-134-08 SD	UC 126-134-08 TS/L
130.0	145.0	15.0	16.0	UC 130-145-15 SD	UC 130-145-15 TS/L
130.0	155.0	15.0	16.0	UC 130-155-15 SD	UC 130-155-15 TS/L
135.0	150.0	11.5	12.5	UC 135-150-11.5 SD	UC 135-150-11.5 TS/L
137.0	152.0	12.0	13.0	UC 137-152-12 SD	UC 137-152-12 TS/L
140.0	150.0	11.5	12.5	UC 140-150-11.5 SD	UC 140-150-11.5 TS/L
146.0	156.0	10.0	11.0	UC 146-156-10 SD	UC 146-156-10 TS/L
163.0	178.0	12.0	13.0	UC 163-178-12 SD	UC 163-178-12 TS/L
170.0	180.0	10.0	11.0	UC 170-180-10 SD	UC 170-180-10 TS/L
188.0	203.0	12.0	13.0	UC 188-203-12 SD	UC 188-203-12 TS/L
197.0	209.0	12.0	13.0	UC 197-209-12 SD	UC 197-209-12 TS/L
218.0	237.0	16.0	17.0	UC 218-237-16 SD	UC 218-237-16 TS/L
228.0	240.0	12.0	13.0	UC 228-240-12 SD	UC 228-240-12 TS/L
300.0	325.0	24.0	25.0	UC 300-325-24 SD	UC 300-325-24 TS/L

SPEC SEAL

Seals & O-rings Specialist

Rod Seals

JAM (Metric Size)

JAM

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU-NBR-PU	500	-30 +100	0.5

- High wear resistance for high pressure applications.
- Sealing effect under low pressure guaranteed with dynamic expander ring.
- Special back up ring designed for dynamic applications aids extrusion resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Reference (For order processing)
d	D	H	L	
16.0	24.0	5.7	6.3	UC 016-024-05.7 JAM
18.0	26.0	5.7	6.3	UC 018-026-05.7 JAM
20.0	28.0	5.7	6.3	UC 020-028-05.7 JAM
22.0	30.0	5.7	6.3	UC 022-030-05.7 JAM
25.0	33.0	5.7	6.3	UC 025-033-05.7 JAM
28.0	38.0	7.0	8.0	UC 028-038-07 JAM
32.0	42.0	7.0	8.0	UC 032-042-07 JAM
36.0	46.0	7.0	8.0	UC 036-046-07 JAM
40.0	50.0	7.0	8.0	UC 040-050-07 JAM
45.0	55.0	7.0	8.0	UC 045-055-07 JAM
50.0	60.0	7.0	8.0	UC 050-060-07 JAM
56.0	71.0	11.5	12.5	UC 056-071-11.5 JAM
60.0	75.0	11.5	12.5	UC 060-075-11.5 JAM
63.0	78.0	11.5	12.5	UC 063-078-11.5 JAM
65.0	80.0	11.5	12.5	UC 065-080-11.5 JAM
70.0	85.0	11.5	12.5	UC 070-085-11.5 JAM
75.0	90.0	11.5	12.5	UC 075-090-11.5 JAM
80.0	95.0	11.5	12.5	UC 080-095-11.5 JAM
85.0	100.0	11.5	12.5	UC 085-100-11.5 JAM
90.0	105.0	11.5	12.5	UC 090-105-11.5 JAM
95.0	110.0	11.5	12.5	UC 095-110-11.5 JAM
100.0	120.0	15.0	16.0	UC 100-120-15 JAM
110.0	130.0	15.0	16.0	UC 110-130-15 JAM
125.0	145.0	15.0	16.0	UC 125-145-15 JAM
140.0	160.0	15.0	16.0	UC 140-160-15 JAM
160.0	185.0	18.0	20.0	UC 160-185-18 JAM
180.0	205.0	18.0	20.0	UC 180-205-18 JAM
200.0	225.0	18.0	20.0	UC 200-225-18 JAM
220.0	250.0	23.0	25.0	UC 220-250-23 JAM
250.0	280.0	23.0	25.0	UC 250-280-23 JAM
280.0	310.0	23.0	25.0	UC 280-310-23 JAM
320.0	360.0	30.0	32.0	UC 320-360-30 JAM
360.0	400.0	30.0	32.0	UC 360-400-30 JAM

Rod U-Cup - BD

Rod Seals

BD (Metric Size)

BD

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PU-NBR-POM	500	-35 +110	0.5

- High wear resistance for high pressure applications.
- Sealing effect under low pressure guaranteed with dynamic expander ring.
- Special back up ring designed for dynamic applications aids extrusion resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Diameter	ISO 5597	Prefix No.	Reference (For order processing)
d	D	H	L	d1			
40.0	55.0	11.4	12.5	40.5	x	0040	UC 040-055-11.4 BD
50.0	65.0	11.4	12.5	50.5	x	0050	UC 050-065-11.4 BD
56.0	71.0	11.4	12.5	56.5		0056	UC 056-071-11.4 BD
60.0	75.0	11.4	12.5	60.5		0060	UC 060-075-11.4 BD
63.0	78.0	11.4	12.5	63.5		0063	UC 063-078-11.4 BD
65.0	80.0	11.4	12.5	65.5		0065	UC 065-080-11.4 BD
70.0	85.0	11.4	12.5	70.5	x	0070	UC 070-085-11.4 BD
75.0	90.0	11.4	12.5	75.5		0075	UC 075-090-11.4 BD
80.0	95.0	11.4	12.5	80.5	x	0080	UC 080-095-11.4 BD
85.0	100.0	11.4	12.5	85.5		0085	UC 085-100-11.4 BD
85.0	100.0	12.0	13.0	85.5		0086	UC 085-100-12 BD
90.0	105.0	11.4	12.5	90.5	x	0090	UC 090-105-11.4 BD
95.0	110.0	12.0	13.0	95.5		0092	UC 095-110-12 BD
100.0	115.0	12.0	13.0	100.5		0095	UC 100-115-12 BD
100.0	120.0	13.5	15.0	100.6		0099	UC 100-120-13.5 BD
100.0	120.0	14.5	16.0	100.6	x	0100	UC 100-120-14.5 BD
110.0	130.0	14.5	16.0	110.6	x	0110	UC 110-130-14.5 BD
120.0	140.0	14.5	16.0	120.6		0120	UC 120-140-14.5 BD
125.0	145.0	14.5	16.0	125.6	x	0125	UC 125-145-14.5 BD
130.0	150.0	14.5	16.0	130.6		0130	UC 130-150-14.5 BD
140.0	160.0	14.5	16.0	140.6	x	0140	UC 140-160-14.5 BD
150.0	170.0	14.5	16.0	150.6		0150	UC 150-170-14.5 BD
160.0	180.0	14.5	16.0	160.6		0160	UC 160-180-14.5 BD
170.0	190.0	14.5	16.0	170.6		0170	UC 170-190-14.5 BD
180.0	205.0	18.2	20.0	180.8	x	0180	UC 180-205-18.2 BD
190.0	215.0	18.2	20.0	190.8		0190	UC 190-215-18.2 BD
200.0	230.0	22.7	25.0	200.8	x	0200	UC 200-230-22.7 BD
220.0	250.0	22.7	25.0	220.8	x	0220	UC 220-250-22.7 BD
230.0	260.0	22.7	25.0	230.8		0230	UC 230-260-22.7 BD
240.0	270.0	22.7	25.0	240.8		0240	UC 240-270-22.7 BD

SPEC SEAL Seals & O-rings Specialist

Rod Packing

Rod Seals

TGO, SE, SE/G (Metric Size)

TGO

SE

SE/G

Type	Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
TGO, SE	NBR+Fabric	220	-30 +120	0.5
SE/G	NBR+Fabric+POM	450	-30 +120	0.5

- Small cross section.
- Large size range.
- No hydrolyses problems.
- Wide temperature range.

Installation Recommendation

SE

SE/G

TGO

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

d	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
5.0	12.0	6.4	TGO 2501		
6.0	13.0	6.4	TGO 2502		
8.0	15.0	6.4	TGO 2503		
10.0	17.0	6.4	TGO 2504	TSE 067-039/A	
10.0	17.0	7.0		TSD 067-039/6.5	
10.0	18.0	6.3		TSE 070-039/M	
12.0	19.0	6.4	TGO 2505	TSE 074-047/A	
12.0	19.0	7.0		TSD 074-047/6.5	
12.0	20.0	6.3		TSC 078-047	
12.0	20.0	7.0		TSD 078-047/6.5	
12.0	20.0	7.5		TSD 078-047/7	
12.0	23.0	7.5			TSD 090-047/7/G
12.0	25.0	10.0		TSD 098-047/9.5	
14.0	22.0	6.3		TSE 086-055/A	
14.0	22.0	6.4	TGO 2506		
14.0	22.0	7.0		TSE 086-055	
14.0	24.0	7.0		TSD 094-055/6.5	
15.0	23.0	6.4	TGO 2507		
15.0	23.0	6.5		TSE 090-059	
15.0	23.0	7.0		TSD 090-059/6.5	
15.0	25.0	8.0		TSD 098-059/7.5	
15.0	27.0	7.0		TSC 106-059	TSC 106-059/G
16.0	22.0	5.5			TSD 086-062/5/G
16.0	24.0	6.3		TSE 094-062/A	
16.0	24.0	6.4	TGO 2508		
16.0	24.0	7.0		TSD 094-062/6.5	TSD 094-062/6.5/G
16.0	24.0	7.5		TSC 094-062/1	
16.0	26.0	8.0		TSC 102-062/1	
16.0	28.0	7.5			TSD 110-062/7/G
16.0	32.0	8.5		TSD 125-062/8	
18.0	24.0	5.5		TSD 094-070/5	
18.0	25.0	6.0			TSD 098-070/5.5/G
18.0	25.0	7.0		TSC 098-070	
18.0	25.0	7.5		TSD 098-070/7	
18.0	26.0	6.3		TSE 102-070/A	
18.0	26.0	6.4	TGO 2509		
18.0	26.0	7.0		TSE 102-070	
18.0	28.0	6.3		TSE 110-070	TSE 110-070/G
18.0	28.0	7.0			TSD 110-070/6.5/G
18.0	30.0	7.5			TSD 118-070/7/G

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

Rod Packing

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
19.0	29.0	9.0		TSE 114-074	
20.0	26.0	5.5		TSC 102-078	
20.0	27.0	6.4		TSE 106-078	TSE 106-078/G
20.0	28.0	6.3		TSE 110-078/A	TSE 110-078/A/G
20.0	28.0	6.4	TGO 2510		
20.0	28.0	7.0		TSE 110-078	TSE 110-078/G
20.0	30.0	8.0		TSC 118-078/1	
20.0	30.0	8.5		TSE 118-078	TSE 118-078/G
20.0	35.0	11.5		TSD 137-078/11	
20.0	32.0	9.5			TSD 125-078/9/G
20.0	32.0	10.5		TSD 125-078/10	TSD 125-078/10/G
22.0	30.0	6.3		TSE 118-086/A	
22.0	30.0	6.4	TGO 2511		
22.0	30.0	7.0		TSE 118-086	TSE 118-086/G
22.0	32.0	6.5		TSD 125-086/6	
22.0	34.0	9.5		TSE 133-086	TSE 133-086/G
22.0	35.0	10.0		TSE 137-086	TSE 137-086/G
24.0	32.0	7.5		TSD 125-094/7	
24.0	34.0	6.5		TSE 133-094	
24.0	36.0	8.3		TSD 141-094/7.8	
25.0	32.0	6.5		TSD 125-098/6	
25.0	33.0	6.3		TSE 129-098	TSE 129-098/G
25.0	33.0	6.4	TGO 2512		
25.0	33.0	7.0			TSC 129-098/G
25.0	33.0	7.5			TSC 129-098/2/G
25.0	35.0	8.0		TSC 137-098	TSC 137-098/G
25.0	35.0	8.5			TSD 137-098/8/G
25.0	35.0	9.0		TSE 137-098	TSE 137-098/G
25.0	35.0	10.5		TSD 137-098/10	
25.0	37.0	10.5			TSD 145-098/10/G
25.0	38.0	10.0		TSE 149-098	TSE 149-098/G
25.0	40.0	12.0		TSD 157-098/11.5	
25.0	44.0	12.5		TSE 173-098	
26.0	40.0	10.0		TSE 157-102/1	
27.0	35.0	6.5		TSD 137-106/6	
28.0	36.0	6.4	TGO 2513	TSE 141-110/A	
28.0	38.0	8.0		TSE 149-110	TSE 149-110/G
28.0	38.0	8.5			TSC 149-110/G
28.0	40.0	9.5		TSE 157-110	TSE 157-110/G
28.0	41.0	10.0		TSE 161-110	TSE 161-110/G

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
30.0	37.5	6.5		TSD 147-118	
30.0	38.0	6.4	TGO 2514	TSE 149-118	TSE 149-118/G
30.0	38.0	7.5		TSD 149-118/7	
30.0	38.0	9.0		TSD 149-118/8.5	
30.0	40.0	7.5		TSE 157-118	TSE 157-118/G
30.0	40.0	9.0			TSD 157-118/8.5/G
30.0	40.0	11.0			TSD 157-118/10.5/G
30.0	42.0	10.5			TSD 165-118/10/G
30.0	45.0	9.0		TSE 177-118/1	TSE 177-118/1/G
30.0	45.0	9.5			TSC 177-118/G
30.0	45.0	11.0			TSD 177-118/10.5/G
30.0	50.0	14.5		TSE 196-118	TSE 196-118/G
32.0	40.0	6.0		TSE 157-125/1	
32.0	40.0	6.4	TGO 2515	TSE 157-125/A	
32.0	40.0	9.0		TSE 157-125	TSE 157-125/G
32.0	42.0	8.0		TSC 165-125	TSC 165-125/G
32.0	42.0	8.5			TSD 165-125/8/G
32.0	42.0	10.5		TSE 165-125	
32.0	44.0	11.5		TSE 173-125	TSE 173-125/G
32.0	44.0	12.0		TSC 173-125	TSC 173-125/G
32.0	45.0	10.0		TSE 177-125	TSE 177-125/G
32.0	46.0	10.5			TSD 181-125/10/G
35.0	43.0	6.4	TGO 2516	TSE 169-137	TSE 169-137/G
35.0	45.0	7.0			TSC 177-137/G
35.0	45.0	8.0		TSE 177-137/5	TSE 177-137/5/G
35.0	45.0	9.0		TSC 177-137/1	
35.0	45.0	10.0			TSD 177-137/9.5/G
35.0	45.0	11.0			TSE 177-137/3/G
35.0	45.0	13.5		TSE 177-137/2	
35.0	50.0	11.0			TSC 196-137/2/G
35.0	50.0	11.5		TSE 196-137	
35.0	50.0	12.5		TSC 196-137/1	TSC 196-137/1/G
36.0	43.0	6.4		TSE 169-141	TSE 169-141/G
36.0	44.0	6.4	TGO 2517	TSE 173-141/A	
36.0	44.0	8.5		TSC 173-141/1	
36.0	46.0	8.0		TSC 181-141/1	
36.0	46.0	8.5		TSE 181-141	TSE 181-141/G
36.0	48.0	10.0		TSE 188-141	TSE 188-141/G
36.0	51.0	11.5		TSC 200-141	
38.0	44.0	5.5		TSD 173-149/5	

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

Rod Packing

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
38.0	50.0	9.5		TSE 196-149	
38.0	50.0	10.0		TSD 196-149/9.5	
38.0	55.0	11.0			TSD 216-149/10.5/G
40.0	48.0	6.4	TGO 2518	TSE 188-157	TSE 188-157/G
40.0	48.0	8.5		TSD 188-157/8	
40.0	50.0	8.0		TSE 196-157/3	TSE 196-157/3/G
40.0	50.0	10.0			TSD 196-157/9.5/G
40.0	50.0	10.5		TSC 196-157/1	TSC 196-157/1/G
40.0	50.0	11.0		TSE 196-157	TSE 196-157/G
40.0	50.0	13.5		TSE 196-157/2	TSE 196-157/2/G
40.0	52.0	9.5			TSD 204-157/9/G
40.0	52.0	11.0			TSD 204-157/10.5/G
40.0	55.0	7.5			TSD 216-157/7/G
40.0	55.0	8.0		TSE 216-157	TSE 216-157/G
40.0	55.0	11.0		TSE 216-157/1	TSE 216-157/1/G
40.0	55.0	11.5		TSD 216-157/11	
40.0	60.0	10.5		TSD 236-157/10	TSD 236-157/10/G
40.0	60.0	11.0			TSD 236-157/10.5/G
40.0	60.0	14.5		TSE 236-157	TSE 236-157/G
42.0	50.0	6.4	TGO 2519	TSE 196-165/A	
43.0	53.0	9.0		TSD 208-169/8.5	
45.0	52.0	11.0		TSE 204-177	
45.0	53.0	6.5		TSE 208-177	
45.0	53.0	8.5			TSD 208-177/8/G
45.0	53.0	11.0			TSD 208-177/10.5/G
45.0	55.0	8.0	TGO 2520	TSE 216-177	TSE 216-177/G
45.0	55.0	10.5		TSC 216-177/3	
45.0	55.0	11.0			TSE 216-177/1/G
45.0	60.0	10.5		TSE 236-177	TSE 236-177/G
45.0	60.0	11.0			TSD 236-177/10.5/G
45.0	60.0	11.5		TSC 236-177/1	TSC 236-177/1/G
45.0	63.0	11.0		TSE 248-177	TSE 248-177/G
45.0	65.0	14.5		TSE 255-177	TSE 255-177/G
46.0	54.0	8.0		TSD 212-181/7.5	
46.0	56.0	8.0		TSD 220-181/7.5	
48.0	60.0	7.0		TSE 236-188	
48.0	60.0	11.0			TSD 236-188/10.5/G
48.0	63.0	11.5		TSC 248-188/2	
50.0	58.0	8.5		TSC 228-196	
50.0	60.0	8.0	TGO 2521	TSE 236-196	TSE 236-196/G

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
50.0	60.0	10.0		TSD 236-196/9.5	TSD 236-196/9.5/G
50.0	60.0	10.5		TSE 236-196/1	TSE 236-196/1/G
50.0	60.0	11.0			TSE 236-196/2/G
50.0	60.0	14.5		TSC 236-196/3	TSC 236-196/3/G
50.0	62.0	10.0		TSE 244-196	TSE 244-196/G
50.0	65.0	11.0		TSE 255-196	TSE 255-196/G
50.0	65.0	11.5		TSD 255-196/11	
50.0	66.0	12.5		TSD 259-196/12	
50.0	70.0	14.5		TSE 275-196	TSE 275-196/G
54.0	66.0	9.5		TSE 259-212	
55.0	65.0	8.0	TGO 2522	TSE 255-216/1	TSE 255-216/1/G
55.0	65.0	11.0			TSE 255-216/G
55.0	65.0	13.5			TSE 255-216/4/G
55.0	70.0	10.5		TSE 275-216	TSE 275-216/G
55.0	75.0	14.5		TSE 295-216	TSE 295-216/G
56.0	66.0	8.0	TGO 2523	TSE 259-220/A	TSE 259-220/A/G
56.0	66.0	11.0			TSD 259-220/10.5/G
56.0	71.0	10.5			TSE 279-220/G
56.0	71.0	12.5			TSD 279-220/12/G
56.0	76.0	14.5			TSE 299-220/G
57.0	67.0	8.0		TSE 263-224	
60.0	68.0	13.0		TSE 267-236	
60.0	69.5	7.5		TSD 273-236	
60.0	69.5	13.0		TSE 273-236/1	
60.0	70.0	8.0	TGO 2524	TSE 275-236	TSE 275-236/G
60.0	70.0	9.5		TSD 275-236/9	
60.0	70.0	10.0			TSD 275-236/9.5/G
60.0	70.0	11.0			TSE 275-236/3/G
60.0	70.0	13.0		TSE 275-236/2	TSE 275-236/2/G
60.0	70.0	14.5		TSC 275-236/4	
60.0	72.0	10.0		TSE 283-236	TSE 283-236/G
60.0	72.0	11.0		TSC 283-236/2	
60.0	75.0	13.0		TSE 295-236	TSE 295-236/G
60.0	80.0	14.5		TSE 314-236	TSE 314-236/G
63.0	75.0	9.6	TGO 2525	TSE 295-248/A	
63.0	75.0	10.5			TSE 295-248/G
63.0	78.0	10.5			TSD 307-248/10/G
63.0	83.0	14.5		TSE 326-248	TSE 326-248/G
65.0	75.0	13.5		TSE 295-255	TSE 295-255/G
65.0	77.0	9.6	TGO 2526	TSE 303-255/A	

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

Rod Packing

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
65.0	80.0	11.5		TSE 314-255	TSE 314-255/G
65.0	80.0	12.5		TSE 314-255/1	TSE 314-255/1/G
65.0	85.0	14.5		TSE 334-255	TSE 334-255/G
70.0	80.0	8.0		TSE 314-275/1	
70.0	80.0	13.0		TSE 314-275	TSE 314-275/G
70.0	82.0	9.6	TGO 2527	TSE 322-275/A	
70.0	82.0	10.5			TSP 322-275/G
70.0	82.0	11.0		TSC 322-275/2	
70.0	84.0	12.5		TSE 330-275	TSE 330-275/G
70.0	85.0	10.0		TSD 334-275/9.5	
70.0	85.0	12.0		TSD 334-275/11.5	TSD 334-275/11.5/G
70.0	85.0	12.5		TSE 334-275/1	TSE 334-275/1/G
70.0	90.0	14.5		TSE 354-275	TSE 354-275/G
72.0	84.0	6.5		TSE 330-283	
75.0	83.0	6.5		TSD 326-295/6	
75.0	85.0	8.0		TSE 334-295/1	
75.0	85.0	11.0		TSE 334-295/2	TSE 334-295/2/G
75.0	85.0	12.5			TSD 334-295/12/G
75.0	87.0	9.6	TGO 2528		
75.0	90.0	11.5		TSE 354-295	TSE 354-295/G
75.0	90.0	13.0			TSP 354-295/G
75.0	95.0	14.5		TSE 374-295	TSE 374-295/G
78.0	86.0	9.5			TSE 338-307/1/G
78.0	90.0	12.5			TSD 354-307/12/G
80.0	90.0	8.0		TSE 354-314	
80.0	90.0	11.0			TSE 354-314/1/G
80.0	90.0	13.0			TSE 354-314/2/G
80.0	92.0	9.6	TGO 2529	TSE 362-314/A	
80.0	92.0	11.0		TSC 362-314/1	
80.0	95.0	10.5			TSD 374-314/10/G
80.0	95.0	12.5		TSC 374-314/1	TSC 374-314/1/G
80.0	95.0	13.0		TSC 374-314	TSC 374-314/G
80.0	96.0	10.5		TSE 377-314	TSE 377-314/G
80.0	100.0	12.0		TSE 393-314/1	TSE 393-314/1/G
80.0	100.0	14.5		TSE 393-314	TSE 393-314/G
81.0	91.0	8.0		TSD 358-318/7.5	
84.0	94.0	8.0		TSE 370-330	
85.0	95.0	8.0		TSE 374-334	
85.0	97.0	9.6	TGO 2530	TSE 381-334/A	
85.0	100.0	12.0			TSD 393-334/11.5/G

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
85.0	100.0	13.0		TSE 393-334	TSE 393-334/G
85.0	105.0	13.0		TSC 413-334/1	
85.0	105.0	14.8			TSE 413-334/G
87.0	110.0	8.0		TSC 433-342	
90.0	100.0	11.0			TSE 393-354/G
90.0	102.0	9.6	TGO 2531	TSE 401-354/A	
90.0	105.0	9.5		TSE 413-354	TSE 413-354/G
90.0	105.0	12.5			TSE 413-354/1/G
90.0	110.0	12.5		TSE 433-354	TSE 433-354/G
90.0	110.0	14.5		TSE 433-354/1	TSE 433-354/1/G
95.0	105.0	11.0		TSE 413-374	TSE 413-374/G
95.0	107.0	12.5		TSE 421-374	
95.0	115.0	14.5			TSC 452-374/G
98.0	107.5	7.0		TSE 423-385	
100.0	113.0	13.5		TSE 444-393	TSE 444-393/G
100.0	115.0	11.5		TSD 452-393/11	
100.0	115.0	12.0	TGO 2532	TSE 452-393/A	
100.0	115.0	12.5		TSD 452-393/12	TSD 452-393/12/G
100.0	120.0	12.0			TSD 472-393/11.5/G
100.0	120.0	14.5		TSE 472-393	TSE 472-393/G
100.0	125.0	14.5		TSE 492-393	
105.0	115.0	11.0		TSE 452-413	TSE 452-413/G
105.0	120.0	12.0		TSE 472-413	
105.0	120.0	13.5			TSD 472-413/13/G
105.0	120.0	15.5			TSD 472-413/15/G
105.0	125.0	12.5			TSE 492-413/G
105.0	125.0	14.5			TSE 492-413/2/G
106.0	116.0	8.0		TSE 457-417	
110.0	120.0	11.0			TSD 472-433/10.5/G
110.0	124.0	9.5		TSD 488-433/9	
110.0	125.0	11.5		TSD 492-433/11	
110.0	125.0	12.0	TGO 2533	TSE 492-433	TSE 492-433/G
110.0	130.0	10.5			TSD 511-433/10.5/G
110.0	130.0	12.5		TSE 511-433	TSE 511-433/G
110.0	130.0	14.5		TSE 511-433/1	
110.0	130.0	16.0			TSD 511-433/15/G
110.0	135.0	16.0			TSD 531-433/15/G
115.0	125.0	8.0		TSE 492-452	
115.0	130.0	10.5			TSD 511-452/10/G
115.0	130.0	12.0	TGO 2534		

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

Rod Packing

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
115.0	135.0	14.5			TSD 531-452/14/G
115.0	135.0	16.0			TSD 531-452/15/G
118.0	130.0	12.5		TSE 511-464	
120.0	130.0	11.0			TSD 511-472/10.5/G
120.0	130.0	12.5			TSD 511-472/12/G
120.0	132.7	10.0		TSE 522-472	TSE 522-472/G
120.0	135.0	12.5			TSE 531-472/G
120.0	140.0	12.5		TSE 551-472	TSE 551-472/G
120.0	140.0	16.0			TSD 551-472/15/G
120.0	145.0	13.0			TSE 570-472/G
123.0	133.0	8.0		TSD 523-484/7.5	
125.0	140.0	11.5		TSD 551-492/11	
125.0	140.0	12.0	TGO 2535		
125.0	140.0	12.5			TSE 551-492/G
125.0	145.0	15.0		TSE 570-492	TSE 570-492/G
125.0	150.0	14.5		TSE 590-492	TSE 590-492/G
125.0	150.0	16.0			TSD 590-492/15/G
126.0	136.0	8.0		TSE 535-496	
130.0	145.0	9.5			TSD 570-511/9/G
130.0	145.0	13.0			TSD 570-511/11.5/G
130.0	145.0	15.0		TSE 570-511	TSE 570-511/G
130.0	150.0	14.5		TSE 590-511	TSE 590-511/G
130.0	150.0	16.0			TSD 590-511/15/G
135.0	150.0	9.5			TSD 590-531/9/G
140.0	150.0	10.0		TSE 590-551	
140.0	150.0	11.0			TSD 590-551/10.5/G
140.0	150.0	12.5			TSD 590-551/12/G
140.0	155.0	13.0		TSE 610-551	
140.0	160.0	12.5			TSD 629-551/12/G
140.0	160.0	13.5			TSE 629-551/G
140.0	160.0	14.5		TSE 629-551/1	TSE 629-551/1/G
140.0	160.0	16.0	TGO 2536		
140.0	165.0	16.0			TSD 649-551/15/G
145.0	157.5	10.0		TSE 620-570	
150.0	165.0	13.0			TSD 649-590/12.5/G
150.0	170.0	14.5		TSE 669-590/1	TSE 669-590/1/G
150.0	170.0	16.0	TGO 2537		
150.0	180.0	20.5			TSE 708-590/G
155.0	170.0	9.5		TSE 669-610	
155.0	175.0	25.5			TSE 688-610/M/G

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference TGO	Reference SE	Reference SE/G
160.0	170.0	11.0			TSP 669-629/1/G
160.0	175.0	16.0		TSE 688-629	TSE 688-629/G
160.0	180.0	13.0			TSE 708-629/G
160.0	180.0	14.5			TSD 708-629/14/G
160.0	180.0	16.0	TGO 2538	TSE 708-629/A	TSE 708-629/A/G
160.0	185.0	16.0			TSD 728-629/15/G
160.0	185.0	18.5			TSE 728-629/1/G
170.0	182.7	10.0			TSD 719-669/9.5/G
170.0	182.7	11.0		TSE 719-669	
180.0	200.0	14.5		TSE 787-708	TSE 787-708/G
180.0	200.0	16.0	TGO 2539		TSE 787-708/A/G
180.0	200.0	16.0		TSE 787-708/1	TSE 787-708/1/G
180.0	210.0	20.5		TSE 826-708	
188.0	203.0	13.0			TSE 799-740/G
190.0	210.0	15.0			TSD 826-748/14.5/G
198.0	208.0	12.5			TSE 819-779/G
200.0	220.0	14.5			TSE 866-787/G
200.0	220.0	16.0	TGO 2540	TSE 866-787/A	
200.0	230.0	19.5		TSE 905-787	
210.0	230.0	14.5			TSD 905-826/G
210.0	240.0	22.5		TSE 944-826	
214.0	229.0	13.0		TSE 901-842	
220.0	245.0	16.0			TSD 964-866/11
225.0	255.0	22.5		TSE 1003-885	
230.0	260.0	20.0		TSE 1023-905	
238.0	258.0	15.5		TSE 1015-937	
250.0	285.0	16.5		TSE 1122-984	
250.0	290.0	25.4		TSE 1141-984	
260.0	290.0	20.0			TSE 1141-1023/G
280.0	320.0	22.5		TSE 1259-1102	
290.0	310.0	15.5		TSE 1220-1141	
310.0	330.0	16.5		TSE 1229-1220	
320.0	360.0	25.5		TSE 1417-1259	
340.0	380.0	25.0		TSD 1496-1338/25	TSD 1496-1338/25/G
350.0	385.0	25.4		TSE 1515-1377	
360.0	400.0	32.0		TSE 1574-1417	

* For order processing, the computer code will be
e.g. RP 005-012-06.4 TGO, RP 010-017-07 SE, RP 012-023-07.5 SE/G

Rod Packing - PSE

Rod Seals

PSE (Metric Size)

PSE

Material	Pressure (Bar)	Temp. (°C)	Speed (m/s)
NBR+Fabric - POM	700	-30 +120	0.5

- High sealing efficiency.
- Effective sealing during vibration and shock loading.
- Extrusion resistance at high pressure.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
d	C
< 60	4.0
60-120	5.0
120-180	6.5
180-250	7.5

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference (For order processing)	Reference	Reference
15.0	27.0	20.0	RP 015-027-20 PSE		SM 106-059/1AX
18.0	30.0	22.5	RP 018-030-22.5 PSE	PSE 118-071/KB	
20.0	33.0	20.0	RP 020-033-20 PSE		SM 129-078/1AX
22.0	35.0	20.0	RP 022-035-20 PSE	PSE 137-086/1	SM 137-086/1AX
25.0	37.0	22.5	RP 025-037-22.5 PSE	PSE 146-098/KB	
25.0	38.0	20.0	RP 025-038-20 PSE		SM 149-098/1AX
28.0	41.0	20.0	RP 028-041-20 PSE	PSE 161-110/1	SM 161-110/1AX
30.0	43.0	20.0	RP 030-043-20 PSE	PSE 169-118/1	SM 169-118/1AX
32.0	47.0	22.5	RP 032-047-22.5 PSE	PSE 185-125/1	SM 185-125/1AX
35.0	45.0	25.6	RP 035-045-25.6 PSE	PSE 177-137/1	SM 177-137/1AX
35.0	47.0	22.5	RP 035-047-22.5 PSE	PSE 185-137/1	SM 185-137/1AX
35.0	50.0	22.5	RP 035-050-22.5 PSE	PSE 196-137/1	SM 196-137/1AX
36.0	51.0	22.5	RP 036-051-22.5 PSE	PSE 200-141/1	SM 200-141/1AX
38.1	50.8	23.9	RP 038.1-050.8-23.9 PSE		SM 200-150/1AX
40.0	50.0	17.5	RP 040-050-17.5 PSE	PSE 196-157/1	
40.0	52.0	22.5	RP 040-052-22.5 PSE	PSE 204-157/1	SM 204-157/1AX
40.0	55.0	22.6	RP 040-055-22.6 PSE	PSE 216-157/1	SM 216-157/1AX
40.0	60.0	30.0	RP 040-060-30 PSE	PSE 236-157/1	SM 236-157/1AX
45.0	60.0	22.5	RP 045-060-22.5 PSE	PSE 236-177/1	SM 236-177/1AX
45.0	65.0	28.0	RP 045-065-028 PSE	PSE 255-177/1	SM 255-177/1AX
50.0	63.0	20.0	RP 050-063-20 PSE	PSE 248-196/1	SM 248-196/1AX
50.0	65.0	22.5	RP 050-065-22.5 PSE	PSE 255-196/1C	SM 255-196/1BX
50.0	65.0	24.5	RP 050-065-24.5 PSE	PSE 255-196/1A	SM 255-196/1AX
50.0	65.0	26.5	RP 050-065-26.5 PSE		SM 255-196/2AX
50.0	70.0	30.0	RP 050-070-30 PSE	PSE 275-196/1B	SM 275-196/1BX
50.0	70.0	31.9	RP 050-070-31.9 PSE	PSE 275-196/1A	SM 275-196/1AX
50.8	66.67	24.9	RP 050.8-066.67-24.9 PSE		SM 262-200/1AX
55.0	70.0	22.5	RP 055-070-22.5 PSE	PSE 275-216/2	SM 275-216/2AX
55.0	70.0	25.0	RP 055-070-25 PSE	PSE 275-216/1	SM 275-216/1AX
55.0	75.0	30.0	RP 055-075-30 PSE	PSE 295-216/2	SM 295-216/2AX
55.0	75.0	32.0	RP 055-075-32 PSE	PSE 295-216/1	SM 295-216/1AX
56.0	71.0	25.0	RP 056-071-25 PSE	PSE 279-220/1	SM 279-220/1AX
56.0	76.0	28.0	RP 056-076-28 PSE	PSE 299-220/1	SM 299-220/1AX
60.0	75.0	22.5	RP 060-075-22.5 PSE	PSE 295-236/2	SM 295-236/2AX
60.0	75.0	25.0	RP 060-075-25 PSE	PSE 295-236/1	SM 295-236/1AX
60.0	77.0	27.0	RP 060-077-27 PSE	PSE 303-236/1	SM 303-236/1AX
60.0	80.0	30.0	RP 060-080-30 PSE	PSE 314-236/1E	
60.0	80.0	32.0	RP 060-080-32 PSE	PSE 314-236/1B	
60.0	80.0	34.9	RP 060-080-34.90 PSE	PSE 314-236/1A	SM 314-236/1AX
63.0	83.0	27.0	RP 063-083-27 PSE		SM 326-248/1BX
63.0	83.0	28.0	RP 063-083-28 PSE	PSE 326-248/2	
63.0	83.0	29.0	RP 063-083-29.0 PSE	PSE 326-248/1	SM 326-248/1AX
63.5	82.55	26.6	RP 063.5-082.55-26.6 PSE		SM 325-250/1AX
65.0	85.0	29.0	RP 065-085-29 PSE	PSE 334-255/1	SM 334-255/1AX
70.0	83.0	25.0	RP 070-083-25 PSE		SM 326-275/1AX

Rod Packing - PSE

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference (For order processing)	Reference	Reference
70.0	85.0	22.5	RP 070-085-22.5 PSE	PSE 334-275/1A	SM 334-275/1AX
70.0	85.0	25.0	RP 070-085-25 PSE		SM 334-275/1BX
70.0	90.0	30.0	RP 070-090-30 PSE	PSE 354-275/1	SM 354-275/1AX
70.0	90.0	31.9	RP 070-090-31.9 PSE	PSE 354-275/2	SM 354-275/2AX
75.0	95.0	28.0	RP 075-095-28 PSE	PSE 374-295/2A	SM 374-295/2AX
75.0	95.0	30.0	RP 075-095-30 PSE	PSE 374-295/2C	SM 374-295/2CX
76.2	95.25	24.6	RP 076.2-095.25-24.6 PSE		SM 375-300/1AX
76.5	96.5	32.5	RP 076.5-096.5-32.5 PSE	PSE 379-301/1	SM 379-301/1AX
80.0	95.0	22.5	RP 080-095-22.5 PSE	PSE 374-314/KB	
80.0	100.0	30.0	RP 080-100-30 PSE	PSE 393-314/1	SM 393-314/1AX
85.0	98.0	25.0	RP 085-098-25 PSE	PSE 385-334/1	SM 385-334/1AX
85.0	100.0	22.5	RP 085-100-22.5 PSE	PSE 393-334/KB	
85.0	105.0	30.0	RP 085-105-30 PSE	PSE 413-334/1	SM 413-334/1AX
90.0	105.0	22.5	RP 090-105-22.5 PSE	PSE 413-354	
90.0	105.0	25.0	RP 090-105-25 PSE	PSE 413-354/1A	SM 413-354/1AX
90.0	105.0	33.5	RP 090-105-33.5 PSE	PSE 413-354/1B	SM 413-354/1BX
90.0	110.0	30.0	RP 090-110-30 PSE	PSE 433-354/1A	SM 433-354/1AX
90.0	110.0	32.5	RP 090-110-32.5 PSE	PSE 433-354/2	SM 433-354/2BX
95.0	110.0	22.5	RP 095-110-22.5 PSE	PSE 433-374/KB	
95.0	115.0	28.0	RP 095-115-28 PSE	PSE 452-374/1	SM 452-374/1AX
100.0	114.3	24.2	RP 100-114.3-24.2 PSE	PSE 450-393/1	SM 450-393/1AX
100.0	120.0	30.0	RP 100-120-30 PSE	PSE 472-393/1	SM 472-393/1AX
105.0	118.0	25.0	RP 105-118-25 PSE	PSE 464-413/1	SM 464-413/1AX
105.0	120.0	34.0	RP 105-120-34 PSE	PSE 472-413/1	SM 472-413/1AX
105.0	125.0	18.5	RP 105-125-18.5 PSE	PSE 492-413/1	
110.0	125.0	22.5	RP 110-125-22.5 PSE	PSE 492-433/KB	
110.0	130.0	32.5	RP 110-130-32.5 PSE	PSE 511-433/1	SM 511-433/1AX
110.0	132.0	36.5	RP 110-132-36.5 PSE	PSE 519-433/1	SM 519-433/1AX
115.0	130.0	22.5	RP 115-130-22.5 PSE	PSE 511-452/KB	SM 511-452/2AX
115.0	130.0	30.0	RP 115-130-30 PSE	PSE 511-452/1	SM 511-452/1AX
120.0	135.0	22.5	RP 120-135-22.5 PSE		SM 531-472/1AX
120.0	140.0	30.0	RP 120-140-30 PSE	PSE 551-472/1	SM 551-472/1AX
125.0	140.0	22.5	RP 125-140-22.5 PSE	PSE 551-492/KB	
125.0	145.0	29.6	RP 125-145-29.6 PSE	PSE 570-492/1	SM 570-492/1AX
127.0	142.0	22.5	RP 127-142-22.5 PSE	PSE 559-500/1	SM 559-500/1AX
130.0	150.0	28.0	RP 130-150-28 PSE	PSE 590-511/1	SM 590-511/1AX
135.0	150.0	22.5	RP 135-150-22.5 PSE	PSE 590-531/KB	
135.0	155.0	28.0	RP 135-155-28 PSE	PSE 610-531/1	SM 610-531/1AX
140.0	155.0	22.5	RP 140-155-22.5 PSE	PSE 610-551/KB	
140.0	160.0	22.5	RP 140-160-22.5 PSE	PSE 629-551/KB	
140.0	160.0	28.0	RP 140-160-28 PSE	PSE 629-551/1	SM 629-551/1AX
145.0	165.0	22.5	RP 145-165-22.5 PSE	PSE 649-570/KB	
145.0	165.0	28.0	RP 145-165-28 PSE		SM 649-570/1AX
150.0	165.0	22.5	RP 150-165-22.5 PSE	PSE 649-590/KB	
150.0	170.0	28.0	RP 150-170-28 PSE	PSE 669-590/1	SM 669-590/1AX

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference (For order processing)	Reference	Reference
155.0	175.0	22.5	RP 155-175-22.5 PSE	PSE 688-610/KB	
155.0	175.0	28.0	RP 155-175-28 PSE		SM 688-610/1AX
158.5	180.0	28.0	RP 158.5-180-28 PSE		SM 708-624/1AX
160.0	180.0	28.0	RP 160-180-28 PSE	PSE 708-629/1	SM 708-629/1AX
165.0	185.0	30.0	RP 165-185-30 PSE	PSE 728-649/1	SM 729-649/1AX
170.0	185.0	22.5	RP 170-185-22.5 PSE	PSE 728-669/KB	
170.0	195.0	35.0	RP 170-195-35 PSE	PSE 767-669/1	SM 767-669/1AX
175.0	195.0	22.5	RP 175-195-22.5 PSE	PSE 767-688/KB	
175.0	195.0	30.0	RP 175-195-30 PSE	PSE 767-688/1KB	
175.0	200.0	35.0	RP 175-200-35 PSE	PSE 787-688/1	
177.0	192.0	22.5	RP 177-192-22.5 PSE	PSE 756-697/KB	
180.0	205.0	35.0	RP 180-205-35 PSE	PSE 807-708/1	SM 807-708/1AX
185.0	200.0	22.5	RP 185-200-22.5 PSE	PSE 787-728/KB	SM 787-728/2AX
185.0	210.0	35.0	RP 185-210-35 PSE	PSE 826-728/1	SM 826-728/1AX
187.0	202.0	22.5	RP 187-202-22.5 PSE	PSE 795-736/KB	
190.0	215.0	35.0	RP 190-215-35 PSE	PSE 846-748/1	SM 846-748/2AX
192.0	210.0	22.5	RP 192-210-22.5 PSE	PSE 826-756/KB	
195.0	210.0	22.5	RP 195-210-22.5 PSE	PSE 826-767/KB	
195.0	220.0	35.0	RP 195-220-35 PSE	PSE 866-767/1	
200.0	215.0	22.5	RP 200-215-22.5 PSE	PSE 846-787/KB	
200.0	225.0	35.0	RP 200-225-35 PSE	PSE 885-787/1	SM 885-787/1AX
205.0	230.0	35.0	RP 205-230-35 PSE	PSE 905-807/1	
207.0	225.0	22.5	RP 207-225-22.5 PSE	PSE 886-815/KB	
210.0	230.0	22.5	RP 210-230-22.5 PSE	PSE 905-827/KB	
210.0	235.0	35.0	RP 210-235-35 PSE	PSE 925-826/1	
212.0	230.0	22.5	RP 212-230-22.5 PSE	PSE 905-834/KB	
212.0	232.0	22.5	RP 212-232-22.5 PSE	PSE 913-834/KB	
215.0	240.0	35.0	RP 215-240-35 PSE		SM 944-846/1AX
220.0	240.0	22.5	RP 220-240-22.5 PSE	PSE 945-866/KB	
220.0	245.0	35.0	RP 220-245-35 PSE	PSE 964-866/1	SM 964-866/1AX
225.0	240.0	22.5	RP 225-240-22.5 PSE	PSE 945-886/KB	
225.0	250.0	35.0	RP 225-250-35 PSE	PSE 984-886/1	SM 984-886/1AX
230.0	250.0	22.5	RP 230-250-22.5 PSE	PSE 984-904/KB	
230.0	255.0	35.0	RP 230-255-35 PSE	PSE 1004-904/1	SM 1003-905/1AX
235.0	255.0	22.5	RP 235-255-22.5 PSE	PSE 1004-925/KB	
240.0	265.0	35.0	RP 240-265-35 PSE	PSE 1043-945/1	SM 1043-945/1AX
250.0	275.0	35.0	RP 250-275-35 PSE	PSE 1082-984/1	SM 1082-984/1AX
260.0	280.0	22.5	RP 260-280-22.5 PSE	PSE 1102-1024/KB	
260.0	280.0	30.0	RP 260-280-30 PSE		SM 1102-1024/1AX
265.0	290.0	35.0	RP 265-290-35 PSE		SM 1141-1043/1AX
275.0	300.0	35.0	RP 275-300-35 PSE	PSE 1181-1082/1	SM 1181-1082/1AX
280.0	305.0	35.0	RP 280-305-35 PSE	PSE 1201-1102/1	SM 1201-1102/1AX
283.0	303.0	22.5	RP 283-303-22.5 PSE	PSE 1193-1114/KB	
300.0	325.0	35.0	RP 300-325-35 PSE	PSE 1279-1181/1	SM 1279-1181/1AX
335.0	360.0	35.0	RP 335-360-35 PSE		SM 1417-1318/1AX

PTFE Seal - 2100

Rod Seals

SP-11-2100, DS 19 (Metric Size)

SP-11-2100, DS 19

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE-Stainless Spring	450	-150 +225	15

- Resistant to most fluids and chemicals.
- Low coefficients of friction.
- Can handle rapid changes in temperature.
- High temperature range.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Installation Dimensions for grooves made for O-ring without back-up ring

Series No.	Rod Dia.		Groove Dia.	Groove Width.	Radius	Step Height	Radial Clearance F max.*			
	Recommended Range	Extended Range	D	L	r1	X min	20 Bar	100 Bar	200 Bar	400 Bar
2100	3 - 9.9	3 - 40	d + 2.9	2.4	0.4	0.4	0.20	0.10	0.08	0.05
2110	10 - 19.9	6 - 200	d + 4.5	3.6	0.4	0.6	0.25	0.15	0.10	0.07
2120	20 - 39.9	10 - 400	d + 6.2	4.8	0.6	0.7	0.35	0.20	0.15	0.08
2130	40 - 119.9	20 - 700	d + 9.4	7.1	0.8	0.8	0.50	0.25	0.20	0.10
2140	120 - 630.0	35 -1600	d +12.2	9.5	0.8	0.9	0.60	0.30	0.25	0.12

Installation Dimensions for grooves made for O-ring with one back-up ring

Series No.	Rod Dia.		Groove Dia.	Groove Width.	Radius	Step Height	Radial Clearance F max.*			
	Recommended Range	Extended Range	D	L	r1	X min	20 Bar	100 Bar	200 Bar	400 Bar
2300	3 - 9.9	3 - 40	d + 2.9	3.80	0.4	0.4	0.20	0.10	0.08	0.05
2310	10 - 19.9	6 - 200	d + 4.5	4.65	0.4	0.6	0.25	0.15	0.10	0.07
2320	20 - 39.9	10 - 400	d + 6.2	5.70	0.6	0.7	0.35	0.20	0.15	0.08
2330	40 - 119.9	20 - 700	d + 9.4	8.50	0.8	0.8	0.50	0.25	0.20	0.10
2340	120 - 630.0	35 -1600	d + 12.2	11.20	0.8	0.9	0.60	0.30	0.25	0.12

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Reference (For order processing)
d	D	L	
3.0	5.9	2.4	SP-11-2100-0030
4.0	6.9	2.4	SP-11-2100-0040
5.0	7.9	2.4	SP-11-2100-0050
6.0	8.9	2.4	SP-11-2100-0060
8.0	10.9	2.4	SP-11-2100-0080
10.0	14.5	3.6	SP-11-2110-0100
12.0	16.5	3.6	SP-11-2110-0120
14.0	18.5	3.6	SP-11-2110-0140
15.0	19.5	3.6	SP-11-2110-0150
16.0	20.5	3.6	SP-11-2110-0160
18.0	22.5	3.6	SP-11-2110-0180
20.0	26.2	4.8	SP-11-2120-0200
22.0	28.2	4.8	SP-11-2120-0220
25.0	31.2	4.8	SP-11-2120-0250
28.0	34.2	4.8	SP-11-2120-0280

PTFE Seal - 2100

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Reference (For order processing)
d	D	L	
30.0	36.2	4.8	SP-11-2120-0300
32.0	38.2	4.8	SP-11-2120-0320
35.0	41.2	4.8	SP-11-2120-0350
36.0	42.2	4.8	SP-11-2120-0360
40.0	49.4	7.1	SP-11-2130-0400
42.0	51.4	7.1	SP-11-2130-0420
45.0	54.4	7.1	SP-11-2130-0450
48.0	57.4	7.1	SP-11-2130-0480
50.0	59.4	7.1	SP-11-2130-0500
52.0	61.4	7.1	SP-11-2130-0520
55.0	64.4	7.1	SP-11-2130-0550
56.0	65.4	7.1	SP-11-2130-0560
60.0	69.4	7.1	SP-11-2130-0600
63.0	72.4	7.1	SP-11-2130-0630
65.0	74.4	7.1	SP-11-2130-0650
70.0	79.4	7.1	SP-11-2130-0700
75.0	84.4	7.1	SP-11-2130-0750
80.0	89.4	7.1	SP-11-2130-0800
85.0	94.4	7.1	SP-11-2130-0850
90.0	99.4	7.1	SP-11-2130-0900
95.0	104.4	7.1	SP-11-2130-0950
100.0	109.4	7.1	SP-11-2130-1000
105.0	114.4	7.1	SP-11-2130-1050
110.0	119.4	7.1	SP-11-2130-1100
115.0	124.4	7.1	SP-11-2130-1150
120.0	132.2	9.5	SP-11-2140-1200
125.0	137.2	9.5	SP-11-2140-1250
130.0	142.2	9.5	SP-11-2140-1300
135.0	147.2	9.5	SP-11-2140-1350
140.0	152.2	9.5	SP-11-2140-1400
150.0	162.2	9.5	SP-11-2140-1500
160.0	172.2	9.5	SP-11-2140-1600
170.0	182.2	9.5	SP-11-2140-1700
180.0	192.2	9.5	SP-11-2140-1800
190.0	202.2	9.5	SP-11-2140-1900
200.0	212.2	9.5	SP-11-2140-2000
210.0	222.2	9.5	SP-11-2140-2100
220.0	232.2	9.5	SP-11-2140-2200
230.0	242.2	9.5	SP-11-2140-2300
240.0	252.2	9.5	SP-11-2140-2400

SPEC SEAL Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Reference (For order processing)
d	D	L	
250.0	262.2	9.5	SP-11-2140-2500
280.0	292.2	9.5	SP-11-2140-2800
300.0	312.2	9.5	SP-11-2140-3000
320.0	332.2	9.5	SP-11-2140-3200
350.0	362.2	9.5	SP-11-2140-3500

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. *SP-11 - 2100 - 0060*

Seal ring material code

Series No.

Rod diameter x 10

SPEC SEAL
Seals & O-rings Specialist

Rubber U-Cup - C1

Rod Seals

C1 (Metric Size)

C1

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	160	-35 +100	0.5

- Excellent sealing performance.
- Extremely low friction.
- Small seal housing designed.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width L	Prefix No.	Reference
2.0	7.0	3.5	4.0	0003	UC 002-007-03.5 C1
3.0	7.0	3.0	3.5	0005	UC 003-007-03 C1
3.0	9.0	4.5	5.0	0009	UC 003-009-04.5 C1
3.0	10.0	5.0	5.5	0011	UC 003-010-05 C1
4.0	8.0	3.0	3.5	0013	UC 004-008-03 C1
4.0	9.0	3.5	4.0	0016	UC 004-009-03.5 C1
4.0	10.0	4.2	4.7	0019	UC 004-010-04.2 C1
4.0	12.0	4.5	5.0	0022	UC 004-012-04.5 C1
4.0	12.0	5.5	6.0	0024	UC 004-012-05.5 C1
4.0	14.0	5.8	6.3	0028	UC 004-014-05.8 C1
4.5	8.0	3.0	3.5	0032	UC 004.5-008-03 C1
5.0	9.0	2.5	3.0	0035	UC 005-009-02.5 C1
5.0	10.0	4.0	4.5	0038	UC 005-010-04 C1
5.0	12.0	4.5	5.0	0041	UC 005-012-04.5 C1
6.0	10.0	3.0	3.5	0055	UC 006-010-03 C1
6.0	12.0	4.2	4.7	0058	UC 006-012-04.2 C1
6.0	13.0	5.0	5.5	0059	UC 006-013-05 C1
6.0	15.0	7.0	7.5	0062	UC 006-015-07 C1
6.0	16.0	5.0	5.5	0065	UC 006-016-05 C1
7.0	13.0	4.0	4.5	0070	UC 007-013-04 C1
8.0	14.0	4.0	4.5	0074	UC 008-014-04 C1
8.0	14.5	4.5	5.0	0077	UC 008-014.5-04.5 C1
8.0	16.0	5.5	6.0	0080	UC 008-016-05.5 C1
8.0	18.0	8.0	8.5	0083	UC 008-018-08 C1
9.0	14.0	3.5	4.0	0087	UC 009-014-03.5 C1
9.3	14.0	3.0	3.5	0090	UC 009.3-014-03 C1
9.5	18.5	7.0	7.5	0094	UC 009.5-018.5-07 C1
10.0	13.6	2.3	2.7	1002	UC 010-013.6-2.3 C1
10.0	15.0	3.5	4.0	1005	UC 010-015-03.5 C1
10.0	16.0	4.5	5.0	1008	UC 010-016-04.5 C1
10.0	16.0	6.0	6.5	1011	UC 010-016-06 C1
10.0	18.0	5.5	6.0	1015	UC 010-018-05.5 C1
10.0	20.0	7.0	7.5	1018	UC 010-020-07 C1
10.4	15.2	3.5	4.0	1020	UC 010.4-015.2-03.5 C1
11.0	17.0	4.0	4.5	1022	UC 011-017-04 C1
11.0	18.0	4.5	5.0	1025	UC 011-018-04.5 C1
12.0	18.5	4.5	5.0	1028	UC 012-018.5-4.5 C1
12.0	19.0	4.5	5.0	1030	UC 012-019-04.5 C1
12.0	20.0	5.5	6.0	1033	UC 012-020-05.5 C1
12.75	19.2	3.8	4.3	1035	UC 012.75-019.2-03.8 C1

* For order processing, the computer code will be
e.g. UC 002-007-03.5 C1

Rubber U-Cup - C1

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Prefix No.	Reference
d	D	H	L		
13.0	17.5	2.8	3.3	1036	UC 013-017.5-02.8 C1
13.8	22.0	5.5	6.0	1037	UC 013.8-022-05.5 C1
14.0	19.0	3.5	4.0	1039	UC 014-019-03.5 C1
14.0	20.0	4.8	5.3	1040	UC 014-020-04.8 C1
14.0	20.0	5.5	6.0	1041	UC 014-020-05.5 C1
14.0	25.0	8.0	8.5	1042	UC 014-025-08 C1
15.0	22.0	5.0	5.5	1044	UC 015-022-05 C1
15.8	24.0	5.5	6.0	1047	UC 015.8-024-05.5 C1
16.0	22.5	4.5	5.0	1049	UC 016-022.5-04.5 C1
16.0	23.0	5.5	6.0	1051	UC 016-023-05.5 C1
16.0	23.5	5.5	6.0	1052	UC 016-023.5-05.5 C1
16.0	24.0	5.5	6.0	1053	UC 016-024-05.5 C1
16.0	26.0	7.0	7.5	1056	UC 016-026-07 C1
16.0	27.0	7.5	8.0	1058	UC 016-027-07.5 C1
17.0	25.0	5.5	6.0	1060	UC 017-025-05.5 C1
18.0	25.0	4.5	5.0	1062	UC 018-025-04.5 C1
18.0	25.0	5.5	6.0	1063	UC 018-025-05.5 C1
18.0	26.0	5.5	6.0	1066	UC 018-026-05.5 C1
18.0	30.0	8.5	9.5	1070	UC 018-030-08.5 C1
18.5	25.5	5.5	6.0	1074	UC 018.5-025.5-05.5 C1
19.0	25.0	5.0	5.5	1079	UC 019-025-05 C1
20.0	26.0	4.0	4.5	2003	UC 020-026-04 C1
20.0	26.0	4.8	5.3	2005	UC 020-026-04.8 C1
20.0	28.0	5.5	6.0	2009	UC 020-028-05.5 C1
20.0	28.0	8.0	8.5	2013	UC 020-028-08 C1
20.0	30.0	7.0	7.5	2020	UC 020-030-07 C1
20.0	32.0	7.0	7.5	2022	UC 020-032-07 C1
22.0	29.0	5.5	6.0	2025	UC 022-029-05.5 C1
22.0	30.0	5.5	6.0	2029	UC 022-030-05.5 C1
22.0	32.0	7.0	7.5	2031	UC 022-032-07 C1
22.0	32.0	8.0	8.5	2030	UC 022-032-08 C1
22.0	34.0	8.5	9.5	2033	UC 022-034-08.5 C1
23.0	31.0	5.5	6.0	2038	UC 023-031-05.5 C1
24.0	32.0	5.5	6.0	2043	UC 024-032-05.5 C1
25.0	32.0	5.5	6.0	2053	UC 025-032-05.5 C1
25.0	33.0	5.5	6.0	2058	UC 025-033-05.5 C1
25.0	33.0	8.0	8.5	2061	UC 025-033-08 C1
25.0	35.0	6.0	6.5	2064	UC 025-035-06 C1
25.0	35.0	7.0	7.5	2065	UC 025-035-07 C1
25.0	36.0	8.0	8.5	2066	UC 025-036-08 C1

* For order processing, the computer code will be
e.g. UC 002-007-03.5 C1

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width L	Prefix No.	Reference
25.0	37.0	8.5	9.5	2069	UC 025-037-08.5 C1
25.0	40.0	10.0	11.0	2075	UC 025-040-10 C1
26.0	36.0	7.0	7.5	2078	UC 026-036-07 C1
28.0	36.0	5.5	6.0	2085	UC 028-036-05.5 C1
28.0	38.0	7.0	7.5	2089	UC 028-038-07 C1
28.0	40.0	8.5	9.5	2095	UC 028-040-08.5 C1
30.0	38.0	5.5	6.0	3005	UC 030-038-05.5 C1
30.0	38.0	8.0	8.5	3010	UC 030-038-08 C1
30.0	40.0	7.0	7.5	3015	UC 030-040-07 C1
30.0	42.0	8.0	8.5	3019	UC 030-042-08 C1
30.0	42.0	8.5	9.5	3020	UC 030-042-08.5 C1
32.0	40.0	5.5	6.0	3025	UC 032-040-05.5 C1
32.0	42.0	7.0	7.5	3030	UC 032-042-07 C1
32.0	45.0	10.0	11.0	3032	UC 032-045-10 C1
33.0	43.0	7.0	7.5	3035	UC 033-043-07 C1
34.0	44.0	7.0	7.5	3040	UC 034-044-07 C1
35.0	43.0	8.0	8.5	3045	UC 035-043-08 C1
35.0	45.0	7.0	7.5	3050	UC 035-045-07 C1
36.0	46.0	7.0	7.5	3055	UC 036-046-07 C1
36.0	50.0	10.0	11.0	3057	UC 036-050-10 C1
37.0	47.0	7.0	7.5	3059	UC 037-047-07 C1
38.0	48.0	7.0	7.5	3060	UC 038-048-07 C1
40.0	48.0	5.5	6.0	4005	UC 040-048-05.5 C1
40.0	48.0	8.0	8.5	4010	UC 040-048-08 C1
40.0	50.0	7.0	7.5	4015	UC 040-050-07 C1
40.0	52.0	8.5	9.5	4020	UC 040-052-08.5 C1
42.0	52.0	7.0	7.5	4025	UC 042-052-07 C1
44.0	54.0	7.0	7.5	4030	UC 044-054-07 C1
45.0	55.0	7.0	7.5	4035	UC 045-055-07 C1
45.0	60.0	10.0	11.0	4040	UC 045-060 10 C1
46.0	56.0	7.0	7.5	4046	UC 046-056-07 C1
47.0	57.0	7.0	7.5	4055	UC 047-057-07 C1
48.0	58.0	7.0	7.5	4060	UC 048-058-07 C1
50.0	58.0	8.0	8.5	5005	UC 050-058-08 C1
50.0	60.0	7.0	7.5	5010	UC 050-060-07 C1
50.0	63.0	8.5	9.5	5015	UC 050-063-08.5 C1
50.0	63.0	12.0	13.0	5017	UC 050-063-12 C1
50.0	66.0	11.0	12.0	5020	UC 050-066-11 C1
54.0	64.0	7.0	7.5	5035	UC 054-064-07 C1
55.0	65.0	7.0	7.5	5040	UC 055-065-07 C1

* For order processing, the computer code will be
e.g. UC 002-007-03.5 C1

Rubber U-Cup - C1

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width	Prefix No.	Reference
d	D	H	L		
56.0	66.0	7.0	7.5	5043	UC 056-066-07 C1
56.0	70.0	12.0	13.0	5044	UC 056-070-12 C1
57.0	67.0	7.0	7.5	5053	UC 057-067-07 C1
58.0	68.0	7.0	7.5	5058	UC 058-068-07 C1
59.0	71.0	7.5	8.0	5085	UC 059-071-07.5 C1
60.0	72.0	8.5	9.5	6005	UC 060-072-08.5 C1
60.0	80.0	14.0	15.0	6010	UC 060-080-14 C1
63.0	73.0	7.0	7.5	6025	UC 063-073-07 C1
63.0	75.0	8.5	9.5	6035	UC 063-075-08.5 C1
63.0	80.0	16.0	17.0	6037	UC 063-080-16 C1
64.0	76.0	7.5	8.0	6040	UC 064-076-07.5 C1
65.0	77.0	8.5	9.5	6055	UC 065-077-08.5 C1
68.0	80.0	8.5	9.5	6070	UC 068-080-08.5 C1
70.0	82.0	8.5	9.5	7003	UC 070-082-08.5 C1
75.0	87.0	8.5	9.5	7020	UC 075-087-08.5 C1
75.0	95.0	14.0	15.0	7030	UC 075-095-14 C1
80.0	90.0	7.0	7.5	8010	UC 080-090-07 C1
80.0	92.0	7.5	8.0	8013	UC 080-092-07.5 C1
80.0	92.0	8.5	9.5	8015	UC 080-092-08.5 C1
80.0	100.0	14.0	15.0	8025	UC 080-100-14 C1
85.0	97.0	8.5	9.5	8040	UC 085-097-08.5 C1
85.0	100.0	10.0	11.0	8045	UC 085-100-10 C1
88.0	100.0	8.5	9.5	8070	UC 088-100-08.5 C1
90.0	102.0	8.5	9.5	9015	UC 090-102-08.5 C1
90.0	110.0	16.0	17.0	9018	UC 090-110-16 C1
95.0	107.0	8.5	9.5	9035	UC 095-107-08.5 C1
100.0	110.0	7.0	7.5	A010	UC 100-110-07 C1
100.0	115.0	10.0	11.0	A015	UC 100-115-10 C1
105.0	120.0	10.0	11.0	A051	UC 105-120-10 C1
105.0	125.0	12.0	13.0	A055	UC 105-125-12 C1
110.0	125.0	10.0	11.0	B015	UC 110-125-10 C1
110.0	130.0	14.0	15.0	B020	UC 110-130-14 C1
115.0	130.0	10.0	11.0	B040	UC 115-130-10 C1
115.0	135.0	14.0	15.0	B045	UC 115-135-14 C1
120.0	135.0	10.0	11.0	C015	UC 120-135-10 C1
120.0	140.0	14.0	15.0	C020	UC 120-140-14 C1
125.0	140.0	10.0	11.0	C035	UC 125-140-10 C1
125.0	145.0	12.0	13.0	C037	UC 125-145-12 C1
127.0	145.0	14.0	15.0	C045	UC 127-145-14 C1
128.0	148.0	14.0	15.0	C060	UC 128-148-14 C1

* For order processing, the computer code will be
e.g. UC 002-007-03.5 C1

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height H	Groove Width L	Prefix No.	Reference
130.0	145.0	10.0	11.0	D015	UC 130-145-10 C1
130.0	150.0	14.0	15.0	D020	UC 130-150-14 C1
135.0	150.0	10.0	11.0	D035	UC 135-150-10 C1
140.0	160.0	14.0	15.0	E015	UC 140-160-14 C1
142.0	157.0	10.0	11.0	E035	UC 142-157-10 C1
145.0	165.0	12.0	13.0	E049	UC 145-165-12 C1
145.0	165.0	13.0	14.0	E050	UC 145-165-13 C1
150.0	170.0	14.0	15.0	F020	UC 150-170-14 C1
154.0	176.0	15.5	16.5	F040	UC 154-176-15.5 C1
155.0	170.0	10.0	11.0	F053	UC 155-170-10 C1
155.0	175.0	14.0	15.0	F055	UC 155-175-14 C1
160.0	180.0	14.0	15.0	G015	UC 160-180-14 C1
160.0	184.0	15.0	16.0	G024	UC 160-184-15 C1
166.0	188.0	15.5	16.5	G040	UC 166-188-15.5 C1
170.0	190.0	14.0	15.0	H007	UC 170-190-14 C1
170.0	194.0	15.0	16.0	H010	UC 170-194-15 C1
180.0	200.0	14.0	15.0	J005	UC 180-200-14 C1
185.0	210.0	17.5	18.5	J025	UC 185-210-17.5 C1
185.0	215.0	20.0	21.0	J032	UC 185-215-20 C1
190.0	210.0	14.0	15.0	K010	UC 190-210-14 C1
200.0	220.0	14.0	15.0	L015	UC 200-220-14 C1
200.0	230.0	15.0	16.0	L025	UC 200-230-15 C1
210.0	230.0	14.0	15.0	L040	UC 210-230-14 C1
220.0	240.0	14.0	15.0	M015	UC 220-240-14 C1
220.0	250.0	20.0	21.0	M017	UC 220-250-20 C1
225.0	250.0	14.0	15.0	M020	UC 225-250-14 C1
235.0	265.0	21.0	22.0	M030	UC 235-265-21 C1
238.0	260.0	15.0	16.0	M039	UC 238-260-15 C1
240.0	270.0	20.0	21.0	N035	UC 240-270-20 C1
260.0	290.0	21.0	22.0	O010	UC 260-290-21 C1
280.0	310.0	20.0	21.0	O031	UC 280-310-20 C1
320.0	350.0	20.0	21.0	Q050	UC 320-350-20 C1

* For order processing, the computer code will be
e.g. UC 002-007-03.5 C1

Rubber U-Cup - GNY

Rod Seals

GNY (Metric Size)

GNY

Material	Pressure (Bar)	Temp. (°C)	Speed (m/s)
NBR	175 (250)	-30 +100	1 (0.5)

- High wear resistance.
- Radial force resistance.
- Improve sealing performance for good elastic seal materials.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 μm	≤ 4 μm
Surface of housing	≤ 1.8 μm	≤ 10 μm
Sides of housing	≤ 3.0 μm	≤ 16 μm

Chamfers	
d	C
18-28	3.5
28-45	4.0
45-90	5.0
90-180	6.0

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width		Diameter	Reference (For order processing)
d	D	H	L	L1*	d1	
18.0	26.0	5.0	6.0	7.5	18.5	GNY-018
20.0	28.0	5.0	6.0	7.5	20.5	GNY-020
22.0	30.0	5.0	6.0	7.5	22.5	GNY-022
25.0	33.0	5.0	6.0	7.5	25.5	GNY-025
28.0	36.0	5.0	6.0	7.5	28.5	GNY-028
30.0	40.0	6.0	7.0	9.0	30.5	GNY-030
32.0	42.0	6.0	7.0	9.0	32.5	GNY-032
35.0	45.0	6.0	7.0	9.0	35.5	GNY-035
36.0	46.0	6.0	7.0	9.0	36.5	GNY-036
40.0	50.0	6.0	7.0	9.0	40.5	GNY-040
45.0	55.0	6.0	7.0	9.0	45.5	GNY-045
50.0	63.0	8.0	9.0	11.5	50.5	GNY-050
55.0	68.0	8.0	9.0	11.5	55.6	GNY-055
56.0	69.0	8.0	9.0	11.5	56.6	GNY-056
60.0	73.0	8.0	9.0	11.5	60.6	GNY-060
63.0	76.0	8.0	9.0	11.5	63.6	GNY-063
65.0	78.0	8.0	9.0	11.5	65.6	GNY-065
70.0	85.0	9.0	10.0	12.5	70.6	GNY-070
75.0	90.0	9.0	10.0	12.5	75.6	GNY-075
80.0	95.0	9.0	10.0	12.5	80.6	GNY-080
90.0	105.0	9.0	10.0	12.5	90.6	GNY-090
100.0	120.0	12.0	13.0	16.0	100.6	GNY-100
110.0	130.0	12.0	13.0	16.0	110.6	GNY-110
125.0	145.0	12.0	13.0	16.0	125.7	GNY-125
140.0	160.0	12.0	13.0	16.0	140.7	GNY-140
160.0	180.0	12.0	13.0	16.0	160.7	GNY-160
180.0	200.0	12.0	13.0	16.0	180.7	GNY-180

* L1 Groove for GNY used with 1 back up ring can stand pressure up to 250 Bar

Rubber U-Cup - RNY

Rod Seals

RNY (Metric Size)

RNY

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	140 (210)	-25 +100	1 (0.5)

- Rod application.
- Highly elastic compound.
- Good sealing performance against eccentric movements.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
d	C
18-28	3.5
28-45	4.0
45-90	5.0
90-180	6.0

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width		Diameter	Reference (For order processing)
d	D	H	L	L1*	d1	
16.0	24.0	5.1	5.7	6.7	16.4	RNY-016
18.0	26.0	5.1	5.7	6.7	18.4	RNY-018
20.0	28.0	5.1	5.7	6.7	20.4	RNY-020
22.0	30.0	5.1	5.7	6.7	22.4	RNY-022
22.4	30.0	5.1	5.7	6.7	22.8	RNY-022.4
25.0	33.0	5.1	5.7	6.7	25.4	RNY-025
28.0	35.5	5.1	5.7	6.7	28.4	RNY-028
30.0	40.0	6.2	7.0	8.5	30.5	RNY-030
31.5	41.5	6.2	7.0	8.5	32.0	RNY-031.5
32.0	42.0	6.2	7.0	8.5	32.5	RNY-032
35.0	45.0	6.2	7.0	8.5	35.5	RNY-035
35.5	45.0	6.2	7.0	8.5	36.0	RNY-035.5
36.0	46.0	6.2	7.0	8.5	36.5	RNY-036
40.0	50.0	6.2	7.0	8.5	40.5	RNY-040
45.0	55.0	6.2	7.0	8.5	45.5	RNY-045
45.0	56.0	7.2	8.0	9.5	45.5	RNY-045A
50.0	60.0	6.2	7.0	8.5	50.5	RNY-050
55.0	65.0	6.2	7.0	8.5	55.6	RNY-055
56.0	66.0	6.2	7.0	8.5	56.6	RNY-056
60.0	70.0	6.2	7.0	8.5	60.6	RNY-060
60.0	71.0	7.2	8.0	9.5	60.6	RNY-060A
63.0	73.0	6.2	7.0	8.5	63.6	RNY-063
65.0	75.0	6.2	7.0	8.5	65.6	RNY-065
65.0	78.0	8.2	9.0	11.0	65.6	RNY-065B
70.0	80.0	6.2	7.0	8.5	70.6	RNY-070
70.0	85.0	9.2	10.0	12.0	70.6	RNY-070B
71.0	80.0	6.2	7.0	8.5	71.6	RNY-071
75.0	85.0	6.2	7.0	8.5	75.6	RNY-075
75.0	90.0	9.2	10.0	12.0	75.6	RNY-075B
80.0	90.0	6.2	7.0	8.5	80.6	RNY-080
80.0	95.0	9.2	10.0	12.0	80.6	RNY-080B
85.0	100.0	9.2	10.0	12.0	85.6	RNY-085
90.0	105.0	9.2	10.0	12.0	90.6	RNY-090
100.0	115.0	9.2	10.0	12.0	100.6	RNY-100
110.0	125.0	9.2	10.0	12.0	110.6	RNY-110
112.0	125.0	8.7	10.0	12.0	112.6	RNY-112
125.0	140.0	9.2	10.0	12.0	125.6	RNY-125
140.0	155.0	9.2	10.0	12.0	140.6	RNY-140
160.0	175.0	9.2	10.0	12.0	160.6	RNY-160
180.0	200.0	12.2	13.0	15.5	180.7	RNY-180

* L1 Groove for RNY used with 1 back up ring can stand pressure up to 280 Bar

Rubber U-Cup - SNY

Rod Seals

SNY (Metric Size)

SNY

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR	210	-45 +100	0.5

- High pressure applications.
- High frequency conditions.
- Exceptional low stick slip.
- Usable both regular and severe cold environments.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers

d	C
18-28	3.5
28-45	4.0
45-90	5.0
90-180	6.0

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width		Diameter	Reference (For order processing)
d	D	H	L	L1*	d1	
14.0	22.0	5.0	5.7	6.7	14.4	SNY-14
18.0	26.0	5.0	5.7	6.7	18.4	SNY-18
20.0	28.0	5.0	5.7	6.7	20.4	SNY-20
25.0	33.0	5.0	5.7	6.7	25.4	SNY-25
28.0	35.5	5.0	5.7	6.7	28.4	SNY-28
30.0	40.0	6.0	7.0	8.5	30.5	SNY-30
31.5	41.5	6.0	7.0	8.5	32.0	SNY-31.5
35.0	45.0	6.0	7.0	8.5	35.5	SNY-35
35.5	45.0	6.0	7.0	8.5	36.0	SNY-35.5
40.0	50.0	6.0	7.0	8.5	40.5	SNY-40
45.0	55.0	6.0	7.0	8.5	45.5	SNY-45
45.0	56.0	7.0	8.0	9.5	45.5	SNY-45A
50.0	60.0	6.0	7.0	8.5	50.5	SNY-50
55.0	65.0	6.0	7.0	8.5	55.6	SNY-55
56.0	66.0	6.0	7.0	8.5	56.6	SNY-56
60.0	70.0	6.0	7.0	8.5	60.6	SNY-60
60.0	71.0	7.0	8.0	9.5	60.6	SNY-60A
63.0	73.0	6.0	7.0	8.5	63.6	SNY-63
65.0	75.0	6.0	7.0	8.5	65.5	SNY-65
70.0	85.0	9.0	10.0	12.0	70.6	SNY-70A
70.0	80.0	6.0	7.0	8.5	70.6	SNY-70C
75.0	85.0	6.0	7.0	8.5	75.6	SNY-75
75.0	90.0	9.0	10.0	12.0	75.6	SNY-75A
80.0	95.0	9.0	10.0	12.0	80.6	SNY-80A
80.0	90.0	6.0	7.0	8.5	80.6	SNY-80C
85.0	100.0	9.0	10.0	12.0	85.6	SNY-85
90.0	105.0	9.0	10.0	12.0	90.6	SNY-90
95.0	110.0	9.0	10.0	12.0	95.6	SNY-95
100.0	115.0	9.0	10.0	12.0	100.6	SNY-100
105.0	120.0	9.0	10.0	12.0	105.6	SNY-105
110.0	125.0	9.0	10.0	12.0	110.6	SNY-110
115.0	130.0	8.5	9.5	11.5	115.6	SNY-115B
125.0	140.0	9.0	10.0	12.0	125.7	SNY-125
140.0	155.0	9.0	10.0	12.0	140.7	SNY-140
150.0	165.0	9.0	10.0	12.0	150.7	SNY-150
160.0	175.0	9.0	10.0	12.0	160.7	SNY-160
180.0	200.0	12.0	13.0	15.5	180.7	SNY-180

* L1 Groove for RNY used with 1 back up ring can stand pressure up to 210 Bar

Rod Seal - PS

Rod Seals

PS (Metric Size)

PS

Material	Pressure (Bar)	Temp. (°C)	Speed (m/s)
NBR	140 (210)	-10 +80	0.5

- No damage due to twisting or rolling.
- Compatible with O-rings of JIS B2401 P series.
- Sealing performance is superior.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Chamfers	
d	C
3-22	1.5
22-48	3.0
48-100	4.0

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Seal Height	Groove Width		Reference (For order processing)	Rod Dia.	Groove Dia.	Seal Height	Groove Width		Reference (For order processing)
d	D	H	L	L1*		d	D	H	L	L1*	
3.0	6.0	2.0	2.5	3.9	PS-003	42.0	48.0	4.3	4.7	6.0	PS-042
4.0	7.0	2.0	2.5	3.9	PS-004	44.0	50.0	4.3	4.7	6.0	PS-044
5.0	8.0	2.0	2.5	3.9	PS-005	45.0	51.0	4.3	4.7	6.0	PS-045
6.0	9.0	2.0	2.5	3.9	PS-006	46.0	52.0	4.3	4.7	6.0	PS-046
7.0	10.0	2.0	2.5	3.9	PS-007	48.0	54.0	4.3	4.7	6.0	PS-048
8.0	11.0	2.0	2.5	3.9	PS-008	48.0	58.0	6.9	7.5	9.0	PS-048A
9.0	12.0	2.0	2.5	3.9	PS-009	50.0	56.0	4.3	4.7	6.0	PS-050
10.0	13.0	2.0	2.5	3.9	PS-010	50.0	60.0	6.9	7.5	9.0	PS-050A
10.0	14.0	2.9	3.2	4.4	PS-010A	52.0	62.0	6.9	7.5	9.0	PS-052
11.2	15.2	2.9	3.2	4.4	PS-011.2	53.0	63.0	6.9	7.5	9.0	PS-053
12.0	16.0	2.9	3.2	4.4	PS-012	55.0	65.0	6.9	7.5	9.0	PS-055
12.5	16.5	2.9	3.2	4.4	PS-012.5	56.0	66.0	6.9	7.5	9.0	PS-056
14.0	18.0	2.9	3.2	4.4	PS-014	58.0	68.0	6.9	7.5	9.0	PS-058
15.0	19.0	2.9	3.2	4.4	PS-015	60.0	70.0	6.9	7.5	9.0	PS-060
16.0	20.0	2.9	3.2	4.4	PS-016	62.0	72.0	6.9	7.5	9.0	PS-062
18.0	22.0	2.9	3.2	4.4	PS-018	63.0	73.0	6.9	7.5	9.0	PS-063
20.0	24.0	2.9	3.2	4.4	PS-020	65.0	75.0	6.9	7.5	9.0	PS-065
22.0	26.0	2.9	3.2	4.4	PS-022	67.0	77.0	6.9	7.5	9.0	PS-067
22.0	28.0	4.3	4.7	6.0	PS-022A	70.0	80.0	6.9	7.5	9.0	PS-070
22.4	28.4	4.3	4.7	6.0	PS-022.4	71.0	81.0	6.9	7.5	9.0	PS-071
24.0	30.0	4.3	4.7	6.0	PS-024	75.0	85.0	6.9	7.5	9.0	PS-075
25.0	31.0	4.3	4.7	6.0	PS-025	80.0	90.0	6.9	7.5	9.0	PS-080
26.0	32.0	4.3	4.7	6.0	PS-026	85.0	95.0	6.9	7.5	9.0	PS-085
28.0	34.0	4.3	4.7	6.0	PS-028	90.0	100.0	6.9	7.5	9.0	PS-090
30.0	36.0	4.3	4.7	6.0	PS-030	95.0	105.0	6.9	7.5	9.0	PS-095
31.0	37.0	4.3	4.7	6.0	PS-031	100.0	110.0	6.9	7.5	9.0	PS-100
31.5	37.5	4.3	4.7	6.0	PS-031.5						
32.0	38.0	4.3	4.7	6.0	PS-032						
34.0	40.0	4.3	4.7	6.0	PS-034						
35.0	41.0	4.3	4.7	6.0	PS-035						
35.5	41.5	4.3	4.7	6.0	PS-035.5						
36.0	42.0	4.3	4.7	6.0	PS-036						
38.0	44.0	4.3	4.7	6.0	PS-038						
40.0	46.0	4.3	4.7	6.0	PS-040						
41.0	47.0	4.3	4.7	6.0	PS-041						

* L1 Groove for PS used with 1 back up ring can stand pressure up to 210 Bar

PTFE Seal - 111

Rod Seals

SP-55-111 (Metric Size)

SP-55-111

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE+Bronze - O Ring	400	-40 +200	15

- No stick-slip effect when starting for smooth operation.
- Suitable for non lubricating fluids.
- High wear resistance.
- Installation grooves according to ISO 7425/3.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Installation Dimensions

Series No.	Rod Dia.			Groove Dia.	Groove Width.	Radius	Radial Clearance F max.			O-Ring Cross-Section
	Standard Application	Light Application	Heavy-Duty Application	D	L	r1	100 Bar	200 Bar	400 Bar	
A	-	8 - 18.9	-	d + 4.9	2.2	0.4	0.40	0.30	0.20	1.78
B	8 - 18.9	19 - 37.9	-	d + 7.3	3.2	0.6	0.60	0.50	0.30	2.62
C	19 - 37.9	38 - 199.9	8 - 18.9	d + 10.7	4.2	1.0	0.70	0.50	0.30	3.53
D	38 - 199.9	200 - 255.9	19 - 37.9	d + 15.1	6.3	1.3	0.80	0.60	0.40	5.33
E	200 - 255.9	256 - 649.9	38 - 199.9	d + 20.5	8.1	1.8	0.80	0.60	0.40	7.00
F	256 - 649.9	650 - 999.9	200 - 255.9	d + 24.0	8.1	1.8	0.90	0.70	0.50	7.00
G	650 - 999.9	≥ 1000	256 - 649.9	d + 27.3	9.5	2.5	1.00	0.80	0.60	8.40
H	≥ 1000	-	650 - 999.9	d + 38.0	13.8	3.0	1.20	0.90	0.70	12.00

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	O-RING No.	Reference (For order processing)	Reference	Reference
4.0	8.9	2.2	010	SP-55-111-0040	S55043-0040	ER-39-720-4
5.0	9.9	2.2	011	SP-55-111-0050	S55043-0050	ER-39-720-5
6.0	10.9	2.2	011	SP-55-111-0060	S55043-0060	ER-39-720-6
7.0	11.9	2.2	012	SP-55-111-0070	S55043-0070	ER-39-720-7
8.0	12.9	2.2	012	SP-55-111-0080A	S55045-0080	ER-39-721-8
8.0	15.3	3.2	111	SP-55-111-0080	S55043-0080	ER-39-720-9
10.0	14.9	2.2	014	SP-55-111-0100A	S55045-0100	ER-39-721-10
10.0	17.3	3.2	113	SP-55-111-0100	S55043-0100	ER-39-720-10
12.0	16.9	2.2	015	SP-55-111-0120A	S55045-0120	ER-39-721-12
12.0	19.3	3.2	114	SP-55-111-0120	S55043-0120	ER-39-720-12
14.0	18.9	2.2	016	SP-55-111-0140A	S55045-0140	ER-39-721-14
14.0	21.3	3.2	115	SP-55-111-0140	S55043-0140	ER-39-720-14
16.0	20.9	2.2	017	SP-55-111-0160A	S55045-0160	ER-39-721-16
16.0	23.3	3.2	116	SP-55-111-0160	S55043-0160	ER-39-720-16
18.0	22.9	2.2	019	SP-55-111-0180A	S55045-0180	ER-39-721-18
18.0	25.3	3.2	118	SP-55-111-0180	S55043-0180	ER-39-720-18
20.0	27.3	3.2	119	SP-55-111-0200B	S55045-0200	ER-39-721-20
20.0	30.7	4.2	214	SP-55-111-0200	S55043-0200	ER-39-720-20
22.0	29.3	3.2	120	SP-55-111-0220B	S55045-0220	ER-39-721-22
22.0	32.7	4.2	215	SP-55-111-0220	S55043-0220	ER-39-720-22
25.0	32.3	3.2	122	SP-55-111-0250B	S55045-0250	ER-39-721-25
25.0	35.7	4.2	217	SP-55-111-0250	S55043-0250	ER-39-720-25
30.0	37.3	3.2	125	SP-55-111-0300B	S55045-0300	ER-39-721-30
30.0	40.7	4.2	220	SP-55-111-0300	S55043-0300	ER-39-720-30
32.0	39.3	3.2	126	SP-55-111-0320B	S55045-0320	ER-39-721-32
32.0	42.7	4.2	221	SP-55-111-0320	S55043-0320	ER-39-720-32
36.0	43.3	3.2	129	SP-55-111-0360B	S55045-0360	ER-39-721-36
36.0	46.7	4.2	223	SP-55-111-0360	S55043-0360	ER-39-720-36
40.0	50.7	4.2	224	SP-55-111-0400C	S55045-0400	ER-39-721-40
40.0	55.1	6.3	328	SP-55-111-0400	S55043-0400	ER-39-720-40

PTFE Seal - 111

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	O-RING No.	Reference (For order processing)	Reference	Reference
45.0	55.7	4.2	226	SP-55-111-0450C	S55045-0450	ER-39-721-45
45.0	60.1	6.3	329	SP-55-111-0450	S55043-0450	ER-39-720-45
50.0	60.7	4.2	227	SP-55-111-0500C	S55045-0500	ER-39-721-50
50.0	65.1	6.3	331	SP-55-111-0500	S55043-0500	ER-39-720-50
55.0	65.7	4.2	229	SP-55-111-0550C	S55045-0550	ER-39-721-55
55.0	70.1	6.3	332	SP-55-111-0550	S55043-0550	ER-39-720-55
56.0	66.7	4.2	229	SP-55-111-0560C	S55045-0560	ER-39-721-56
56.0	71.1	6.3	333	SP-55-111-0560	S55043-0560	ER-39-720-56
60.0	70.7	4.2	230	SP-55-111-0600C	S55045-0600	ER-39-721-60
60.0	75.1	6.3	334	SP-55-111-0600	S55043-0600	ER-39-720-60
63.0	78.1	6.3	335	SP-55-111-0630	S55043-0630	ER-39-720-63
65.0	80.1	6.3	336	SP-55-111-0650	S55043-0650	ER-39-720-65
70.0	85.1	6.3	337	SP-55-111-0700	S55043-0700	ER-39-720-70
75.0	90.1	6.3	339	SP-55-111-0750	S55043-0750	ER-39-720-75
80.0	95.1	6.3	340	SP-55-111-0800	S55043-0800	ER-39-720-80
85.0	100.1	6.3	342	SP-55-111-0850	S55043-0850	ER-39-720-85
90.0	105.1	6.3	344	SP-55-111-0900	S55043-0900	ER-39-720-90
95.0	110.1	6.3	345	SP-55-111-0950	S55043-0950	ER-39-720-95
100.0	115.1	6.3	347	SP-55-111-1000	S55043-1000	ER-39-720-100
105.0	120.1	6.3	348	SP-55-111-1050	S55043-1050	ER-39-720-105
110.0	125.1	6.3	350	SP-55-111-1100	S55043-1100	ER-39-720-110
115.0	130.1	6.3	351	SP-55-111-1150	S55043-1150	ER-39-720-115
120.0	135.1	6.3	353	SP-55-111-1200	S55043-1200	ER-39-720-120
125.0	140.1	6.3	355	SP-55-111-1250	S55043-1250	ER-39-720-125
130.0	145.1	6.3	356	SP-55-111-1300	S55043-1300	ER-39-720-130
135.0	150.1	6.3	358	SP-55-111-1350	S55043-1350	ER-39-720-135
140.0	155.1	6.3	359	SP-55-111-1400	S55043-1400	ER-39-720-140
150.0	165.1	6.3	362	SP-55-111-1500	S55043-1500	ER-39-720-150
160.0	175.1	6.3	363	SP-55-111-1600	S55043-1600	ER-39-720-160
170.0	185.1	6.3	365	SP-55-111-1700	S55043-1700	ER-39-720-170
180.0	195.1	6.3	366	SP-55-111-1800	S55043-1800	ER-39-720-180
190.0	205.1	6.3	368	SP-55-111-1900	S55043-1900	ER-39-720-190
200.0	220.5	8.1	445	SP-55-111-2000	S55043-2000	ER-39-720-200
210.0	230.5	8.1	446	SP-55-111-2100	S55043-2100	ER-39-720-210
220.0	240.5	8.1	447	SP-55-111-2200	S55043-2200	ER-39-720-220
230.0	250.5	8.1	448	SP-55-111-2300	S55043-2300	ER-39-720-230
240.0	260.5	8.1	449	SP-55-111-2400	S55043-2400	ER-39-720-240
250.0	270.5	8.1	449	SP-55-111-2500	S55043-2500	ER-39-720-250
260.0	284.0	8.1	450	SP-55-111-2600	S55043-2600	ER-39-720-260
270.0	294.0	8.1	451	SP-55-111-2700	S55043-2700	ER-39-720-270
280.0	304.0	8.1	452	SP-55-111-2800	S55043-2800	ER-39-720-280
290.0	314.0	8.1	453	SP-55-111-2900	S55043-2900	ER-39-720-290
300.0	324.0	8.1	454	SP-55-111-3000	S55043-3000	ER-39-720-300
310.0	334.0	8.1	454	SP-55-111-3100	S55043-3100	ER-39-720-310
320.0	344.0	8.1	455	SP-55-111-3200	S55043-3200	ER-39-720-320

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	O-RING No.	Reference (For order processing)	Reference	Reference
330.0	354.0	8.1	456	SP-55-111-3300	S55043-3300	ER-39-720-330
340.0	364.0	8.1	457	SP-55-111-3400	S55043-3400	ER-39-720-340
350.0	374.0	8.1	458	SP-55-111-3500	S55043-3500	ER-39-720-350
360.0	384.0	8.1	458	SP-55-111-3600	S55043-3600	ER-39-720-360
370.0	394.0	8.1	459	SP-55-111-3700	S55043-3700	ER-39-720-370
380.0	404.0	8.1	460	SP-55-111-3800	S55043-3800	ER-39-720-380
390.0	414.0	8.1	461	SP-55-111-3900	S55043-3900	ER-39-720-390
400.0	424.0	8.1	461	SP-55-111-4000	S55043-4000	ER-39-720-400
410.0	434.0	8.1	462	SP-55-111-4100	S55043-4100	ER-39-720-410
420.0	444.0	8.1	463	SP-55-111-4200	S55043-4200	ER-39-720-420
430.0	454.0	8.1	464	SP-55-111-4300	S55043-4300	ER-39-720-430
440.0	464.0	8.1	464	SP-55-111-4400	S55043-4400	ER-39-720-440
450.0	474.0	8.1	466	SP-55-111-4500	S55043-4500	ER-39-720-450
460.0	484.0	8.1	466	SP-55-111-4600	S55043-4600	ER-39-720-460
470.0	494.0	8.1	467	SP-55-111-4700	S55043-4700	ER-39-720-470
480.0	504.0	8.1	468	SP-55-111-4800	S55043-4800	ER-39-720-480
490.0	514.0	8.1	469	SP-55-111-4900	S55043-4900	ER-39-720-490
500.0	524.0	8.1	469	SP-55-111-5000	S55043-5000	ER-39-720-500
510.0	534.0	8.1	469	SP-55-111-5100	S55043-5100	ER-39-720-510
520.0	544.0	8.1	470	SP-55-111-5200	S55043-5200	ER-39-720-520
530.0	554.0	8.1	470	SP-55-111-5300	S55043-5300	ER-39-720-530
540.0	564.0	8.1	471	SP-55-111-5400	S55043-5400	ER-39-720-540
550.0	574.0	8.1	471	SP-55-111-5500	S55043-5500	ER-39-720-550
560.0	584.0	8.1	471	SP-55-111-5600	S55043-5600	ER-39-720-560
570.0	594.0	8.1	472	SP-55-111-5700	S55043-5700	ER-39-720-570
580.0	604.0	8.1	472	SP-55-111-5800	S55043-5800	ER-39-720-580
590.0	614.0	8.1	473	SP-55-111-5900	S55043-5900	ER-39-720-590
600.0	624.0	8.1	473	SP-55-111-6000	S55043-6000	ER-39-720-600
610.0	634.0	8.1	473	SP-55-111-6100	S55043-6100	ER-39-720-610
620.0	644.0	8.1	474	SP-55-111-6200	S55043-6200	ER-39-720-620
630.0	654.0	8.1	474	SP-55-111-6300	S55043-6300	ER-39-720-630
640.0	664.0	8.1	475	SP-55-111-6400	S55043-6400	ER-39-720-640
650.0	677.3	9.5	665 * 8.4	SP-55-111-6500	S55043-6500	ER-39-720-650
660.0	687.3	9.5	675 * 8.4	SP-55-111-6600	S55043-6600	ER-39-720-660
670.0	697.3	9.5	685 * 8.4	SP-55-111-6700	S55043-6700	ER-39-720-670
680.0	707.3	9.5	695 * 8.4	SP-55-111-6800	S55043-6800	ER-39-720-680
690.0	717.3	9.5	705 * 8.4	SP-55-111-6900	S55043-6900	ER-39-720-690
700.0	727.3	9.5	715 * 8.4	SP-55-111-7000	S55043-7000	ER-39-720-700
710.0	737.3	9.5	725 * 8.4	SP-55-111-7100	S55043-7100	ER-39-720-710

Order No. SP-55 - 11 1 - 0040

Seal ring material code

Seal profile

Rod diameter x 10

O ring material code

PTFE Seal - 7401

Rod Seals

SP-11-7401 (Metric Size)

SP-11-7401

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
PTFE - O Ring	350	-40 +200	15

- Compact groove dimensions and simple installation.
- Low friction without stick-slip.
- Resistance against wear and extrusion.
- Standard cross section cover as 568 A and metric o-ring.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Installation Dimensions

Series No.	Rod Dia.		Groove Dia.	Groove Width.	Radius	Radial Clearance F max.*				O-Ring Cross-Section.
	Standrad Range	Extended Range	D	L	r1	20 Bar	100 Bar	200 Bar	350 Bar	
A	4 - 9.9	2 - 129.9	d + 2.9	2.4	0.4	0.10	0.10	0.08	0.05	1.78
B	10 - 19.9	5 - 249.9	d + 4.5	3.6	0.4	0.15	0.15	0.10	0.07	2.62
C	20 - 39.9	5 - 449.9	d + 6.2	4.8	0.6	0.25	0.20	0.15	0.08	3.53
D	40 - 111.9	12 - 649.9	d + 9.4	7.1	0.8	0.35	0.25	0.20	0.10	5.33
E	120 - 649.9	60 - 999.9	d + 12.2	9.5	0.8	0.50	0.30	0.25	0.15	7.00
F	650 - 999.9	110 - 999.9	d + 15.0	10.0	1.0	0.60	0.40	0.30	0.20	8.40

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	O-RING No.	Reference (For order processing)
d	D	L		
3.0	5.9	2.4	006	SP-11-7401-0030
4.0	6.9	2.4	007	SP-11-7401-0040
5.0	7.9	2.4	4.87x1.80	SP-11-7401-0050
6.0	8.9	2.4	010	SP-11-7401-0060
8.0	10.9	2.4	011	SP-11-7401-0080
10.0	14.5	3.6	111	SP-11-7401-0100
12.0	16.5	3.6	112	SP-11-7401-0120
14.0	18.5	3.6	113	SP-11-7401-0140
15.0	19.5	3.6	15.0x2.65	SP-11-7401-0150
16.0	20.5	3.6	115	SP-11-7401-0160
18.0	22.5	3.6	116	SP-11-7401-0180
20.0	26.2	4.8	211	SP-11-7401-0200
22.0	28.2	4.8	212	SP-11-7401-0220
25.0	31.2	4.8	214	SP-11-7401-0250
28.0	34.2	4.8	216	SP-11-7401-0280
30.0	36.2	4.8	218	SP-11-7401-0300
32.0	38.2	4.8	219	SP-11-7401-0320
35.0	41.2	4.8	221	SP-11-7401-0350
36.0	42.2	4.8	221	SP-11-7401-0360
40.0	49.4	7.1	326	SP-11-7401-0400
42.0	51.4	7.1	327	SP-11-7401-0420
45.0	54.4	7.1	328	SP-11-7401-0450
48.0	57.4	7.1	328	SP-11-7401-0480
50.0	59.4	7.1	329	SP-11-7401-0500
52.0	61.4	7.1	330	SP-11-7401-0520
55.0	64.4	7.1	331	SP-11-7401-0550
56.0	65.4	7.1	331	SP-11-7401-0560
60.0	69.4	7.1	332	SP-11-7401-0600
63.0	72.4	7.1	333	SP-11-7401-0630
65.0	74.4	7.1	334	SP-11-7401-0650

PTFE Seal - 7401

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	O-RING No.	Reference (For order processing)
70.0	79.4	7.1	336	SP-11-7401-0700
80.0	89.4	7.1	339	SP-11-7401-0800
85.0	94.4	7.1	340	SP-11-7401-0850
90.0	99.4	7.1	342	SP-11-7401-0900
95.0	104.4	7.1	344	SP-11-7401-0950
100.0	109.4	7.1	345	SP-11-7401-1000
105.0	114.4	7.1	347	SP-11-7401-1050
110.0	119.4	7.1	348	SP-11-7401-1100
115.0	124.4	7.1	350	SP-11-7401-1150
120.0	132.2	9.5	427	SP-11-7401-1200
125.0	137.2	9.5	429	SP-11-7401-1250
130.0	142.2	9.5	431	SP-11-7401-1300
135.0	147.2	9.5	432	SP-11-7401-1350
140.0	152.2	9.5	434	SP-11-7401-1400
150.0	162.2	9.5	437	SP-11-7401-1500
160.0	172.2	9.5	439	SP-11-7401-1600
170.0	182.2	9.5	440	SP-11-7401-1700
180.0	192.2	9.5	442	SP-11-7401-1800
190.0	202.2	9.5	443	SP-11-7401-1900
200.0	212.2	9.5	445	SP-11-7401-2000
210.0	222.2	9.5	446	SP-11-7401-2100
220.0	232.2	9.5	447	SP-11-7401-2200
230.0	242.2	9.5	447	SP-11-7401-2300
240.0	252.2	9.5	448	SP-11-7401-2400
250.0	262.2	9.5	449	SP-11-7401-2500
280.0	292.2	9.5	452	SP-11-7401-2800
300.0	312.2	9.5	453	SP-11-7401-3000
320.0	332.2	9.5	455	SP-11-7401-3200
350.0	362.2	9.5	457	SP-11-7401-3500
360.0	372.2	9.5	458	SP-11-7401-3600

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. SP-11 - 740 1 - 0030

Seal ring material code

Seal profile

O ring material code

Rod diameter x 10

SPEC SEAL

Seals & O-rings Specialist

Rod Sealing Set - SAL

Rod Seals

SAL (Inch Size)

SAL

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR+Fabric-PU	400	-30 +100	0.5

- Small cross section.
- Easy installation.
- Excellent sealing effect.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Rod Dia.	Groove Dia.	Groove Width	Diameter	Reference (For order processing)
d	D	L	d1	
2.750	3.200	.750	2.760	SAL 275
3.500	4.013	.750	3.510	SAL 350
4.375	4.888	.750	4.375	SAL 437
5.250	5.888	.750	5.260	SAL 525
6.312	6.889	.750	6.322	SAL 631
7.312	7.954	.750	7.322	SAL 731
8.375	9.000	.750	8.385	SAL 837
9.437	10.216	1.000	9.450	SAL 943

SPEC SEAL
Seals & O-rings Specialist

Rod T-Seal

Rod Seals

TR (Inch Size)

TR

Material	Pressure (Bar)	Temp. (°c)	Speed (m/s)
NBR - POM	350	-30 +110	1

- High wear resistance.
- Low friction.
- Stability of the sliding ring under rapid pressure change.
- High extrusion resistance.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Nominal size			Rod Dia.	Groove Dia.	Groove Width	Diameter	O-RING No.	Reference (For ordering)
ID	OD	S	d	D	L	d1		
3/16	3/8	3/32	.186±.001	.370+.000-.002	.150+.005-.000	.189±.001	106	TR-001
1/4	7/16	3/32	.248	.433	.150	.251	108	TR-002
5/16	1/2	3/32	.310	.495	.150	.313	109	TR-003
3/8	5/8	1/8	.373	.618	.185	.376	204	TR-004
7/16	11/16	1/8	.435	.680	.185	.438	205	TR-005
1/2	3/4	1/8	.498	.743	.185	.501	206	TR-006
9/16	13/16	1/8	.560	.805	.185	.563	207	TR-007
5/8	7/8	1/8	.623	.868	.185	.626	208	TR-008
11/16	15/16	1/8	.685	.930	.185	.688	209	TR-009
3/4	1	1/8	.747	.992	.185	.750	210	TR-010
13/16	1-1/16	1/8	.809	1.054	.185	.812	211	TR-011
7/8	1-1/8	1/8	.872	1.117	.185	.875	212	TR-012
15/16	1-3/16	1/8	.934	1.179	.185	.937	213	TR-013
1	1-1/4	1/8	.997	1.242	.185	1.000	214	TR-014
1-1/16	1-5/16	1/8	1.059	1.304	.185	1.062	215	TR-015
1-1/8	1-3/8	1/8	1.122	1.367	.185	1.125	216	TR-016
1-3/16	1-7/16	1/8	1.184	1.429	.185	1.187	217	TR-017
1-1/4	1-1/2	1/8	1.247	1.492	.185	1.250	218	TR-018
1-5/16	1-9/16	1/8	1.309	1.554	.185	1.312	219	TR-019
1-3/8	1-5/8	1/8	1.372	1.617	.185	1.375	220	TR-020
1-7/16	1-11/16	1/8	1.434	1.679	.185	1.437	221	TR-021
1-1/2	1-3/4	1/8	1.497	1.742	.185	1.500	222	TR-022
1-1/2	1-7/8	3/16	1.497	1.871	.280	1.500	325	TR-023
1-5/8	2	3/16	1.622	1.996	.280	1.625	326	TR-024
1-3/4	2-1/8	3/16	1.747	2.121	.280	1.750	327	TR-025
1-7/8	2-1/4	3/16	1.872	2.246	.280	1.875	328	TR-026
2	2-3/8	3/16	1.997	2.371	.280	2.000	329	TR-027
2-1/8	2-1/2	3/16	2.122	2.496	.280	2.125	330	TR-028
2-1/4	2-5/8	3/16	2.247	2.613	.280	2.250	331	TR-029
2-3/8	2-3/4	3/16	2.372±.002	2.746+.001-.003	.280	2.377±.002	332	TR-030
2-1/2	2-7/8	3/16	2.497	2.871	.280	2.502	333	TR-031
2-5/8	3	3/16	2.622	2.996	.280	2.627	334	TR-032
2-3/4	3-1/8	3/16	2.747	3.121	.280	2.752	335	TR-033
2-7/8	3-1/4	3/16	2.872	3.246	.280	2.877	336	TR-034
3	3-3/8	3/16	2.996	3.370	.280	3.001	337	TR-035
3-1/8	3-1/2	3/16	3.121±.002	3.495+.001-.003	.280+.005-.000	3.126±.002	338	TR-036
3-1/4	3-5/8	3/16	3.246	3.620	.280	3.251	339	TR-037
3-3/8	3-3/4	3/16	3.371	3.745	.280	3.376	340	TR-038
3-1/2	3-7/8	3/16	3.496	3.870	.280	3.501	341	TR-039
3-5/8	4	3/16	3.621	3.995	.280	3.626	342	TR-040

Rod T-Seal

(Inch Size)

Nominal size			Rod Dia.	Groove Dia.	Groove Width	Diameter	O-RING No.	Reference (For ordering)
ID	OD	S	d	D	L	d1		
3-3/4	4-1/8	3/16	3.746±.002	4.120+.001-.003	.280+.005-.000	3.751±.002	343	TR-041
3-7/8	4-1/4	3/16	3.871	4.245	.280	3.876	344	TR-042
4	4-3/8	3/16	3.996	4.370	.280	4.001	345	TR-043
4-1/8	4-1/2	3/16	4.121	4.495	.280	4.126	346	TR-044
4-1/4	4-5/8	3/16	4.246	4.620	.280	4.251	347	TR-045
4-3/8	4-3/4	3/16	4.371	4.745	.280	4.376	348	TR-046
4-1/2	4-7/8	3/16	4.496	4.870	.280	4.501	349	TR-047
5	5-1/2	1/4	4.996	5.475	.366	5.001	429	TR-048
5-1/4	5-3/4	1/4	5.246	5.725	.366	5.251	431	TR-049
5-1/2	6	1/4	5.496	5.975	.366	5.501	433	TR-050
5-5/8	6-1/8	1/4	5.621	6.100	.366	5.626	434	TR-051
6	6-1/2	1/4	5.996±.003	6.475+.002-.004	.366	6.003±.003	437	TR-052
6-1/4	6-3/4	1/4	6.246	6.725	.366	6.253	438	TR-053
6-1/2	7	1/4	6.496	6.975	.366	6.503	439	TR-054
6-3/4	7-1/4	1/4	6.746	7.225	.366	6.753	440	TR-055
7	7-1/2	1/4	6.996	7.475	.366	7.003	441	TR-056
7-1/4	7-3/4	1/4	7.246	7.725	.366	7.253	442	TR-057
7-1/2	8	1/4	7.500	7.984	.366	7.507	443	TR-058
8	8-1/2	1/4	7.996	8.475	.366	8.003	445	TR-059
9	9-1/2	1/4	8.996	9.475	.366	9.003	447	TR-060
9-1/2	10	1/4	9.496	9.975	.366	9.503	448	TR-061
10	10-1/2	1/4	9.996	10.475	.366	10.003	449	TR-062
11	11-1/2	1/4	10.996	11.475	.366	11.003	451	TR-063
11-1/2	12	1/4	11.500	11.979	.366	11.507	452	TR-064
12	12-1/2	1/4	11.996	12.475	.366	12.003	453	TR-065

SPEC SEAL Seals & O-rings Specialist

SPEC SEAL

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Seals & O-rings Specialist

Wipers

Design	Ref.	Material	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	A1	NBR	-35 +100	2	●		284
	A1	PU	-35 +100	2	●		284
	DA17 AD51	NBR	-30 +110	1	●		288
	SA PW GHK	PU	-30 +80	1	●		292
	PW/HH	PU	-40 +95	1	●		298
	EDK	NBR	-30 +110	1	●		298
	H-38	PU	-40 +120	4	●		300
	SAB RSW	PU	-35 +100	1	●		304
	GHW RCI	Dynathan	-30 +110	1	●		304
	DH	PU	-25 +80	1	●		308
	AY H-839	PU	-35 +100	1	●		310
	GPY PU5	PU	-30 +100	2	●		314
	SDR	NBR	-25 +100	1	●		316
	SDR-F	FPM	-5 +150	0.5			
	LBH	NBR	-25 +100	1	●		320
	LBH-F	FPM	-10 +150	0.5			
	SCK	NBR	-45 +100	1	●		322
	SP-55-581	PTFE + Bronze - O-Ring	-40 +200	15	●	●	324
	SP-55-591	PTFE + Bronze - O-Ring	-40 +200	15	●	●	328

SPEC SEAL Seals & O-rings Specialist

Wipers

Design	Ref.	Material	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	SP-55-791	PTFE + Bronze - O-Ring	-40 +200	15	●	●	332
	CSWM	Hytrel	-30 +120	1	●		336
	CSW					●	
	H-33	NBR	-30 +100	4	●	●	338,342
	D	PU	-35 +95	0.5		●	344
	940, 959	PU	-35 +95	0.5		●	348
	H	PU	-35 +95	0.5		●	352
	K	PU	-35 +95	0.5		●	356
	EWS	PU	-30 +95	0.5		●	360
	PWB	NBR	-30 +110	1		●	362
	EVH	NBR	-30 +110	1		●	364
	GA	NBR-Metal	-30 +120	1	●		366
	ME-1, DKBI	PU-Metal	-40 +80	0.5	●		370
	ME-3, DKI	PU-Metal	-40 +80	0.5	●		370
	SCB	NBR-Metal	-40 +100	1	●		372
	DKB	NBR-Metal	-20 +100	1	●		374
		PU-Metal	-35 +95	0.5		●	376
	PW CORD	NBR	-30 +110	1	●	●	378

SPEC SEAL Seals & O-rings Specialist

Wiper - A1

Wipers

A1 (Metric Size)

A1 (NBR)

A1 (PU)

Material	Temp. (°c)	Speed (m/s)
NBR, PU	-35 +100	2

- Simple groove design.
- Very good scraping effect.
- Simple installation.
- Oversized diameters ensure a tight fit in the groove.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Seal Height	Distance		Prefix No.	Reference (For order processing)
d	D	L	H	a	n		
4.0	12.0	4.0	7.0	1.0	1.0	0015	A1 004-012-4/7
5.0	8.0	2.2	4.0	1.0	0.5	0025	A1 005-008-2.2/4
6.0	10.0	2.2	4.0	1.0	0.5	0035	A1 006-010-2.2/4
8.0	14.0	2.6	5.0	1.0	1.0	0042	A1 008-014-2.6/5
8.0	16.0	4.0	7.0	1.0	1.0	0045	A1 008-016-4/7
10.0	16.0	2.6	5.0	1.0	1.0	1002	A1 010-016-2.6/5
10.0	18.0	4.0	7.0	1.0	1.0	1005	A1 010-018-4/7
12.0	18.0	2.6	5.0	1.0	1.0	1009	A1 012-018-2.6/5
12.0	20.0	4.0	7.0	1.0	1.0	1010	A1 012-020-4/7
14.0	20.0	3.1	5.0	1.0	1.0	1014	A1 014-020-3.1/5
14.0	22.0	4.0	7.0	1.0	1.0	1015	A1 014-022-4/7
15.0	23.0	4.0	7.0	1.0	1.0	1020	A1 015-023-4/7
16.0	22.0	3.1	5.0	1.0	1.0	1016	A1 016-022-3.1/5
16.0	24.0	4.0	7.0	1.0	1.0	1025	A1 016-024-4/7
17.0	25.0	4.0	7.0	1.0	1.0	1030	A1 017-025-4/7
18.0	24.0	3.1	5.0	1.0	1.0	1034	A1 018-024-3.1/5
18.0	26.0	4.0	7.0	1.0	1.0	1035	A1 018-026-4/7
20.0	26.0	3.1	5.0	1.0	1.0	2026	A1 020-026-3.1/5
20.0	28.0	4.0	7.0	1.0	1.0	2005	A1 020-028-4/7
22.0	30.0	4.0	7.0	1.0	1.0	2010	A1 022-030-4/7
23.0	31.0	4.0	7.0	1.0	1.0	2015	A1 023-031-4/7
24.0	32.0	4.0	7.0	1.0	1.0	2020	A1 024-032-4/7
25.0	33.0	4.0	7.0	1.0	1.0	2025	A1 025-033-4/7
26.0	34.0	4.0	7.0	1.0	1.0	2030	A1 026-034-4/7
28.0	36.0	4.0	7.0	1.0	1.0	2035	A1 028-036-4/7
30.0	38.0	4.0	7.0	1.0	1.0	3005	A1 030-038-4/7
32.0	40.0	4.0	7.0	1.0	1.0	3010	A1 032-040-4/7
33.0	41.0	4.0	7.0	1.0	1.0	3015	A1 033-041-4/7
34.0	42.0	4.0	7.0	1.0	1.0	3020	A1 034-042-4/7
35.0	43.0	4.0	7.0	1.0	1.0	3025	A1 035-043-4/7
36.0	44.0	4.0	7.0	1.0	1.0	3030	A1 036-044-4/7
38.0	46.0	4.0	7.0	1.0	1.0	3035	A1 038-046-4/7
40.0	48.0	4.0	7.0	1.0	1.0	4005	A1 040-048-4/7
41.0	49.0	4.0	7.0	1.0	1.0	4010	A1 041-049-4/7
42.0	50.0	4.0	7.0	1.0	1.0	4015	A1 042-050-4/7
44.0	52.0	4.0	7.0	1.0	1.0	4025	A1 044-052-4/7
45.0	53.0	4.0	7.0	1.0	1.0	4030	A1 045-053-4/7
45.0	57.0	5.5	10.0	1.5	1.5	4035	A1 045-057-5.5/10
46.0	54.0	4.0	7.0	1.0	1.0	4040	A1 046-054-4/7
47.0	55.0	4.0	7.0	1.0	1.0	4045	A1 047-055-4/7
48.0	56.0	4.0	7.0	1.0	1.0	4050	A1 048-056-4/7
50.0	58.0	4.0	7.0	1.0	1.0	5005	A1 050-058-4/7
50.0	62.0	5.5	10.0	1.5	1.5	5010	A1 050-062-5.5/10
51.0	59.0	4.0	7.0	1.0	1.0	5015	A1 051-059-4/7
52.0	60.0	4.0	7.0	1.0	1.0	5020	A1 052-060-4/7

Wiper - A1

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Seal Height	Distance		Prefix No.	Reference (For order processing)
d	D	L	H	a	n		
54.0	62.0	4.0	7.0	1.0	1.0	5030	A1 054-062-4/7
55.0	63.0	4.0	7.0	1.0	1.0	5035	A1 055-063-4/7
56.0	64.0	4.0	7.0	1.0	1.0	5040	A1 056-064-4/7
57.0	65.0	4.0	7.0	1.0	1.0	5042	A1 057-065-4/7
58.0	66.0	4.0	7.0	1.0	1.0	5045	A1 058-066-4/7
60.0	68.0	4.0	7.0	1.0	1.0	6005	A1 060-068-4/7
60.0	72.0	5.5	10.0	1.5	1.5	6010	A1 060-072-5.5/10
62.0	70.0	4.0	7.0	1.0	1.0	6015	A1 062-070-4/7
63.0	71.0	4.0	7.0	1.0	1.0	6020	A1 063-071-4/7
64.0	72.0	4.0	7.0	1.0	1.0	6025	A1 064-072-4/7
65.0	73.0	4.0	7.0	1.0	1.0	6030	A1 065-073-4/7
66.0	74.0	4.0	7.0	1.0	1.0	6035	A1 066-074-4/7
67.0	75.0	4.0	7.0	1.0	1.0	6040	A1 067-075-4/7
68.0	76.0	4.0	7.0	1.0	1.0	6045	A1 068-076-4/7
70.0	78.0	4.0	7.0	1.0	1.0	7005	A1 070-078-4/7
70.0	82.0	5.5	10.0	1.5	1.5	7008	A1 070-082-5.5/10
72.0	80.0	4.0	7.0	1.0	1.0	7015	A1 072-080-4/7
73.0	81.0	4.0	7.0	1.0	1.0	7018	A1 073-081-4/7
75.0	83.0	4.0	7.0	1.0	1.0	7025	A1 075-083-4/7
78.0	86.0	4.0	7.0	1.0	1.0	7040	A1 078-086-4/7
80.0	88.0	4.0	7.0	1.0	1.0	8002	A1 080-088-4/7
80.0	92.0	5.5	10.0	1.5	1.5	8003	A1 080-092-5.5/10
82.0	90.0	4.0	7.0	1.0	1.0	8010	A1 082-090-4/7
83.0	91.0	4.0	7.0	1.0	1.0	8015	A1 083-091-4/7
85.0	93.0	4.0	7.0	1.0	1.0	8025	A1 085-093-4/7
86.0	94.0	4.0	7.0	1.0	1.0	8030	A1 086-094-4/7
88.0	96.0	4.0	7.0	1.0	1.0	8040	A1 088-096-4/7
90.0	98.0	4.0	7.0	1.0	1.0	9005	A1 090-098-4/7
92.0	100.0	4.0	7.0	1.0	1.0	9015	A1 092-100-4/7
93.0	101.0	4.0	7.0	1.0	1.0	9020	A1 093-101-4/7
95.0	103.0	4.0	7.0	1.0	1.0	9030	A1 095-103-4/7
97.0	105.0	4.0	7.0	1.0	1.0	9045	A1 097-105-4/7
100.0	108.0	4.0	7.0	1.0	1.0	A010	A1 100-108-4/7
102.0	114.0	5.5	10.0	1.5	1.5	A020	A1 102-114-5.5/10
105.0	117.0	5.5	10.0	1.5	1.5	A035	A1 105-117-5.5/10
106.0	118.0	5.5	10.0	1.5	1.5	A040	A1 106-118-5.5/10
110.0	118.0	4.0	7.0	1.0	1.0	B005	A1 110-118-4/7
110.0	122.0	5.5	10.0	1.5	1.5	B010	A1 110-122-5.5/10
112.0	124.0	5.5	10.0	1.5	1.5	B020	A1 112-124-5.5/10
113.0	121.0	4.0	7.0	1.0	1.0	B024	A1 113-121-4/7
114.0	122.0	4.0	7.0	1.0	1.0	B028	A1 114-122-4/7
115.0	127.0	5.5	10.0	1.5	1.5	B035	A1 115-127-5.5/10
118.0	130.0	5.5	10.0	1.5	1.5	B050	A1 118-130-5.5/10
120.0	132.0	5.5	10.0	1.5	1.5	C010	A1 120-132-5.5/10
125.0	137.0	5.5	10.0	1.5	1.5	C020	A1 125-137-5.5/10

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Seal Height	Distance		Prefix No.	Reference (For order processing)
d	D	L	H	a	n		
128.0	140.0	5.5	10.0	1.5	1.5	C035	A1 128-140-5.5/10
130.0	142.0	5.5	10.0	1.5	1.5	D010	A1 130-142-5.5/10
131.0	139.0	4.0	7.0	1.0	1.0	D015	A1 131-139-4/7
135.0	147.0	5.5	10.0	1.5	1.5	D025	A1 135-147-5.5/10
140.0	152.0	5.5	10.0	1.5	1.5	E010	A1 140-152-5.5/10
142.0	154.0	5.5	10.0	1.5	1.5	E020	A1 142-154-5.5/10
145.0	157.0	5.5	10.0	1.5	1.5	E035	A1 145-157-5.5/10
149.0	157.0	4.0	7.0	1.0	1.0	E090	A1 149-157-4/7
150.0	162.0	5.5	10.0	1.5	1.5	F005	A1 150-162-5.5/10
152.0	164.0	5.5	10.0	1.5	1.5	F015	A1 152-164-5.5/10
155.0	167.0	5.5	10.0	1.5	1.5	F030	A1 155-167-5.5/10
160.0	172.0	5.5	10.0	1.5	1.5	G010	A1 160-172-5.5/10
165.0	177.0	5.5	10.0	1.5	1.5	G025	A1 165-177-5.5/10
166.0	178.0	5.5	10.0	1.5	1.5	G030	A1 166-178-5.5/10
168.0	176.0	4.0	7.0	1.0	1.0	G060	A1 168-176-4/7
170.0	182.0	5.5	10.0	1.5	1.5	H010	A1 170-182-5.5/10
175.0	187.0	5.5	10.0	1.5	1.5	H025	A1 175-187-5.5/10
180.0	192.0	5.5	10.0	1.5	1.5	J010	A1 180-192-5.5/10
185.0	197.0	5.5	10.0	1.5	1.5	J050	A1 185-197-5.5/10
190.0	202.0	5.5	10.0	1.5	1.5	K015	A1 190-202-5.5/10
195.0	207.0	5.5	10.0	1.5	1.5	K030	A1 195-207-5.5/10
200.0	212.0	5.5	10.0	1.5	1.5	L003	A1 200-212-5.5/10
210.0	218.0	4.0	7.0	1.0	1.0	L009	A1 210-218-4/7
210.0	225.0	6.5	13.0	2.0	2.0	L010	A1 210-225-6.5/13
220.0	235.0	6.5	13.0	2.0	2.0	M010	A1 220-235-6.5/13
230.0	245.0	6.5	13.0	2.0	2.0	M016	A1 230-245-6.5/13
235.0	250.0	6.5	13.0	2.0	2.0	M020	A1 235-250-6.5/13
240.0	255.0	6.5	13.0	2.0	2.0	N015	A1 240-255-6.5/13
250.0	265.0	6.5	13.0	2.0	2.0	N040	A1 250-265-6.5/13
260.0	275.0	6.5	13.0	2.0	2.0	O005	A1 260-275-6.5/13
265.0	280.0	6.5	13.0	2.0	2.0	O030	A1 256-280-6.5/13
275.0	290.0	6.5	13.0	2.0	2.0	O075	A1 275-290-6.5/13
300.0	315.0	6.5	13.0	2.0	2.0	Q010	A1 300-315-6.5/13
305.0	320.0	6.5	13.0	2.0	2.0	Q015	A1 305-320-6.5/13
310.0	325.0	6.5	13.0	2.0	2.0	Q020	A1 310-325-6.5/13
315.0	330.0	6.5	13.0	2.0	2.0	Q025	A1 315-330-6.5/13
320.0	335.0	6.5	13.0	2.0	2.0	Q030	A1 320-335-6.5/13
325.0	340.0	6.5	13.0	2.0	2.0	Q032	A1 325-340-6.5/13
340.0	355.0	6.5	13.0	2.0	2.0	Q035	A1 340-355-6.5/13
365.0	380.0	6.5	13.0	2.0	2.0	Q050	A1 365-380-6.5/13
400.0	415.0	6.5	13.0	2.0	2.0	R020	A1 400-415-6.5/13
450.0	465.0	6.5	13.0	2.0	2.0	R015	A1 450-465-6.5/13
500.0	515.0	6.5	13.0	2.0	2.0	S015	A1 500-515-6.5/13

Wiper - DA17

Wipers

DA17, AD51 (Metric Size)

DA17, AD51

Material	Temp. (°c)	Speed (m/s)
NBR	-30 +110	1

- Low friction.
- Good scraping effect both inwards and outwards.
- Simple, small installation groove.
- Compact design.
- Easy installation and removal without tools.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Seal Height	Bore Dia.	Step Width.	Reference	Reference
d	D	L	H	D1	a		
10.0	18.0	6.0	8.0	13.5	2.0	DA17-0100 N90	AD51-0100 N90
12.0	20.0	6.0	8.0	15.5	2.0	DA17-0120 N90	AD51-0120 N90
14.0	22.0	6.0	8.0	17.5	2.0	DA17-0140 N90	AD51-0140 N90
15.0	23.0	6.0	8.0	18.5	2.0	DA17-0150 N90	AD51-0150 N90
16.0	24.0	6.0	8.0	19.5	2.0	DA17-0160 N90	AD51-0160 N90
18.0	26.0	6.0	8.0	21.5	2.0	DA17-0180 N90	AD51-0180 N90
20.0	28.0	6.0	8.0	23.5	2.0	DA17-0200 N90	AD51-0200 N90
22.0	30.0	6.0	8.0	25.5	2.0	DA17-0220 N90	AD51-0220 N90
24.0	32.0	6.0	8.0	27.5	2.0	DA17-0240 N90	AD51-0240 N90
25.0	33.0	6.0	8.0	28.5	2.0	DA17-0250 N90	AD51-0250 N90
28.0	36.0	6.0	8.0	31.5	2.0	DA17-0280 N90	AD51-0280 N90
30.0	38.0	6.0	8.0	33.5	2.0	DA17-0300 N90	AD51-0300 N90
32.0	40.0	6.0	8.0	35.5	2.0	DA17-0320 N90	AD51-0320 N90
35.0	43.0	6.0	8.0	38.5	2.0	DA17-0350 N90	AD51-0350 N90
36.0	44.0	6.0	8.0	39.5	2.0	DA17-0360 N90	AD51-0360 N90
37.0	45.0	6.0	8.0	40.5	2.0	DA17-0370 N90	AD51-0370 N90
38.0	46.0	6.0	8.0	41.5	2.0	DA17-0380 N90	AD51-0380 N90
40.0	48.0	6.0	8.0	43.5	2.0	DA17-0400 N90	AD51-0400 N90
42.0	50.0	6.0	8.0	45.5	2.0	DA17-0420 N90	AD51-0420 N90
45.0	53.0	6.0	8.0	48.5	2.0	DA17-0450 N90	AD51-0450 N90
46.0	54.0	6.0	8.0	49.5	2.0	DA17-0460 N90	AD51-0460 N90
48.0	56.0	6.0	8.0	51.5	2.0	DA17-0480 N90	AD51-0480 N90
50.0	58.0	6.0	8.0	53.5	2.0	DA17-0500 N90	AD51-0500 N90
52.0	60.0	6.0	8.0	55.5	2.0	DA17-0520 N90	AD51-0520 N90
55.0	63.0	6.0	8.0	58.5	2.0	DA17-0550 N90	AD51-0550 N90
56.0	64.0	6.0	8.0	59.5	2.0	DA17-0560 N90	AD51-0560 N90
60.0	68.0	6.0	8.0	63.5	2.0	DA17-0600 N90	AD51-0600 N90
63.0	71.0	6.0	8.0	66.5	2.0	DA17-0630 N90	AD51-0630 N90
65.0	73.0	6.0	8.0	68.5	2.0	DA17-0650 N90	AD51-0650 N90
68.0	76.0	6.0	8.0	71.5	2.0	DA17-0680 N90	AD51-0680 N90
70.0	78.0	6.0	8.0	73.5	2.0	DA17-0700 N90	AD51-0700 N90
75.0	83.0	6.0	8.0	78.5	2.0	DA17-0750 N90	AD51-0750 N90
80.0	88.0	6.0	8.0	83.5	2.0	DA17-0800 N90	AD51-0800 N90
85.0	93.0	6.0	8.0	88.5	2.0	DA17-0850 N90	AD51-0850 N90
90.0	98.0	6.0	8.0	93.5	2.0	DA17-0900 N90	AD51-0900 N90
95.0	103.0	6.0	8.0	98.5	2.0	DA17-0950 N90	AD51-0950 N90
100.0	108.0	6.0	8.0	103.5	2.0	DA17-1000 N90	AD51-1000 N90
105.0	117.0	8.2	11.0	110.0	3.0	DA17-1050 N90	AD51-1050 N90
110.0	122.0	8.2	11.0	115.0	3.0	DA17-1100 N90	AD51-1100 N90
115.0	127.0	8.2	11.0	120.0	3.0	DA17-1150 N90	AD51-1150 N90

* For order processing, the computer code will be DA17-0100 N90

Wiper - DA17

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Seal Height	Bore Dia.	Step Width.	Reference	Reference
d	D	L	H	D1	a		
120.0	132.0	8.2	11.0	125.0	3.0	DA17-1200 N90	AD51-1200 N90
125.0	137.0	8.2	11.0	130.0	3.0	DA17-1250 N90	AD51-1250 N90
130.0	142.0	8.2	11.0	135.0	3.0	DA17-1300 N90	AD51-1300 N90
135.0	147.0	8.2	11.0	140.0	3.0	DA17-1350 N90	AD51-1350 N90
140.0	152.0	8.2	11.0	145.0	3.0	DA17-1400 N90	AD51-1400 N90
145.0	157.0	8.2	11.0	150.0	3.0	DA17-1450 N90	AD51-1450 N90
150.0	162.0	8.2	11.0	155.0	3.0	DA17-1500 N90	AD51-1500 N90
155.0	167.0	8.2	11.0	160.0	3.0	DA17-1550 N90	AD51-1550 N90
160.0	172.0	8.2	11.0	165.0	3.0	DA17-1600 N90	AD51-1600 N90
165.0	177.0	8.2	11.0	170.0	3.0	DA17-1650 N90	AD51-1650 N90
170.0	182.0	8.2	11.0	175.0	3.0	DA17-1700 N90	AD51-1700 N90
180.0	192.0	8.2	11.0	185.0	3.0	DA17-1800 N90	AD51-1800 N90
185.0	197.0	8.2	11.0	190.0	3.0	DA17-1850 N90	AD51-1850 N90
190.0	202.0	8.2	11.0	195.0	3.0	DA17-1900 N90	AD51-1900 N90
195.0	207.0	8.2	11.0	200.0	3.0	DA17-1950 N90	AD51-1950 N90
200.0	212.0	8.2	11.0	205.0	3.0	DA17-2000 N90	AD51-2000 N90
205.0	220.0	9.5	13.0	212.0	3.0	DA17-2050 N90	AD51-2050 N90
210.0	225.0	9.5	13.0	217.0	3.0	DA17-2100 N90	AD51-2100 N90
220.0	235.0	9.5	13.0	227.0	3.0	DA17-2200 N90	AD51-2200 N90
225.0	240.0	9.5	13.0	232.0	3.0	DA17-2250 N90	AD51-2250 N90
240.0	255.0	9.5	13.0	247.0	3.0	DA17-2400 N90	AD51-2400 N90
250.0	265.0	9.5	13.0	257.0	3.0	DA17-2500 N90	AD51-2500 N90
260.0	275.0	9.5	13.0	267.0	3.0	DA17-2600 N90	AD51-2600 N90
275.0	290.0	9.5	13.0	282.0	3.0	DA17-2750 N90	AD51-2750 N90
280.0	295.0	9.5	13.0	287.0	3.0	DA17-2800 N90	AD51-2800 N90
290.0	305.0	9.5	13.0	297.0	3.0	DA17-2900 N90	AD51-2900 N90
300.0	315.0	9.5	13.0	307.0	3.0	DA17-3000 N90	AD51-3000 N90
310.0	325.0	9.5	13.0	317.0	3.0	DA17-3100 N90	AD51-3100 N90
320.0	335.0	9.5	13.0	327.0	3.0	DA17-3200 N90	AD51-3200 N90
350.0	365.0	9.5	13.0	357.0	3.0	DA17-3500 N90	AD51-3500 N90
360.0	375.0	9.5	13.0	367.0	3.0	DA17-3600 N90	AD51-3600 N90
370.0	385.0	9.5	13.0	377.0	3.0	DA17-3700 N90	AD51-3700 N90
400.0	415.0	9.5	13.0	407.0	3.0	DA17-4000 N90	AD51-4000 N90
440.0	455.0	9.5	13.0	447.0	3.0	DA17-4400 N90	AD51-4400 N90

* For order processing, the computer code will be DA17-0100 N90

SPEC SEAL

Seals & O-rings Specialist

Wiper - SA

Wipers

SA, PW, GHK (Metric Size)

SA, PW, GHK

Material	Temp. (°c)	Speed (m/s)
PU	-30 +80	1

- High wear resistance.
- Good prevention against external fluid intrusion.
- Easy installation.
- Space-saving construction.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height L	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)
4.0	12.0	3.0	9.0	SA 004-012-3	PW 004-012-3	
5.0	12.0	2.8	9.0	SA 005-012-2.8	PW 005-012-2.8	
6.0	12.0	3.0	9.0	SA 006-012-3	PW 006-012-3	
8.0	14.6	3.8	11.0	SA 008-014.6-3.8	PW 008-014.6-3.8	
9.0	13.0	2.5	12.0	SA 009-013-2.5	PW 009-013-2.5	
10.0	15.0	1.0	13.0	SA 010-015-1	PW 010-015-1	
10.0	16.6	3.8	13.0	SA 010-016.6-3.8	PW 010-016.6-3.8	
12.0	18.6	3.8	15.0	SA 012-018.6-3.8	PW 012-018.6-3.8	
14.0	20.6	3.8	17.0	SA 014-020.6-3.8	PW 014-020.6-3.8	
15.0	21.6	3.8	18.0	SA 015-021.6-3.8	PW 015-021.6-3.8	
15.0	27.0	5.0	24.0	SA 015-027-5	PW 015-027-5	
16.0	22.5	3.0	19.0	SA 016-022.5-3	PW 016-022.5-3	
16.0	22.6	3.8	19.0	SA 016-022.6-3.8	PW 016-022.6-3.8	GHK 16-22-3.8/5
18.0	24.6	3.8	21.0	SA 018-024.6-3.8	PW 018-024.6-3.8	GHK 18-24-3.8/5
20.0	26.0	3.4	23.0	SA 020-026-3.4	PW 020-026-3.4	
20.0	28.6	5.3	23.0	SA 020-028.6-5.3	PW 020-028.6-5.3	GHK 20-28-5/7
20.0	30.0	5.4	27.0	SA 020-030-5.4	PW 020-030-5.4	
22.0	30.6	2.2	25.0	SA 022-030.6-2.2	PW 022-030.6-2.2	
22.0	30.6	5.3	25.0	SA 022-030.6-5.3	PW 022-030.6-5.3	GHK 22-30-5/7
24.0	32.6	2.2	27.0	SA 024-032.6-2.2	PW 024-032.6-2.2	
24.0	32.6	5.3	27.0	SA 024-032.6-5.3	PW 024-032.6-5.3	
25.0	33.6	5.3	28.0	SA 025-033.6-5.3	PW 025-033.6-5.3	GHK 25-33-5/7
28.0	36.6	5.3	31.0	SA 028-036.6-5.3	PW 028-036.6-5.3	GHK 28-36-5/7
30.0	38.6	5.3	33.0	SA 030-038.6-5.3	PW 030-038.6-5.3	GHK 30-38-5/7
30.0	40.0	3.0	34.5	SA 030-040-3	PW 030-040-3	
32.0	40.0	3.7	35.0	SA 032-040-3.7	PW 032-040-3.7	
32.0	40.6	5.3	35.0	SA 032-040.6-5.3	PW 032-040.6-5.3	GHK 32-40-5/7
35.0	40.0	3.7	37.0	SA 035-040-3.7	PW 035-040-3.7	
35.0	43.6	5.0	38.0	SA 035-043.6-5	PW 035-043.6-5	
35.0	43.6	5.3	38.0	SA 035-043.6-5.3	PW 035-043.6-5.3	GHK 35-43-5/7
35.0	45.0	4.0	39.0	SA 035-045-4	PW 035-045-4	
36.0	44.6	5.3	39.0	SA 036-044.6-5.3	PW 036-044.6-5.3	GHK 36-44-5/7
38.0	46.6	5.3	41.0	SA 038-046.6-5.3	PW 038-046.6-5.3	GHK 38-46-5/7
38.0	48.5	4.8	41.0	SA 038-048.5-4.8	PW 038-048.5-4.8	
40.0	48.6	5.3	43.0	SA 040-048.6-5.3	PW 040-048.6-5.3	GHK 40-48-5/7
42.0	50.6	5.3	45.0	SA 042-050.6-5.3	PW 042-050.6-5.3	GHK 42-50-5/7
45.0	53.6	5.3	48.0	SA 045-053.6-5.3	PW 045-053.6-5.3	GHK 45-53-5/7
45.0	55.6	5.3	48.0	SA 045-055.6-5.3	PW 045-055.6-5.3	GHK 45-55-5/7
45.0	60.0	4.2	53.0	SA 045-060-4.2	PW 045-060-4.2	
46.0	54.6	5.3	49.0	SA 046-054.6-5.3	PW 046-054.6-5.3	GHK 46-54-5/7

Wiper - SA

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height L	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)
47.0	55.6	5.3	50.0	SA 047-055.6-5.3	PW 047-055.6-5.3	GHK 47-55-5/7
50.0	58.6	5.3	53.0	SA 050-058.6-5.3	PW 050-058.6-5.3	GHK 50-58-5/7
50.0	60.6	5.3	53.0	SA 050-060.6-5.3	PW 050-060.6-5.3	GHK 50-60-5/7
50.0	65.5	4.2	58.0	SA 050-065.5-4.2	PW 050-065.5-4.2	
53.0	61.6	5.3	56.0	SA 053-061.6-5.3	PW 053-061.6-5.3	
55.0	63.6	5.3	58.0	SA 055-063.6-5.3	PW 055-063.6-5.3	GHK 55-63-5/7
55.0	65.6	5.3	58.0	SA 055-065.6-5.3	PW 055-065.6-5.3	GHK 55-65-5/7
56.0	64.6	5.3	59.0	SA 056-064.6-5.3	PW 056-064.6-5.3	GHK 56-64-5/7
56.0	66.6	5.3	59.0	SA 056-066.6-5.3	PW 056-066.6-5.3	GHK 56-66-5/7
60.0	68.6	5.3	63.0	SA 060-068.6-5.3	PW 060-068.6-5.3	GHK 60-68-5/7
60.0	70.6	5.3	63.0	SA 060-070.6-5.3	PW 060-070.6-5.3	GHK 60-70-5/7
60.0	70.6	5.5	66.5	SA 060-070.6-5.5	PW 060-070.6-5.5	
63.0	71.6	5.3	66.0	SA 063-071.6-5.3	PW 063-071.6-5.3	GHK 63-71-5/7
65.0	73.6	5.3	68.0	SA 065-073.6-5.3	PW 065-073.6-5.3	GHK 65-73-5/7
65.0	75.6	5.3	68.0	SA 065-075.6-5.3	PW 065-075.6-5.3	GHK 65-75-5/7
65.0	76.6	6.0	71.5	SA 065-076.6-6	PW 065-076.6-6	
67.0	76.6	5.5	71.0	SA 067-076.6-5.5	PW 067-076.6-5.5	
70.0	78.6	5.3	73.0	SA 070-078.6-5.3	PW 070-078.6-5.3	GHK 70-78-5/7
70.0	80.0	5.0	74.0	SA 070-080-5	PW 070-080-5	
70.0	80.6	5.3	73.0	SA 070-080.6-5.3	PW 070-080.6-5.3	GHK 70-80-5/7
70.0	80.0	7.0	74.0	SA 070-080-7	PW 070-080-7	
70.0	82.6	7.1	76.0	SA 070-082.6-7.1	PW 070-082.6-7.1	
73.0	81.6	5.3	76.0	SA 073-081.6-5.3	PW 073-081.6-5.3	
73.0	83.6	7.3	76.0	SA 073-083.6-7.3	PW 073-083.6-7.3	
75.0	83.6	5.3	78.0	SA 075-083.6-5.3	PW 075-083.6-5.3	GHK 75-83-5/7
75.0	87.2	7.1	81.0	SA 075-087.2-7.1	PW 075-087.2-7.1	GHK 75-87-7/12
78.0	86.0	5.0	81.0	SA 078-086-5	PW 078-086-5	
78.0	88.6	5.5	84.5	SA 078-088.6-5.5	PW 078-088.6-5.5	
78.0	92.2	7.1	85.0	SA 078-092.2-7.1	PW 078-092.2-7.1	
80.0	88.6	5.3	83.0	SA 080-088.6-5.3	PW 080-088.6-5.3	GHK 80-88-5/7
80.0	92.2	7.1	86.0	SA 080-092.2-7.1	PW 080-092.2-7.1	GHK 80-92-7/12
80.0	92.6	7.1	86.0	SA 080-092.6-7.1	PW 080-092.6-7.1	
85.0	93.6	5.3	88.0	SA 085-093.6-5.3	PW 085-093.6-5.3	GHK 85-93-5/7
85.0	97.2	7.1	91.0	SA 085-097.2-7.1	PW 085-097.2-7.1	GHK 85-97-7/12
90.0	98.6	5.3	93.0	SA 090-098.6-5.3	PW 090-098.6-5.3	GHK 90-98-5/7
90.0	100.0	7.0	94.0	SA 090-100-7	PW 090-100-7	
90.0	102.0	6.0	94.0	SA 090-102-6	PW 090-102-6	
90.0	102.2	7.1	96.0	SA 090-102.2-7.1	PW 090-102.2-7.1	GHK 90-102-7/12
92.0	103.6	5.5	97.0	SA 092-103.6-5.5	PW 092-103.6-5.5	
93.0	101.0	5.0	96.0	SA 093-101-5	PW 093-101-5	

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height L	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)
93.0	123.0	5.0	115.0	SA 093-123-5	PW 093-123-5	
95.0	105.0	10.0	99.0	SA 095-105-10	PW 095-105-10	
95.0	107.2	7.1	101.0	SA 095-107.2-7.1	PW 095-107.2-7.1	GHK 95-107-7/12
97.0	105.0	5.0	100.0	SA 097-105-5	PW 097-105-5	
99.0	109.6	5.5	105.5	SA 099-109.6-5.5	PW 099-109.6-5.5	
100.0	112.2	6.0	104.0	SA 100-112.2-6	PW 100-112.2-6	
100.0	112.2	7.1	106.0	SA 100-112.2-7.1	PW 100-112.2-7.1	GHK 100-112-7/12
105.0	113.6	5.3	108.0	SA 105-113.6-5.3	PW 105-113.6-5.3	GHK 105-113-5/7
105.0	117.2	7.1	111.0	SA 105-117.2-7.1	PW 105-117.2-7.1	GHK 105-117-7/12
110.0	122.2	7.1	116.0	SA 110-122.2-7.1	PW 110-122.2-7.1	GHK 110-122-7/12
112.0	124.2	7.1	118.0	SA 112-124.2-7.1	PW 112-124.2-7.1	
115.0	127.0	10.0	121.0	SA 115-127-10	PW 115-127-10	
115.0	127.2	7.1	121.0	SA 115-127.2-7.1	PW 115-127.2-7.1	GHK 115-127-7/12
118.0	126.0	5.0	121.0	SA 118-126-5	PW 118-126-5	
120.0	128.6	5.3	123.0	SA 120-128.6-5.3	PW 120-128.6-5.3	GHK 120-128-5/7
120.0	130.6	5.5	126.5	SA 120-130.6-5.5	PW 120-130.6-5.5	
120.0	132.2	7.1	126.0	SA 120-132.2-7.1	PW 120-132.2-7.1	GHK 120-132-7/12
125.0	137.2	7.1	131.0	SA 125-137.2-7.1	PW 125-137.2-7.1	GHK 125-137-7/12
125.0	140.0	10.2	132.6			GHK 125-140-10/16
128.0	140.2	7.1	134.0	SA 128-140.2-7.1	PW 128-140.2-7.1	
130.0	142.2	7.1	136.0	SA 130-142.2-7.1	PW 130-142.2-7.1	GHK 130-142-7/12
135.0	147.2	7.1	141.0	SA 135-147.2-7.1	PW 135-147.2-7.1	GHK 135-147-7/12
140.0	148.6	6.0	143.0	SA 140-148.6-6	PW 140-148.6-6	
140.0	152.2	7.1	146.0	SA 140-152.2-7.1	PW 140-152.2-7.1	GHK 140-152-7/12
140.0	155.0	9.0	147.0	SA 140-155-9	PW 140-155-9	
140.0	155.0	10.2	147.6			GHK 140-155-10/16
141.0	151.6	5.5	147.5	SA 141-151.6-5.5	PW 141-151.6-5.5	
143.0	151.0	5.5	146.0	SA 143-151-5.5	PW 143-151-5.5	
145.0	157.2	7.1	151.0	SA 145-157.2-7.1	PW 145-157.2-7.1	GHK 145-157-7/12
145.0	160.0	8.0	152.0	SA 145-160-8	PW 145-160-8	
148.0	160.0	7.0	152.0	SA 148-160-7	PW 148-160-7	
150.0	162.2	7.1	156.0	SA 150-162.2-7.1	PW 150-162.2-7.1	GHK 150-162-7/12
150.0	165.0	7.5	156.0	SA 150-165-7.5	PW 150-165-7.5	
150.0	165.0	10.2	157.6			GHK 150-165-10/16
155.0	167.2	7.1	161.0	SA 155-167.2-7.1	PW 155-167.2-7.1	GHK 155-167-7/12
160.0	172.2	7.1	166.0	SA 160-172.2-7.1	PW 160-172.2-7.1	
160.0	175.0	10.2	167.6			GHK 160-175-10/16
160.0	175.2	10.1	168.0	SA 160-175.2-10.1	PW 160-175.2-10.1	
162.0	172.6	5.5	168.0	SA 162-172.6-5.5	PW 162-172.6-5.5	
163.0	175.2	7.1	169.0	SA 163-175.2-7.1	PW 163-175.2-7.1	

Wiper - SA

(Metric Size)

Rod Dia. d	Groove Dia. D	Seal Height L	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)
165.0	177.2	7.1	171.0			GHK 165-177-7/12
165.0	180.0	10.2	173.0			GHK 165-180-10/16
170.0	178.6	5.3	173.0	SA 170-178.6-5.3	PW 170-178.6-5.3	
170.0	185.0	10.2	178.0			GHK 170-185-10/16
170.0	185.2	10.1	178.0	SA 170-185.2-10.1	PW 170-185.2-10.1	
175.0	187.2	7.1	181.0			GHK 175-187-7/12
180.0	195.0	10.2	188.0			GHK 180-195-10/16
180.0	195.2	10.1	188.0	SA 180-195.2-10.1	PW 180-195.2-10.1	
180.0	200.0	7.0	188.0	SA 180-200-7	PW 180-200-7	
180.0	200.0	10.2	190.0			GHK 180-200-10/18
183.0	193.6	5.5	189.0	SA 183-193.6-5.5	PW 183-193.6-5.5	
188.0	200.2	7.1	194.0	SA 188-200.2-7.1	PW 188-200.2-7.1	
190.0	205.2	10.1	198.0	SA 190-205.2-10.1	PW 190-205.2-10.1	
190.0	210.0	10.1	200.0	SA 190-210-10.1	PW 190-210-10.1	
190.0	210.0	10.2	200.0			GHK 190-210-10/18
200.0	215.2	10.1	208.0	SA 200-215.2-10.1	PW 200-215.2-10.1	
200.0	220.0	10.2	210.0			GHK 200-220-10/18
210.0	225.2	10.1	218.0	SA 210-225.2-10.1	PW 210-225.2-10.1	
220.0	235.2	10.1	228.0	SA 220-235.2-10.1	PW 220-235.2-10.1	
220.0	240.0	10.1	228.0	SA 220-240-10.1	PW 220-240-10.1	
220.0	240.0	10.2	230.0			GHK 220-240-10/18
230.0	245.2	10.1	238.0	SA 230-245.2-10.1	PW 230-245.2-10.1	
240.0	255.2	10.1	248.0	SA 240-255.2-10.1	PW 240-255.2-10.1	
250.0	265.2	10.1	258.0	SA 250-265.2-10.1	PW 250-265.2-10.1	
250.0	270.0	10.2	260.0			GHK 250-270-10/18
257.0	267.6	5.5	264.0	SA 257-267.6-5.5	PW 257-267.6-5.5	
270.0	285.5	10.2	278.0	SA 270-285.5-10.2	PW 270-285.5-10.2	
280.0	300.0	10.2	290.0	SA 280-300-10.2	PW 280-300-10.2	

SPEC SEAL

Seals & O-rings Specialist

Wiper - PW/HH

Wipers

PW/HH, EDK (Metric Size)

PW/HH (PU)

EDK (NBR)

Material	Temp. (°c)	Speed (m/s)
PU	-40 +95	1
NBR	-30 +110	1

- High wear resistance.
- Good prevention against external fluid intrusion.
- Easy installation.
- Space-saving construction.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Seal Height H	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)
18.0	24.0	1.30	2.5	20.1		EDK 18
25.0	32.5	1.60	3.0	27.9	PW/HH 25-32.5-1.6/27.9	EDK 25
30.0	37.5	1.60	3.0	32.9		EDK 30
32.0	39.5	1.60	3.0	34.9	PW/HH 32-39.5-1.6/34.9	EDK 32
33.0	40.5	1.60	3.0	35.9	PW/HH 33-40.5-1.6/35.9	
35.0	42.5	1.60	3.0	37.9		EDK 35
40.0	47.5	1.60	3.0	42.9	PW/HH 40-47.5-1.6/42.9	EDK 40
43.0	50.5	1.60	3.0	45.9		EDK 43
45.0	52.5	1.60	3.0	47.9	PW/HH 45-52.5-1.6/47.9	EDK 45
50.0	60.0	2.15	4.0	54.6	PW/HH 50-60-2.15/54.6	EDK 50
55.0	65.0	2.15	4.0	59.6	PW/HH 55-65-2.15/59.6	EDK 55
60.0	70.0	2.15	4.0	64.6		EDK 60
63.0	73.0	2.15	4.0	67.6	PW/HH 63-73-2.15/67.6	EDK 63
65.0	75.0	2.15	4.0	69.6		EDK 65
70.0	80.0	2.15	4.0	74.6		EDK 70
75.0	85.0	2.15	4.0	79.6	PW/HH 75-85-2.15/79.6	EDK 75
78.0	88.0	2.15	4.0	82.6		EDK 78
80.0	90.0	2.15	4.0	84.6	PW/HH 80-90-2.15/84.6	EDK 80
90.0	100.0	2.15	4.0	94.6		EDK 90
100.0	110.0	2.15	4.0	104.6		EDK 100
110.0	120.0	2.15	4.0	114.6		EDK 110
115.0	125.0	2.15	4.0	119.6		EDK 115
120.0	130.0	2.15	4.0	124.6		EDK 120
127.0	137.0	2.15	4.0	131.6		EDK 127
130.0	140.0	2.15	4.0	134.6		EDK 130
140.0	150.0	2.15	4.0	144.6		EDK 140
170.0	185.0	3.15	6.0	177.0		EDK 170

SPEC SEAL Seals & O-rings Specialist

Wiper - H38

Wipers

H-38 (Metric Size)

H-38

Material	Temp. (°c)	Speed (m/s)
PU	-40 +120	4

- Outside lip for effective housing seal.
- Pressure relief nibs.
- Effective scraping lip.
- Wear resistant, long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Radius mm.		
Rod ød	r1	r2
up to 50 mm.	0.4	0.2
up to 90 mm.	0.4	0.4
up to 200 mm.	0.4	0.6
above 200 mm.	0.8	0.8

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Part Width	Bore Dia.	Reference (For order processing)	Reference
d	D	L	L1	D1		
18.0	24.0	5.0	6.5	21.0	H-38 018-024-5	4392000
20.0	28.0	5.0	7.0	25.5	H-38 020-028-5	4321900
22.0	30.0	5.0	7.0	27.5	H-38 022-030-5	4322000
25.0	33.0	5.0	8.0	30.5	H-38 025-033-5	6617700
28.0	36.0	5.0	8.0	33.5	H-38 028-036-5	6617800
30.0	38.0	5.0	7.0	35.5	H-38 030-038-5	4419200
30.0	41.2	7.5	10.0	37.0	H-38 030-041.2-7.5	4528900
32.0	40.0	5.0	8.0	37.5	H-38 032-040-5	6617900
36.0	44.0	5.0	8.0	41.5	H-38 036-044-5	6618000
40.0	48.0	5.0	8.0	45.5	H-38 040-048-5	6618100
45.0	53.0	5.0	8.0	50.5	H-38 045-053-5	6618200
50.0	58.0	5.0	8.0	55.5	H-38 050-058-5	6618300
50.0	58.6	5.3	7.0	53.0	H-38 050-058.6-5.3	4300400
50.0	60.6	5.3	7.0	53.0	H-38 050-060.6-5.3	4458000
56.0	66.0	6.3	10.0	63.0	H-38 056-066-6.3	6618400
56.0	66.6	5.3	7.0	59.0	H-38 056-066.6-5.3	4458100
60.0	70.0	5.3	7.0	66.0	H-38 060-070-5.3	4386200
60.0	70.0	6.3	10.0	67.0	H-38 060-070-6.3	4270200
60.0	70.6	5.3	7.0	63.0	H-38 060-070.6-5.3	4456400
63.0	73.0	6.3	10.0	70.0	H-38 063-073-6.3	6618500
63.0	73.6	5.3	7.0	66.0	H-38 063-073.6-5.3	4283600
65.0	75.0	6.3	10.0	72.0	H-38 065-075-6.3	4343800
70.0	80.0	6.3	10.0	77.0	H-38 070-080-6.3	6618600
70.0	80.6	5.3	7.0	73.0	H-38 070-080.6-5.3	4454000
70.0	82.2	7.2	12.0	76.0	H-38 070-082.2-7.2	4243900
75.0	83.6	5.3	7.0	78.0	H-38 075-083.6-5.3	4539500
75.0	85.0	6.3	10.0	82.0	H-38 075-085-6.3	4532500
75.0	87.2	7.2	11.0	81.0	H-38 075-087.2-7.2	4384400
80.0	90.0	6.3	10.0	87.0	H-38 080-090-6.3	6618700
80.0	91.0	7.5	10.3	85.0	H-38 080-091-7.5	4493200
80.0	92.2	7.1	12.0	86.0	H-38 080-092.2-7.1	4242800
82.6	92.2	5.3	7.1	85.7	H-38 082.6-092.2-5.3	4415500
85.0	93.6	5.3	7.0	88.0	H-38 085-093.6-5.3	4292100
85.0	98.0	7.5	11.5	92.0	H-38 085-098-7.5	4332800
88.0	100.2	7.1	11.0	94.0	H-38 088-100.2-7.1	4269400
90.0	100.0	6.3	10.0	97.0	H-38 090-100-6.3	6618800
90.0	102.0	7.1	11.0	96.0	H-38 090-102-7.1	4324500
95.0	107.0	7.1	12.0	101.0	H-38 095-107-7.1	6667600
100.0	110.6	5.3	7.0	104.0	H-38 100-110.6-5.3	4300200
100.0	112.2	7.1	12.0	106.0	H-38 100-112.2-7.1	4324600

Wiper - H38

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Part Width	Bore Dia.	Reference (For order processing)	Reference
d	D	L	L1	D1		
100.0	115.0	9.5	14.0	110.0	H-38 100-115-9.5	6618900
101.6	116.6	9.5	14.0	111.6	H-38 101.6-116.6-9.5	6619010
105.0	113.0	5.0	7.0	110.5	H-38 105-113-5	4290300
105.0	120.0	7.2	12.0	112.0	H-38 105-120-7.2	4539100
110.0	122.2	7.2	12.0	116.0	H-38 110-122.2-7.2	4459200
110.0	125.0	9.5	14.0	120.0	H-38 110-125-9.5	6619000
115.0	127.0	7.1	12.0	121.0	H-38 115-127-7.1	4324800
120.0	132.0	7.1	12.0	126.0	H-38 120-132-7.1	4352600
120.0	132.2	7.2	12.0	130.0	H-38 120-132.2-7.2	4454300
120.0	135.0	9.5	14.0	130.0	H-38 120-135-9.5	4385600
125.0	133.0	5.3	7.0	130.8	H-38 125-133-5.3	4393000
125.0	137.2	7.7	12.0	131.0	H-38 125-137.2-7.7	4233500
125.0	140.0	9.5	14.0	135.0	H-38 125-140-9.5	6619100
130.0	142.2	7.1	12.0	136.0	H-38 130-142.2-7.1	4304300
132.0	144.2	7.1	12.0	138.0	H-38 132-144.2-7.1	4269500
135.0	150.0	9.5	14.0	145.0	H-38 135-150-9.5	4278700
140.0	152.2	7.6	12.0	146.0	H-38 140-152.2-7.6	4324900
140.0	155.0	9.5	14.0	150.0	H-38 140-155-9.5	6619200
145.0	160.0	9.5	14.0	155.0	H-38 145-160-9.5	4560600
150.0	162.2	7.6	12.0	156.0	H-38 150-162.2-7.6	4278900
150.0	165.0	10.1	16.0	157.6	H-38 150-165-10.1	4342500
150.0	165.0	7.2	12.0	158.6	H-38 150-165-7.2	6668500
150.0	166.0	8.0	12.0	161.0	H-38 150-166-8.0	4336700
155.0	163.0	5.0	7.0	160.5	H-38 155-163-5	4290200
155.0	167.2	7.6	12.0	161.0	H-38 155-167.2-7.6	4288200
155.0	175.0	10.2	18.0	165.0	H-38 155-175-10.2	4226400
160.0	172.2	7.6	11.5	166.0	H-38 160-172.2-7.6	4405700
160.0	175.0	10.2	16.0	167.0	H-38 160-175-10.2	4454100
160.0	175.0	9.5	14.0	170.0	H-38 160-175-9.5	6619300
165.0	180.0	9.5	14.0	175.0	H-38 165-180-9.5	4537000
170.0	182.2	7.7	12.0	176.0	H-38 170-182.2-7.7	4233600
177.0	192.0	9.5	14.0	187.0	H-38 177-192-9.5	4287900
180.0	195.0	9.5	14.0	190.0	H-38 180-195-9.5	6619400
180.0	200.0	10.2	18.0	190.0	H-38 180-200-10.2	4460900
195.0	210.0	10.1	16.0	202.5	H-38 195-210-10.1	4325100
200.0	208.6	5.3	6.3	203.0	H-38 200-208.6-5.3	4391600
200.0	215.0	9.5	14.0	210.0	H-38 200-215-9.5	6619500
200.0	220.0	10.2	18.0	210.0	H-38 200-220-10.2	4387100
205.0	220.0	9.5	14.0	215.0	H-38 205-220-9.5	4560500
210.0	226.0	8.0	12.0	221.0	H-38 210-226-8.0	4336600

SPEC SEAL Seals & O-rings Specialist

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Part Width	Bore Dia.	Reference (For order processing)	Reference
d	D	L	L1	D1		
210.0	230.0	10.2	18.0	222.0	H-38 210-230-10.2	4325300
212.0	232.0	12.5	17.5	225.5	H-38 212-232-12.5	4293900
220.0	235.0	10.2	16.0	227.6	H-38 220-235-10.2	4325400
220.0	240.0	12.5	18.0	233.5	H-38 220-240-12.5	6619600
225.0	240.0	9.5	14.0	235.0	H-38 225-240-9.5	4287800
225.0	245.0	10.2	18.0	235.0	H-38 225-245-10.2	4325500
230.0	238.6	5.3	7.0	233.0	H-38 230-238.6-5.3	4514000
230.0	246.0	7.5	12.0	240.7	H-38 230-246-7.5	4290700
235.0	255.0	10.2	18.0	245.0	H-38 235-255-10.2	4325700
240.0	260.0	10.2	18.0	250.0	H-38 240-260-10.2	4520900
245.0	265.0	12.5	18.0	258.5	H-38 245-265-12.5	4539600
250.0	270.0	10.2	18.0	260.0	H-38 250-270-10.2	4460100
250.0	270.0	12.5	18.0	263.5	H-38 250-270-12.5	6619700
260.0	280.0	10.2	18.0	270.5	H-38 260-280-10.2	4325900
265.0	285.0	10.2	15.0	275.0	H-38 265-285-10.2	4560400
270.0	278.6	5.3	7.0	273.0	H-38 270-278.6-5.3	4391700
285.0	305.0	12.5	18.0	298.5	H-38 285-305-12.5	4537100
288.0	308.0	10.2	18.0	298.0	H-38 288-308-10.2	4265300
290.0	310.0	12.5	18.0	303.5	H-38 290-310-12.5	4467300
300.0	316.0	7.5	12.0	310.7	H-38 300-316-7.5	4290800
300.0	320.0	12.5	18.0	313.5	H-38 300-320-12.5	4525300
305.0	325.0	12.5	18.0	318.5	H-38 305-325-12.5	4473200
320.0	340.0	10.2	18.0	330.0	H-38 320-340-10.2	4454200

SPEC SEAL Seals & O-rings Specialist

Wiper - SAB

Wipers

SAB, RSW, GHW, RCI (Metric Size)

SAB, RSW (PU)

GHW, RCI (Dynathan)

Material	Temp. (°c)	Speed (m/s)
PU	-35 +100	1
Dynathan	-30 +110	1

- Good scraping effect.
- Wear resistant, long service life.
- Retaining residual oil film.
- Standard elements for standardized installation grooves.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)
12.0	18.6	3.8	15.0	SAB 012-018.6-3.8	RSW 012-018.6-3.8	GHW 12-18-3.8/5	
12.0	18.0	4.0	14.5				RCI 012-018-4
14.0	20.6	3.8	17.0	SAB 014-020.6-3.8	RSW 014-020.6-3.8	GHW 14-20-3.8/5	
14.0	20.0	4.0	16.5				RCI 014-020-4
16.0	22.0	4.0	18.5				RCI 016-022-4
18.0	24.6	3.8	21.0	SAB 018-024.6-3.8	RSW 018-024.6-3.8	GHW 18-24-3.8/5	
18.0	24.0	4.0	20.5				RCI 018-024-4
20.0	28.6	5.3	23.0	SAB 020-028.6-5.3	RSW 020-028.6-5.3	GHW 20-28-5/7	
20.0	26.0	4.0	22.5				RCI 020-026-4
22.0	30.6	5.3	25.0	SAB 022-030.6-5.3	RSW 022-030.6-5.3	GHW 22-30-5/7	
22.0	28.0	4.0	24.5				RCI 022-028-4
24.0	32.6	5.3	27.0	SAB 024-032.6-5.3	RSW 024-032.6-5.3	GHW 24-32-5/7	
25.0	33.6	5.3	28.0	SAB 025-033.6-5.3	RSW 025-033.6-5.3	GHW 25-33-5/7	
25.0	31.0	4.0	27.5				RCI 025-031-4
28.0	36.6	5.3	31.0	SAB 028-036.6-5.3	RSW 028-036.6-5.3	GHW 28-36-5/7	
28.0	36.0	5.0	31.0				RCI 028-036-5
30.0	38.6	5.3	33.0	SAB 030-038.6-5.3	RSW 030-038.6-5.3	GHW 30-38-5/7	
30.0	38.0	5.0	33.0				RCI 030-038-5
32.0	40.6	5.3	35.0	SAB 032-040.6-5.3	RSW 032-040.6-5.3	GHW 32-40-5/7	
32.0	40.0	5.0	35.0				RCI 032-040-5
35.0	43.6	5.3	38.0	SAB 035-043.6-5.3	RSW 035-043.6-5.3	GHW 35-43-5/7	
36.0	44.6	5.3	39.0	SAB 036-044.6-5.3	RSW 036-044.6-5.3	GHW 36-44-5/7	
36.0	44.0	5.0	39.0				RCI 036-044-5
40.0	48.6	5.3	43.0	SAB 040-048.6-5.3	RSW 040-048.6-5.3	GHW 40-48-5/7	
40.0	48.0	5.0	43.0				RCI 040-048-5
45.0	53.6	5.3	48.0	SAB 045-053.6-5.3	RSW 045-053.6-5.3	GHW 45-53-5/7	
45.0	53.0	5.0	48.0				RCI 045-053-5
50.0	58.6	5.3	53.0	SAB 050-058.6-5.3	RSW 050-058.6-5.3	GHW 50-58-5/7	
50.0	58.0	5.0	53.0				RCI 050-058-5
55.0	63.6	5.3	58.0	SAB 055-063.6-5.3	RSW 055-063.6-5.3	GHW 55-63-5/7	
56.0	64.6	5.3	59.0	SAB 056-064.6-5.3	RSW 056-064.6-5.3	GHW 56-64-5/7	
56.0	66.0	6.0	59.0				RCI 056-066-6
60.0	68.6	5.3	63.0	SAB 060-068.6-5.3	RSW 060-068.6-5.3	GHW 60-68-5/7	
60.0	70.0	6.0	63.0				RCI 060-070-6
63.0	71.6	5.3	66.0	SAB 063-071.6-5.3	RSW 063-071.6-5.3	GHW 63-71-5/7	
63.0	73.0	6.0	66.0				RCI 063-073-6
65.0	73.6	5.3	68.0	SAB 065-073.6-5.3	RSW 065-073.6-5.3	GHW 65-73-5/7	
65.0	75.0	6.0	68.0				RCI 065-075-6
70.0	78.6	5.3	73.0	SAB 070-078.6-5.3	RSW 070-078.6-5.3	GHW 70-78-5/7	
70.0	80.0	6.0	73.0				RCI 070-080-6

Wiper - SAB

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)	Reference (For order processing)
75.0	83.6	5.3	78.0	RSW 075-083.6-5.3	RSW 075-083.6-5.3	GHW 75-83-5/7	
80.0	88.6	5.3	83.0	RSW 080-088.6-5.3	RSW 080-088.6-5.3	GHW 80-88-5/7	
80.0	90.0	6.0	83.0				RCI 080-090-6
85.0	97.2	7.1	91.0	RSW 085-097.2-7.1	RSW 085-097.2-7.1	GHW 85-97-7/12	
85.0	95.0	6.0	88.0				RCI 085-095-6
90.0	102.2	7.1	96.0	RSW 090-102.2-7.1	RSW 090-102.2-7.1	GHW 90-102-7/12	
90.0	100.0	6.0	93.0				RCI 090-100-6
100.0	112.2	7.1	106.0	RSW 100-112.2-7.1	RSW 100-112.2-7.1	GHW 100-112-7/12	
100.0	115.0	8.5	104.0				RCI 100-115-8.5
110.0	122.2	7.1	116.0	RSW 110-122.2-7.1	RSW 110-122.2-7.1	GHW 110-122-7/12	
110.0	125.0	8.5	114.0				RCI 110-125-8.5
125.0	140.0	8.5	129.0				RCI 125-140-8.5
140.0	155.0	8.5	144.0				RCI 140-155-8.5
160.0	175.0	8.5	164.0				RCI 160-175-8.5
180.0	195.0	8.5	184.0				RCI 180-195-8.5

SPEC SEAL
Seals & O-rings Specialist

SPEC SEAL

Seals & O-rings Specialist

Wiper - DH

Wipers

DH (Metric Size)

DH

Material	Temp. (°c)	Speed (m/s)
PU	-25 +80	1

- Good scraping effect.
- Wear resistant, long service life.
- Retaining residual oil film.
- Standard elements for standardized installation grooves.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Bore Dia.	Seal Step Height	Seal Height	Reference (For order processing)
d	D	L	D1	h	H	
11.2	19.2	5.0	15.5	4.5	6.0	DH-011.2
14.0	22.0	5.0	18.3	4.5	6.0	DH-014
16.0	24.0	5.0	20.3	4.5	6.0	DH-016
18.0	26.0	5.0	22.3	4.5	6.0	DH-018
20.0	28.0	5.0	24.3	4.5	6.0	DH-020
22.4	30.4	5.0	26.7	4.5	6.0	DH-022.4
23.5	31.5	5.0	27.8	4.5	6.0	DH-023.5
25.0	33.0	5.0	29.3	4.5	6.0	DH-025
28.0	36.0	5.0	32.3	4.5	6.0	DH-028
30.0	38.0	6.0	34.0	5.0	6.5	DH-030
31.5	39.5	6.0	35.5	5.0	6.5	DH-031.5
32.0	40.0	6.0	36.0	5.0	6.5	DH-032
35.0	43.0	6.0	39.0	5.0	6.5	DH-035
35.5	43.5	6.0	39.5	5.0	6.5	DH-035.5
38.0	46.0	6.0	42.0	5.0	6.5	DH-038
40.0	48.0	6.0	44.0	5.0	6.5	DH-040
45.0	53.0	6.0	49.0	5.0	6.5	DH-045
50.0	58.0	6.0	54.0	5.0	6.5	DH-050
53.0	61.0	6.0	57.0	5.0	6.5	DH-053
55.0	63.0	6.0	59.0	5.0	6.5	DH-055
56.0	64.0	6.0	60.0	5.0	6.5	DH-056
60.0	68.0	6.0	64.0	5.0	6.5	DH-060
63.0	71.0	6.0	67.0	5.0	6.5	DH-063
65.0	73.0	6.0	69.0	5.0	6.5	DH-065
67.0	75.0	6.0	71.0	5.0	6.5	DH-067
70.0	80.0	7.0	75.0	6.0	8.0	DH-070
71.0	81.0	7.0	76.0	6.0	8.0	DH-071
75.0	85.0	7.0	80.0	6.0	8.0	DH-075
80.0	90.0	7.0	85.0	6.0	8.0	DH-080
85.0	95.0	7.0	90.0	6.0	8.0	DH-085
90.0	100.0	7.0	95.0	6.0	8.0	DH-090
95.0	105.0	7.0	100.0	6.0	8.0	DH-095
98.0	108.0	7.0	103.0	6.0	8.0	DH-098
100.0	110.0	7.0	105.0	6.0	8.0	DH-100
110.0	120.0	7.0	115.0	6.0	8.0	DH-110
112.0	122.0	7.0	117.0	6.0	8.0	DH-112
125.0	138.0	8.0	132.0	7.0	9.5	DH-125
130.0	143.0	8.0	137.0	7.0	9.5	DH-130
136.0	149.0	8.0	143.0	7.0	9.5	DH-136
140.0	153.0	8.0	147.0	7.0	9.5	DH-140
145.0	158.0	8.0	152.0	7.0	9.5	DH-145
160.0	174.0	8.0	167.0	7.0	9.5	DH-160
165.0	179.0	8.0	172.0	7.0	9.5	DH-165
180.0	194.0	8.0	187.0	7.0	9.5	DH-180
200.0	214.0	8.0	207.0	7.0	9.5	DH-200
204.0	218.0	8.0	211.0	7.0	9.5	DH-204
230.0	244.0	8.0	237.0	7.0	9.5	DH-230
250.0	263.0	8.0	257.0	7.0	9.5	DH-250

Wiper - AY, H839

Wipers

AY, H-839 (Metric Size)

AY, H-839

Material	Temp. (°c)	Speed (m/s)
PU	-35 +100	1

- Good scraping effect.
- Wear resistant, long service life.
- Retaining residual oil film.
- Standard elements for standardized installation grooves.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Prefix No.	Reference (For order processing)	Reference (For order processing)	Reference
8.0	13.0	3.5	10.5	0080	AY 008-013-3.5		
10.0	16.0	4.0	12.5	1003	AY 010-016-4		
12.0	18.0	4.0	14.5	1020	AY 012-018-4	H-839 012-018-4	4436800
14.0	20.0	4.0	16.5	1040	AY 014-020-4	H-839 014-020-4	4436900
14.0	22.0	4.8	18.3			H-839 014-022-4.8	4632000
16.0	22.0	4.0	18.5	1059	AY 016-022-4		
16.0	24.0	4.8	19.5			H-839 016-024-4.8	4632100
18.0	24.0	4.0	20.5	1080	AY 018-024-4	H-839 018-024-4	4437000
18.0	26.0	4.8	22.3			H-839 018-026-4.8	4630800
20.0	26.0	4.0	22.5	2026	AY 020-026-4	H-839 020-026-4	4415000
20.0	28.0	4.8	24.3			H-839 020-028-4.8	4630900
22.0	28.0	4.0	24.5	2020	AY 022-028-4	H-839 022-028-4	4437100
22.4	30.4	4.8	26.7			H-839 022.4-030.4-4.8	4630100
25.0	31.0	4.0	27.5	2050	AY 025-031-4		
25.0	33.0	4.8	29.3			H-839 025-033-4.8	4631000
28.0	36.0	5.0	31.0	2080	AY 028-036-5	H-839 028-036-5	4437200
28.0	36.0	4.8	32.3			H-839 028-036-4.8	4631100
30.0	38.0	5.0	33.0	3001	AY 030-038-5	H-839 030-038-5	4519200
30.0	38.0	5.8	34.0			H-839 030-038-5.8	4630200
31.5	39.5	4.8	35.5			H-839 031.5-039.5-4.8	4632200
32.0	40.0	4.8	35.0			H-839 032-040-4.8	4632300
32.0	40.0	5.0	35.0	3002	AY 032-040-5	H-839 032-040-5	4594000
35.0	43.0	5.8	39.0			H-839 035-043-5.8	4630300
35.5	43.5	5.8	39.5			H-839 035.5-043.5-5.8	4630400
36.0	44.0	5.0	39.0	3060	AY 036-044-5	H-839 036-044-5	4437300
37.0	45.0	5.0	40.0	3070	AY 037-045-5		
38.0	46.0	5.8	42.0			H-839 038-046-5.8	4632400
40.0	48.0	5.0	43.0	4002	AY 040-048-5	H-839 040-048-5	4591600
40.0	48.0	5.8	44.0			H-839 040-048-5.8	4630500
45.0	53.0	5.0	48.0	4045	AY 045-053-5	H-839 045-053-5	4437400
45.0	53.0	5.8	49.0			H-839 045-053-5.8	4630600
46.0	54.0	5.0	49.0	4060	AY 046-054-5		
50.0	58.0	5.0	53.0	5002	AY 050-058-5	H-839 050-058-5	4584400
50.0	58.0	5.8	54.0			H-839 050-058-5.8	4630000
53.0	61.0	5.8	57.0			H-839 053-061-5.8	4632500
55.0	63.0	5.8	59.0			H-839 055-063-5.8	4630700
55.0	65.0	6.0	58.0	5050	AY 055-065-6	H-839 055-065-6	4575200
56.0	64.0	5.8	60.0			H-839 056-064-5.8	4632600
56.0	66.0	6.0	59.0	5060	AY 056-066-6	H-839 056-066-6	4437500
60.0	70.0	6.0	63.0	6003	AY 060-070-6		

Wiper - AY, H839

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Prefix No.	Reference (For order processing)	Reference (For order processing)	Reference
60.0	68.0	5.8	64.0			H-839 060-068-5.8	4631200
63.0	71.0	5.8	67.0			H-839 063-071-5.8	4632700
63.0	73.0	6.0	66.0	6030	AY 063-073-6		
65.0	73.0	5.8	69.0			H-839 065-073-5.8	4631300
65.0	75.0	6.0	68.0	6065	AY 065-075-6	H-839 065-075-6	4575300
70.0	80.0	6.0	73.0	7000	AY 070-080-6	H-839 070-080-6	4437600
70.0	80.0	6.8	75.0			H-839 070-080-6.8	4631400
75.0	85.0	6.0	78.0	7085	AY 075-085-6		
75.0	85.0	6.8	80.0			H-839 075-085-6.8	4631500
80.0	90.0	6.0	83.0	8030	AY 080-090-6		
80.0	90.0	6.8	85.0			H-839 080-090-6.8	4631600
85.0	95.0	6.0	88.0	8050	AY 085-095-6		
90.0	100.0	6.0	93.0	9000	AY 090-100-6	H-839 090-100-6	4437700
90.0	100.0	6.8	95.0			H-839 090-100-6.8	4631700
95.0	105.0	6.8	100.0			H-839 095-105-6.8	4631900
100.0	110.0	6.8	105.0			H-839 100-110-6.8	4631800
110.0	120.0	6.8	115.0			H-839 110-120-6.8	4633000
110.0	125.0	8.5	114.0	B000	AY 110-125-8.5	H-839 110-125-8.5	4437800
112.0	122.0	6.8	117.0			H-839 112-122-6.8	4633100
125.0	138.0	7.8	132.0			H-839 125-138-7.8	4633200
125.0	140.0	8.5	129.0	C030	AY 125-140-8.5		
136.0	149.0	7.8	143.0			H-839 136-149-7.8	4633300
140.0	153.0	7.8	147.0			H-839 140-153-7.8	4633400
140.0	155.0	8.5	144.0	E001	AY 140-155-8.5	H-839 140-155-8.5	4437900
145.0	158.0	7.8	152.0			H-839 145-158-7.8	4633500
160.0	174.0	7.8	167.0			H-839 160-174-7.8	4633600
180.0	196.0	9.5	184.0			H-839 180-196-9.5	4595600

SPEC SEAL Seals & O-rings Specialist

SPEC SEAL

Seals & O-rings Specialist

Wiper - GPY

Wipers

GPY, PU5 (Metric Size)

GPY, PU5

Material	Temp. (°c)	Speed (m/s)
PU	-30 +100	2

- An external static lip helps control the ingress of contaminants from around the wiper in the groove.
- A support heel avoids wiper tip up.
- Excellent wiping ability and preservation of the lubricating film.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Part Length. L1	Bore Dia. D1	Reference (For order processing)	Reference (For order processing)
16.0	24.0	5.0	7.0	21.5	GPY 016-024-5/7.8	PU5 016-024-5/7
18.0	26.0	5.0	7.0	23.5	GPY 018-026-5/7.8	PU5 018-026-5/7
20.0	28.0	5.0	7.0	25.5	GPY 020-028-5/7.8	PU5 020-028-5/7
22.0	30.0	5.0	7.0	27.5	GPY 022-030-5/7.8	PU5 022-030-5/7
25.0	33.0	5.0	7.0	30.5	GPY 025-033-5/7.8	PU5 025-033-5/7
28.0	36.0	5.0	7.0	33.5	GPY 028-036-5/7.8	PU5 028-036-5/7
30.0	38.0	5.0	7.0	35.5	GPY 030-038-5/7.8	PU5 030-038-5/7
32.0	40.0	5.0	7.0	37.5	GPY 032-040-5/7.8	PU5 032-040-5/7
35.0	43.0	5.0	7.0	40.5	GPY 035-043-5/7.8	PU5 035-043-5/7
36.0	44.0	5.0	7.0	41.5	GPY 036-044-5/7.8	PU5 036-044-5/7
40.0	48.0	5.0	7.0	45.5	GPY 040-048-5/7.8	PU5 040-048-5/7
45.0	53.0	5.0	7.0	50.5	GPY 045-053-5/7.8	PU5 045-053-5/7
50.0	58.0	5.0	7.0	55.5	GPY 050-058-5/7.8	PU5 050-058-5/7
56.0	66.0	6.3	8.3	63.0	GPY 056-066-6.3/9	PU5 056-066-6.3/8.3
63.0	73.0	6.3	8.3	70.0	GPY 063-073-6.3/9	PU5 063-073-6.3/8.3
70.0	80.0	6.3	8.3	77.0	GPY 070-080-6.3/9	PU5 070-080-6.3/8.3
80.0	90.0	6.3	8.3	87.0	GPY 080-090-6.3/9	PU5 080-090-6.3/8.3
90.0	100.0	6.3	8.3	97.0	GPY 090-100-6.3/9	PU5 090-100-6.3/8.3
100.0	115.0	9.5	12.0	110.0	GPY 100-115-9.5/13	PU5 100-115-9.5/12
110.0	125.0	9.5	12.0	120.0	GPY 110-125-9.5/13	PU5 110-125-9.5/12
125.0	140.0	9.5	12.0	135.0	GPY 125-140-9.5/13	PU5 125-140-9.5/12
140.0	155.0	9.5	12.0	150.0	GPY 140-155-9.5/13	PU5 140-155-9.5/12
160.0	175.0	9.5	12.0	170.0	GPY 160-175-9.5/13	PU5 160-175-9.5/12
180.0	195.0	9.5	12.0	190.0	GPY 180-195-9.5/13	PU5 180-195-9.5/12
200.0	215.0	9.5	12.0	210.0	GPY 200-215-9.5/13	PU5 200-215-9.5/12

SPEC SEAL Seals & O-rings Specialist

Wiper - SDR

Wipers

SDR, SDR-F (Metric Size)

SDR, SDR-F

Material	Temp. (°c)	Speed (m/s)
NBR	-25 +100	1
FPM	-5 +150	0.5

- Easy installation.
- High wear resistance.
- Popular dust seal.
- Used for cylinder placed indoor.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Bore Dia.	Step Width.	Seal Step Height	Seal Height	Reference NBR (For order processing)	Reference FPM (For ordering)
d	D	L	D1	a	h	H		
12.0	20.0	5.0	16.3	2.0	4.5	6.0	SDR-012-020-04.5/6	
12.5	20.5	5.0	16.8	2.0	4.5	6.0	SDR-012.5	
14.0	22.0	5.0	18.3	2.0	4.5	6.0	SDR-014	
16.0	24.0	5.0	20.3	2.0	4.5	6.0	SDR-016	SDR-016F
18.0	26.0	5.0	22.3	2.0	4.5	6.0	SDR-018	SDR-018F
19.0	27.0	5.0	23.3	2.0	4.5	6.0	SDR-019-027-04.5/6	
20.0	28.0	5.0	24.3	2.0	4.5	6.0	SDR-020	SDR-020F
22.0	30.0	5.0	26.3	2.0	4.5	6.0	SDR-022	SDR-022F
22.4	30.4	5.0	26.7	2.0	4.5	6.0	SDR-022.4	SDR-022.4F
25.0	33.0	5.0	29.3	2.0	4.5	6.0	SDR-025	SDR-025F
25.4	33.4	5.0	29.7	2.0	4.5	6.0	SDR-025.4-033.4-04.5/6	
26.0	34.0	5.0	30.3	2.0	4.5	6.0	SDR-026-034-04.5/6	
28.0	36.0	5.0	32.3	2.0	4.5	6.0	SDR-028	SDR-028F
30.0	38.0	6.0	34.0	2.0	5.0	6.5	SDR-030	SDR-030F
31.5	39.5	6.0	35.5	2.0	5.0	6.5	SDR-031.5	SDR-031.5F
32.0	40.0	6.0	36.0	2.0	5.0	6.5	SDR-032	
35.0	43.0	6.0	39.0	2.0	5.0	6.5	SDR-035	SDR-035F
35.5	43.5	6.0	39.5	2.0	5.0	6.5	SDR-035.5	SDR-035.5F
36.0	44.0	6.0	40.0	2.0	5.0	6.5	SDR-036	SDR-036F
38.0	46.0	6.0	42.0	2.0	5.0	6.5	SDR-038-046-05/6.5	
40.0	48.0	6.0	44.0	2.0	5.0	6.5	SDR-040	SDR-040F
45.0	53.0	6.0	49.0	2.0	5.0	6.5	SDR-045	SDR-045F
50.0	58.0	6.0	54.0	2.0	5.0	6.5	SDR-050	SDR-050F
53.0	61.0	6.0	57.0	2.0	5.0	6.5	SDR-053	SDR-053F
55.0	63.0	6.0	59.0	2.0	5.0	6.5	SDR-055	SDR-055F
56.0	64.0	6.0	60.0	2.0	5.0	6.5	SDR-056	SDR-056F
60.0	68.0	6.0	64.0	2.0	5.0	6.5	SDR-060	SDR-060F
63.0	71.0	6.0	67.0	2.0	5.0	6.5	SDR-063	SDR-063F
65.0	73.0	6.0	69.0	2.0	5.0	6.5	SDR-065	SDR-065F
67.0	75.0	6.0	71.0	2.0	5.0	6.5	SDR-067	SDR-067F
70.0	80.0	7.0	75.0	3.0	6.0	8.0	SDR-070	SDR-070F
71.0	81.0	7.0	76.0	3.0	6.0	8.0	SDR-071	SDR-071F
75.0	85.0	7.0	80.0	3.0	6.0	8.0	SDR-075	SDR-075F
80.0	90.0	7.0	85.0	3.0	6.0	8.0	SDR-080	SDR-080F
85.0	95.0	7.0	90.0	3.0	6.0	8.0	SDR-085	SDR-085F
90.0	100.0	7.0	95.0	3.0	6.0	8.0	SDR-090	SDR-090F
95.0	105.0	7.0	100.0	3.0	6.0	8.0	SDR-095	SDR-095F
100.0	110.0	7.0	105.0	3.0	6.0	8.0	SDR-100	SDR-100F
105.0	115.0	7.0	110.0	3.0	6.0	8.0	SDR-105-115-06/8	
106.0	116.0	7.0	111.0	3.0	6.0	8.0	SDR-106	SDR-106F

Wiper - SDR

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Step Width. a	Seal Step Height h	Seal Height H	Reference NBR (For order processing)	Reference FPM (For ordering)
110.0	120.0	7.0	115.0	3.0	6.0	8.0	SDR-110-120-06/8	
112.0	122.0	7.0	117.0	3.0	6.0	8.0	SDR-112	SDR-112F
115.0	125.0	7.0	120.0	3.0	6.0	8.0	SDR-115-125-06/8	
118.0	128.0	7.0	123.0	3.0	6.0	8.0	SDR-118	SDR-118F
120.0	133.0	8.0	127.0	3.0	7.0	9.5	SDR-120-133-07/9.5	
125.0	138.0	8.0	132.0	3.0	7.0	9.5	SDR-125	SDR-125F
127.0	140.0	8.0	134.0	3.0	7.0	9.5	SDR-127-140-07/9.5	
132.0	145.0	8.0	139.0	3.0	7.0	9.5	SDR-132	SDR-132F
140.0	153.0	8.0	147.0	3.0	7.0	9.5	SDR-140	SDR-140F
145.0	158.0	8.0	152.0	3.0	7.0	9.5	SDR-145	SDR-145F
150.0	163.0	8.0	157.0	3.0	7.0	9.5	SDR-150	SDR-150F
153.0	166.0	8.0	160.0	3.0	7.0	9.5	SDR-153-166-07/9.5	
155.0	168.0	8.0	162.0	3.0	7.0	9.5	SDR-155-168-07/9.5	
160.0	173.0	8.0	167.0	3.0	7.0	9.5	SDR-160	SDR-160F
160.0	174.0	8.0	167.0	3.0	7.0	9.5	SDR-160A	SDR-160AF
165.0	178.0	8.0	172.0	3.0	7.0	9.5	SDR-165	SDR-165F
170.0	183.0	8.0	177.0	3.0	7.0	9.5	SDR-170-183-07/9.5	
175.0	188.0	8.0	182.0	3.0	7.0	9.5	SDR-175	SDR-175F
180.0	193.0	8.0	187.0	3.0	7.0	9.5	SDR-180	SDR-180F
180.0	194.0	8.0	187.0	3.0	7.0	9.5	SDR-180A	SDR-180AF
190.0	203.0	8.0	197.0	3.0	7.0	9.5	SDR-190-203-07/9.5	
195.0	207.0	8.0	201.5	3.0	7.0	9.5	SDR-195-207-07/9.5	
200.0	213.0	8.0	207.0	3.0	7.0	9.5	SDR-200	SDR-200 F
205.0	218.0	8.0	212.0	3.0	7.0	9.5	SDR-205-218-07/9.5	
210.0	223.0	8.0	217.0	3.0	7.0	9.5	SDR-210-223-07/9.5	
215.0	228.0	8.0	222.0	3.0	7.0	9.5	SDR-215-228-07/9.5	
224.0	237.0	8.0	231.0	3.0	7.0	9.5	SDR-224	SDR-224F
225.0	238.0	8.0	232.0	3.0	7.0	9.5	SDR-225-238-07/9.5	
230.0	243.0	8.0	237.0	3.0	7.0	9.5	SDR-230-243-07/9.5	
250.0	266.0	11.0	258.0	4.0	10.0	13.0	SDR-250	SDR-250F
280.0	296.0	11.0	288.0	4.0	10.0	13.0	SDR-280	SDR-280F
285.0	301.0	11.0	293.0	4.0	10.0	13.0	SDR-285-301-10/13	
290.0	306.0	11.0	298.0	4.0	10.0	13.0	SDR-290-306-10/13	
295.0	311.0	11.0	303.0	4.0	10.0	13.0	SDR-295-311-10/13	
300.0	316.0	11.0	308.0	4.0	10.0	13.0	SDR-300-316-10/13	
315.0	331.0	11.0	323.0	4.0	10.0	13.0	SDR-315	
320.0	336.0	11.0	328.0	4.0	10.0	13.0	SDR-320-336-10/13	
335.0	351.0	11.0	343.0	4.0	10.0	13.0	SDR-335-351-10/13	
355.0	371.0	11.0	363.0	4.0	10.0	13.0	SDR-355	
360.0	380.0	11.0	368.0	4.0	10.0	13.0	SDR-360-380-10/13	

SPEC SEAL Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width.	Bore Dia.	Step Width.	Seal Step Height	Seal Height	Reference NBR (For order processing)	Reference FPM (For ordering)
d	D	L	D1	a	h	H		
400.0	416.0	11.0	408.0	4.0	10.0	13.0	SDR-400-416-10/13	
415.0	435.0	11.0	423.0	4.0	10.0	13.0	SDR-415-435-10/13	
420.0	436.0	11.0	428.0	4.0	10.0	13.0	SDR-420-436-10/13	
450.0	466.0	11.0	458.0	4.0	10.0	13.0	SDR-450	
480.0	496.0	11.0	488.0	4.0	10.0	13.0	SDR-480-496-10/13	
500.0	520.0	12.5	510.0	5.0	11.5	15.5	SDR-500-520-11.5/15.5	
505.0	521.0	11.0	513.0	4.0	10.0	13.0	SDR-505-521-10/13	
508.0	528.0	13.0	518.0	5.0	12.0	16.0	SDR-508-528-12/16	
600.0	616.0	11.0	608.0	4.0	10.0	13.0	SDR-600-616-10/13	

SPEC SEAL
Seals & O-rings Specialist

Wiper - LBH

Wipers

LBH, LBH-F (Metric Size)

LBH, LBH-F

Material	Temp. (°c)	Speed (m/s)
NBR	-25 +100	1
FPM	-10 +150	0.5

- Prevent entry of dust.
- Fitted into a intergrate groove.
- Wide range in temperature.
- Prevent oil scraping off.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Seal Step Height h	Seal Height H	Reference (For order processing)	Rod Dia. d	Groove Dia. D	Groove Width. L	Seal Step Height h	Seal Height H	Reference (For order processing)
12.0	20.0	5.0	4.5	6.0	LBH-12	**85.0**	95.0	7.0	6.0	8.0	***LBH-85***
12.5	20.5	5.0	4.5	6.0	LBH-12.5	**90.0**	100.0	7.0	6.0	8.0	***LBH-90***
14.0	22.0	5.0	4.5	6.0	LBH-14	**95.0**	105.0	7.0	6.0	8.0	LBH-95
16.0	24.0	5.0	4.5	6.0	***LBH-16***	**100.0**	110.0	7.0	6.0	8.0	***LBH-100***
18.0	26.0	5.0	4.5	6.0	***LBH-18***	**105.0**	115.0	7.0	6.0	8.0	LBH-105
20.0	28.0	5.0	4.5	6.0	***LBH-20***	**106.0**	116.0	7.0	6.0	8.0	LBH-106
22.0	30.0	5.0	4.5	6.0	***LBH-22***	**110.0**	120.0	7.0	6.0	8.0	LBH-110
22.4	30.4	5.0	4.5	6.0	***LBH-22.4***	**112.0**	122.0	7.0	6.0	8.0	***LBH-112***
25.0	33.0	5.0	4.5	6.0	***LBH-25***	**115.0**	125.0	7.0	6.0	8.0	LBH-115
28.0	36.0	5.0	4.5	6.0	***LBH-28***	**118.0**	128.0	7.0	6.0	8.0	LBH-118
30.0	38.0	6.0	5.0	6.5	***LBH-30***	**120.0**	130.0	7.0	6.0	8.0	LBH-120
31.5	39.5	6.0	5.0	6.5	***LBH-31.5***	**120.0**	133.0	8.0	7.0	9.5	LBH-120
32.0	40.0	6.0	5.0	6.5	LBH-32	**125.0**	138.0	8.0	7.0	9.5	***LBH-125***
35.0	43.0	6.0	5.0	6.5	***LBH-35***	**132.0**	145.0	8.0	7.0	9.5	LBH-132
35.5	43.5	6.0	5.0	6.5	***LBH-35.5***	**140.0**	153.0	8.0	7.0	9.5	***LBH-140***
36.0	44.0	6.0	5.0	6.5	LBH-36	**145.0**	158.0	8.0	7.0	9.5	LBH-145
40.0	48.0	6.0	5.0	6.5	***LBH-40***	**150.0**	163.0	8.0	7.0	9.5	LBH-150
45.0	53.0	6.0	5.0	6.5	***LBH-45***	**155.0**	168.0	8.0	7.0	9.5	LBH-155
50.0	58.0	6.0	5.0	6.5	***LBH-50***	**160.0**	173.0	8.0	7.0	9.5	***LBH-160***
53.0	61.0	6.0	5.0	6.5	LBH-53	**160.0**	174.0	8.0	7.0	9.5	LBH-160A
55.0	63.0	6.0	5.0	6.5	***LBH-55***	**165.0**	178.0	8.0	7.0	9.5	LBH-165
56.0	64.0	6.0	5.0	6.5	***LBH-56***	**170.0**	183.0	8.0	7.0	9.5	LBH-170A
60.0	68.0	6.0	5.0	6.5	***LBH-60***	**180.0**	193.0	8.0	7.0	9.5	LBH-180
63.0	71.0	6.0	5.0	6.5	LBH-63	**200.0**	213.0	8.0	7.0	9.5	LBH-200
65.0	73.0	6.0	5.0	6.5	LBH-65						
67.0	75.0	6.0	5.0	6.5	***LBH-67***						
70.0	80.0	7.0	6.0	8.0	***LBH-70***						
71.0	81.0	7.0	6.0	8.0	***LBH-71***						
75.0	85.0	7.0	6.0	8.0	LBH-75						
80.0	90.0	7.0	6.0	8.0	***LBH-80***						

LBH packing shown in italic-bold letter is also available in FPM material.

Wiper - SCK

Wipers

SCK (Metric Size)

SCK

Material	Temp. (°c)	Speed (m/s)
NBR	-45 +100	1

- Large cross section type.
- Prevent penetration of water from the outer circuit of the groove.
- Suitable for both indoor and outdoor.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	Step Width	Seal Step Height	Seal Height	Reference (For order processing)
d	D	L	D1	a	h	H	
18.0	30.0	6.0	24.0	3.0	5.8	7.7	SCK-018
20.0	32.0	6.0	26.0	3.0	5.8	7.7	SCK-020
25.0	37.0	6.0	31.0	3.0	5.8	7.7	SCK-025
28.0	40.0	6.0	34.0	3.0	5.8	7.7	SCK-028
30.0	42.0	6.0	36.0	3.0	5.8	7.7	SCK-030
35.0	47.0	7.0	41.0	3.0	6.8	8.7	SCK-035
40.0	52.0	7.0	46.0	3.0	6.8	8.7	SCK-040
45.0	57.0	7.0	51.0	3.0	6.8	8.7	SCK-045
50.0	62.0	7.0	56.0	3.0	6.8	8.7	SCK-050
55.0	69.0	8.0	62.0	3.0	7.7	10.0	SCK-055
60.0	74.0	8.0	67.0	3.0	7.7	10.0	SCK-060
65.0	79.0	8.0	72.0	3.0	7.7	10.0	SCK-065
70.0	84.0	8.0	77.0	3.0	7.7	10.0	SCK-070
75.0	89.0	8.0	82.0	3.0	7.7	10.0	SCK-075
80.0	94.0	8.0	87.0	3.0	7.7	10.0	SCK-080
85.0	99.0	8.0	92.0	3.0	7.7	10.0	SCK-085
90.0	104.0	8.0	97.0	3.0	7.7	10.0	SCK-090
95.0	109.0	8.0	102.0	3.0	7.7	10.0	SCK-095
100.0	114.0	8.0	107.0	3.0	7.7	10.0	SCK-100
105.0	121.0	9.0	113.0	4.0	8.7	12.0	SCK-105
110.0	126.0	9.0	118.0	4.0	8.7	12.0	SCK-110
115.0	131.0	9.0	123.0	4.0	8.7	12.0	SCK-115
120.0	136.0	9.0	128.0	4.0	8.7	12.0	SCK-120
125.0	141.0	9.0	133.0	4.0	8.7	12.0	SCK-125
130.0	146.0	9.0	138.0	4.0	8.7	12.0	SCK-130
132.0	148.0	9.0	140.0	4.0	8.7	12.0	SCK-132
140.0	160.0	10.0	150.0	5.0	9.7	14.0	SCK-140
160.0	180.0	10.0	170.0	5.0	9.7	14.0	SCK-160

SPEC SEAL Seals & O-rings Specialist

PTFE Wiper - 581

Wipers

SP-55-581 (Metric Size)

SP-55-581

Material	Temp. (°c)	Speed (m/s)
PTFE - O Ring	-40 +200	15

- Outstanding sliding properties.
- Stick-slip free.
- Space saving construction.
- Very good scraping effect against outside contaminant.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Installation Dimensions

Series No.	Rod Dia.	Groove Dia.	Groove Width	Radius	Bore Dia.	Step Width	O-Ring Cross-Section
	d	D	L	r1	D1	a	
0	6 - 11.9	d + 4.8	3.7	0.4	d + 2.7	2	1.78
1	12 - 64.9	d + 6.8	5.0	0.7	d + 3.5	2	2.62
2	65 - 250.9	d + 8.8	6.0	1.0	d + 4.0	3	3.53
3	251 - 420.9	d + 12.2	8.4	1.2	d + 4.5	3	5.33
4	421 - 650.9	d + 16.0	11.0	1.5	d + 5.2	4	7.00
5	651 - 999.9	d + 20.0	14.0	2.0	d + 6.6	5	8.40

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	O-RING No.	Reference (For order processing)	Reference	Reference
d	D	L	D1				
4.0	8.8	3.7	6.7	009	SP-55-581-0040	ES55123-0040	WEM300040
5.0	9.8	3.7	7.7	010	SP-55-581-0050	ES55123-0050	WEM300050
6.0	10.8	3.7	8.7	011	SP-55-581-0060	ES55123-0060	WEM300060
8.0	12.8	3.7	10.7	012	SP-55-581-0080	ES55123-0080	WEM300080
10.0	14.8	3.7	12.7	013	SP-55-581-0100	ES55123-0100	WEM300100
12.0	18.8	5.0	15.5	113	SP-55-581-0120	ES55123-0120	WEM300120
14.0	20.8	5.0	17.5	114	SP-55-581-0140	ES55123-0140	WEM300140
15.0	21.8	5.0	18.5	115	SP-55-581-0150	ES55123-0150	WEM300150
16.0	22.8	5.0	19.5	116	SP-55-581-0160	ES55123-0160	WEM300160
18.0	24.8	5.0	21.5	117	SP-55-581-0180	ES55123-0180	WEM300180
20.0	26.8	5.0	23.5	118	SP-55-581-0200	ES55123-0200	WEM300200
24.0	30.8	5.0	27.5	120	SP-55-581-0240	ES55123-0240	WEM300240
25.0	31.8	5.0	28.5	121	SP-55-581-0250	ES55123-0250	WEM300250
26.0	32.8	5.0	29.5	122	SP-55-581-0260	ES55123-0260	WEM300260
28.0	34.8	5.0	31.5	123	SP-55-581-0280	ES55123-0280	WEM300280
30.0	36.8	5.0	33.5	124	SP-55-581-0300	ES55123-0300	WEM300300
32.0	38.8	5.0	35.5	126	SP-55-581-0320	ES55123-0320	WEM300320
35.0	41.8	5.0	38.5	127	SP-55-581-0350	ES55123-0350	WEM300350
36.0	42.8	5.0	39.5	129	SP-55-581-0360	ES55123-0360	WEM300360
38.0	44.8	5.0	41.5	130	SP-55-581-0380	ES55123-0380	WEM300380
40.0	46.8	5.0	43.5	131	SP-55-581-0400	ES55123-0400	WEM300400
42.0	48.8	5.0	45.5	132	SP-55-581-0420	ES55123-0420	WEM300420
45.0	51.8	5.0	48.5	134	SP-55-581-0450	ES55123-0450	WEM300450
48.0	54.8	5.0	51.5	136	SP-55-581-0480	ES55123-0480	WEM300480
50.0	56.8	5.0	53.5	137	SP-55-581-0500	ES55123-0500	WEM300500
52.0	58.8	5.0	55.5	138	SP-55-581-0520	ES55123-0520	WEM300520
55.0	61.8	5.0	58.5	140	SP-55-581-0550	ES55123-0550	WEM300550
58.0	64.8	5.0	61.5	142	SP-55-581-0580	ES55123-0580	WEM300580
60.0	66.8	5.0	63.5	143	SP-55-581-0600	ES55123-0600	WEM300600
65.0	73.8	6.0	69.0	231	SP-55-581-0650	ES55123-0650	WEM300650

PTFE Wiper - 581

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
70.0	78.8	6.0	74.0	233	SP-55-581-0700	ES55123-0700	WEM300700
75.0	83.8	6.0	79.0	234	SP-55-581-0750	ES55123-0750	WEM300750
80.0	88.8	6.0	84.0	236	SP-55-581-0800	ES55123-0800	WEM300800
85.0	93.8	6.0	89.0	237	SP-55-581-0850	ES55123-0850	WEM300850
90.0	98.8	6.0	94.0	239	SP-55-581-0900	ES55123-0900	WEM300900
95.0	103.8	6.0	99.0	241	SP-55-581-0950	ES55123-0950	WEM300950
100.0	108.8	6.0	104.0	242	SP-55-581-1000	ES55123-1000	WEM301000
110.0	118.8	6.0	114.0	245	SP-55-581-1100	ES55123-1100	WEM301100
120.0	128.8	6.0	124.0	249	SP-55-581-1200	ES55123-1200	WEM301200
125.0	133.8	6.0	129.0	250	SP-55-581-1250	ES55123-1250	WEM301250
130.0	138.8	6.0	134.0	252	SP-55-581-1300	ES55123-1300	WEM301300
140.0	148.8	6.0	144.0	255	SP-55-581-1400	ES55123-1400	WEM301400
150.0	158.8	6.0	154.0	258	SP-55-581-1500	ES55123-1500	WEM301500
155.0	163.8	6.0	159.0	259	SP-55-581-1550	ES55123-1550	WEM301550
160.0	168.8	6.0	164.0	260	SP-55-581-1600	ES55123-1600	WEM301600
170.0	178.8	6.0	174.0	261	SP-55-581-1700	ES55123-1700	WEM301700
175.0	183.8	6.0	179.0	262	SP-55-581-1750	ES55123-1750	WEM301750
180.0	188.8	6.0	184.0	263	SP-55-581-1800	ES55123-1800	WEM301800
185.0	193.8	6.0	189.0	263	SP-55-581-1850	ES55123-1850	WEM301850
190.0	198.8	6.0	194.0	264	SP-55-581-1900	ES55123-1900	WEM301900
195.0	203.8	6.0	199.0	265	SP-55-581-1950	ES55123-1950	WEM301950
200.0	208.8	6.0	204.0	266	SP-55-581-2000	ES55123-2000	WEM302000
210.0	218.8	6.0	214.0	267	SP-55-581-2100	ES55123-2100	WEM302100
220.0	228.8	6.0	224.0	269	SP-55-581-2200	ES55123-2200	WEM302200
225.0	233.8	6.0	229.0	270	SP-55-581-2250	ES55123-2250	WEM302250
230.0	238.8	6.0	234.0	271	SP-55-581-2300	ES55123-2300	WEM302300
240.0	248.8	6.0	244.0	272	SP-55-581-2400	ES55123-2400	WEM302400
250.0	258.8	6.0	254.0	274	SP-55-581-2500	ES55123-2500	WEM302500
260.0	272.2	8.4	264.5	378	SP-55-581-2600	ES55123-2600	WEM302600
270.0	282.2	8.4	274.5	379	SP-55-581-2700	ES55123-2700	WEM302700
280.0	292.2	8.4	284.5	379	SP-55-581-2800	ES55123-2800	WEM302800
290.0	302.2	8.4	294.5	380	SP-55-581-2900	ES55123-2900	WEM302900
300.0	312.2	8.4	304.5	381	SP-55-581-3000	ES55123-3000	WEM303000
310.0	322.2	8.4	314.5	381	SP-55-581-3100	ES55123-3100	WEM303100
320.0	332.2	8.4	324.5	382	SP-55-581-3200	ES55123-3200	WEM303200
330.0	342.2	8.4	334.5	382	SP-55-581-3300	ES55123-3300	WEM303300
340.0	352.2	8.4	344.5	382	SP-55-581-3400	ES55123-3400	WEM303400
350.0	362.2	8.4	354.5	383	SP-55-581-3500	ES55123-3500	WEM303500
360.0	372.2	8.4	364.5	383	SP-55-581-3600	ES55123-3600	WEM303600
370.0	382.2	8.4	374.5	383	SP-55-581-3700	ES55123-3700	WEM303700

SPEC SEAL Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
380.0	392.2	8.4	384.5	384	SP-55-581-3800	ES55123-3800	WEM303800
390.0	402.2	8.4	394.5	384	SP-55-581-3900	ES55123-3900	WEM303900
400.0	412.2	8.4	404.5	385	SP-55-581-4000	ES55123-4000	WEM304000
410.0	422.2	8.4	414.5	385	SP-55-581-4100	ES55123-4100	WEM304100
420.0	432.2	8.4	424.5	386	SP-55-581-4200	ES55123-4200	WEM304200
430.0	446.0	11.0	435.2	463	SP-55-581-4300	ES55123-4300	WEM304300
440.0	456.0	11.0	445.2	464	SP-55-581-4400	ES55123-4400	WEM304400
450.0	466.0	11.0	455.2	465	SP-55-581-4500	ES55123-4500	WEM304500
460.0	476.0	11.0	465.2	466	SP-55-581-4600	ES55123-4600	WEM304600
470.0	486.0	11.0	475.2	466	SP-55-581-4700	ES55123-4700	WEM304700
480.0	496.0	11.0	485.2	467	SP-55-581-4800	ES55123-4800	WEM304800
490.0	506.0	11.0	495.2	468	SP-55-581-4900	ES55123-4900	WEM304900
500.0	516.0	11.0	505.2	469	SP-55-581-5000	ES55123-5000	WEM305000

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. SP-55 - 58 1 - 0040

Seal ring material code

Seal profile

O ring material code

Rod diameter x 10

PTFE Wiper - 591

Wipers

SP-55-591 (Metric Size)

SP-55-591

Material	Temp. (°c)	Speed (m/s)
PTFE - O Ring	-40 +200	15

- Outstanding sliding properties.
- Stick-slip free.
- Space saving construction.
- Very good scraping effect against outside contaminant.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Installation Dimensions

Series No.	Rod Dia. d		Groove Dia.	Groove Width	Bore Dia.	Step Width	O-Ring Cross-Section
	Recommended Range	Extended Range	D	L	D1	a	
0	6 - 11.9	6 - 130.0	d + 4.8	3.7	d + 1.5	2.0	1.78
1	12 - 64.9	10 - 245.0	d + 6.8	5.0	d + 1.5	2.0	2.62
2	65 - 250.9	25 - 400.0	d + 8.8	6.0	d + 1.5	3.0	3.53
3	251 - 420.9	40 - 655.0	d + 12.2	8.4	d + 2.0	4.0	5.33
4	421 - 650.9	110 - 655.0	d + 16.0	11.0	d + 2.0	4.0	7.00
5	651 - 999.9	140 - 999.9	d + 20.0	14.0	d + 2.5	5.0	8.40
5X	> 1000		d + 20.0	14.0	d + 2.5	5.0	8.40

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
6.0	10.8	3.7	7.5	011	SP-55-591-0060	ES56200-0060	WE3000060
8.0	12.8	3.7	9.5	012	SP-55-591-0080	ES56200-0080	WE3000080
10.0	14.8	3.7	11.5	013	SP-55-591-0100	ES56200-0100	WE3000100
12.0	18.8	5.0	13.5	113	SP-55-591-0120	ES56201-0120	WE3100120
14.0	20.8	5.0	15.5	114	SP-55-591-0140	ES56201-0140	WE3100140
15.0	21.8	5.0	16.5	115	SP-55-591-0150	ES56201-0150	WE3100150
16.0	20.8	3.7	17.5	017	SP-55-591-0160-0	ES56200-0160	WE3000160
16.0	22.8	5.0	17.5	116	SP-55-591-0160	ES56201-0160	WE3100160
18.0	22.8	3.7	19.5	018	SP-55-591-0180-0	ES56200-0180	WE3000180
18.0	24.8	5.0	19.5	117	SP-55-591-0180	ES56201-0180	WE3100180
20.0	26.8	5.0	21.5	118	SP-55-591-0200	ES56201-0200	WE3100200
22.0	28.8	5.0	23.5	119	SP-55-591-0220	ES56201-0220	WE3100220
25.0	31.8	5.0	26.5	121	SP-55-591-0250	ES56201-0250	WE3100250
30.0	34.8	3.7	31.5	026	SP-55-591-0300-0	ES56200-0300	WE3000300
30.0	36.8	5.0	31.5	124	SP-55-591-0300	ES56201-0300	WE3100300
32.0	38.8	5.0	33.5	126	SP-55-591-0320	ES56201-0320	WE3100320
35.0	41.8	5.0	36.5	127	SP-55-591-0350	ES56201-0350	WE3100350
36.0	42.8	5.0	37.5	128	SP-55-591-0360	ES56201-0360	WE3100360
37.0	43.8	5.0	38.5	129	SP-55-591-0370	ES56201-0370	WE3100370
40.0	46.8	5.0	41.5	129	SP-55-591-0400	ES56201-0400	WE3100400
42.0	48.8	5.0	43.5	131	SP-55-591-0420	ES56201-0420	WE3100420
45.0	51.8	5.0	46.5	134	SP-55-591-0450	ES56201-0450	WE3100450
49.0	55.8	5.0	50.5	136	SP-55-591-0490	ES56201-0490	WE3100490
50.0	56.8	5.0	51.5	137	SP-55-591-0500	ES56201-0500	WE3100500
50.8	57.6	5.0	52.3	137	SP-55-591-0508	ES56201-0508	WE3100508

SPEC SEAL Seals & O-rings Specialist

PTFE Wiper - 591

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
54.0	60.8	5.0	55.5	139	SP-55-591-0540	ES56201-0540	WE3100540
55.0	61.8	5.0	56.5	140	SP-55-591-0550	ES56201-0550	WE3100550
56.0	62.8	5.0	57.5	141	SP-55-591-0560	ES56201-0560	WE3100560
60.0	66.8	5.0	61.5	143	SP-55-591-0600	ES56201-0600	WE3100600
63.0	69.8	5.0	64.5	145	SP-55-591-0630	ES56201-0630	WE3100630
65.0	73.8	6.0	66.5	232	SP-55-591-0650	ES56202-0650	WE3200650
70.0	78.8	6.0	71.5	233	SP-55-591-0700	ES56202-0700	WE3200700
75.0	83.8	6.0	76.5	235	SP-55-591-0750	ES56202-0750	WE3200750
80.0	88.8	6.0	81.5	236	SP-55-591-0800	ES56202-0800	WE3200800
85.0	93.8	6.0	86.5	238	SP-55-591-0850	ES56202-0850	WE3200850
90.0	98.8	6.0	91.5	240	SP-55-591-0900	ES56202-0900	WE3200900
95.0	103.8	6.0	96.5	241	SP-55-591-0950	ES56202-0950	WE3200950
100.0	108.8	6.0	101.5	243	SP-55-591-1000	ES56202-1000	WE3201000
105.0	113.8	6.0	106.5	244	SP-55-591-1050	ES56202-1050	WE3201050
110.0	118.8	6.0	111.5	246	SP-55-591-1100	ES56202-1100	WE3201100
115.0	123.8	6.0	116.5	247	SP-55-591-1150	ES56202-1150	WE3201150
120.0	128.8	6.0	121.5	249	SP-55-591-1200	ES56202-1200	WE3201200
125.0	133.8	6.0	126.5	251	SP-55-591-1250	ES56202-1250	WE3201250
130.0	138.8	6.0	131.5	252	SP-55-591-1300	ES56202-1300	WE3201300
135.0	143.8	6.0	136.5	254	SP-55-591-1350	ES56202-1350	WE3201350
137.0	145.8	6.0	138.5	254	SP-55-591-1370	ES56202-1370	WE3201370
140.0	148.8	6.0	141.5	255	SP-55-591-1400	ES56202-1400	WE3201400
145.0	153.8	6.0	146.5	257	SP-55-591-1450	ES56202-1450	WE3201450
150.0	158.8	6.0	151.5	258	SP-55-591-1500	ES56202-1500	WE3201500
160.0	168.8	6.0	161.5	260	SP-55-591-1600	ES56202-1600	WE3201600
170.0	178.8	6.0	171.5	262	SP-55-591-1700	ES56202-1700	WE3201700
180.0	188.8	6.0	181.5	263	SP-55-591-1800	ES56202-1800	WE3201800
190.0	198.8	6.0	191.5	265	SP-55-591-1900	ES56202-1900	WE3201900
200.0	208.8	6.0	201.5	266	SP-55-591-2000	ES56202-2000	WE3202000
210.0	218.8	6.0	211.5	268	SP-55-591-2100	ES56202-2100	WE3202100
220.0	228.8	6.0	221.5	270	SP-55-591-2200	ES56202-2200	WE3202200
230.0	238.8	6.0	231.5	271	SP-55-591-2300	ES56202-2300	WE3202300
240.0	248.8	6.0	241.5	273	SP-55-591-2400	ES56202-2400	WE3202400
250.0	258.8	6.0	251.5	274	SP-55-591-2500	ES56202-2500	WE3202500
260.0	272.2	8.4	262.0	378	SP-55-591-2600	ES56203-2600	WE3302600
280.0	292.2	8.4	282.0	380	SP-55-591-2800	ES56203-2800	WE3302800
300.0	312.2	8.4	302.0	381	SP-55-591-3000	ES56203-3000	WE3303000
320.0	332.2	8.4	322.0	382	SP-55-591-3200	ES56203-3200	WE3303200
350.0	362.2	8.4	352.0	383	SP-55-591-3500	ES56203-3500	WE3303500
360.0	372.2	8.4	362.0	383	SP-55-591-3600	ES56203-3600	WE3303600

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
370.0	382.2	8.4	372.0	384	SP-55-591-3700	ES56203-3700	WE3303700
400.0	412.2	8.4	402.0	385	SP-55-591-4000	ES56203-4000	WE3304000
440.0	456.0	11.0	442.0	465	SP-55-591-4400	ES56204-4400	WE3404400
480.0	496.0	11.0	482.0	468	SP-55-591-4800	ES56204-4800	WE3404800
600.0	616.0	11.0	602.0	473	SP-55-591-4900	ES56204-4900	WE3404900
630.0	646.0	11.0	632.0	474	SP-55-591-6300	ES56204-6300	WE3406300
680.0	700.0	14.0	682.5	680.0 * 8.4	SP-55-591-6800	ES56204-6800	WE3506800
700.0	720.0	14.0	702.5	715.0 * 8.4	SP-55-591-7000	ES56204-7000	WE3507000
770.0	790.0	14.0	772.5	774.1 * 8.4	SP-55-591-7700	ES56204-7700	WE3507700
828.0	848.0	14.0	830.5	845.0 * 8.4	SP-55-591-8280	ES56204-8280	WE3508280
880.0	900.0	14.0	882.5	888.0 * 8.4	SP-55-591-8800	ES56204-8800	WE3508800
900.0	920.0	14.0	902.5	888.0 * 8.4	SP-55-591-9000	ES56204-9000	WE3509000
1030.0	1050.0	14.0	1032.5	1035.0 * 8.4	SP-55-591-10300	ES56204-10300	WE35X1030
1180.0	1200.0	14.0	1182.5	1185.0 * 8.4	SP-55-591-11800	ES56204-11800	WE35X1180

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

SEAL
Seals & O-rings Specialist

Order No. SP-55 - 59 1 - 0060

Seal ring material code

Seal profile

O ring material code

Rod diameter x 10

PTFE Wiper - 791

Wipers

SP-55-791 (Metric Size)

SP-55-791

Material	Temp. (°c)	Speed (m/s)
PTFE - O Ring	-40 +200	15

- Outstanding sliding properties.
- Stick-slip free.
- Space saving construction.
- Very good scraping effect against outside contaminant.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Installation Dimensions

Series No.	Rod Dia. d		Groove Dia.	Groove Width	Bore Dia.	Step Width	O-Ring Cross-Section
	Recommended Range	Extended Range	D	L	D1	a	
0	19 - 39.9	19 - 100.0	d + 7.6	4.2	d + 1.5	3.0	2.62
1	40 - 69.9	30 - 200.0	d + 8.8	6.3	d + 1.5	3.0	2.62
2	70 - 139.9	70 - 350.0	d + 12.2	8.1	d + 2.0	4.0	3.53
3	140 - 399.9	100 - 650.0	d + 16.0	9.5	d + 2.5	5.0	5.33
4	400 - 649.9	200 - 650.0	d + 24.0	14.0	d + 2.5	8.0	7.00
5	650 - 999.9	400 - 999.9	d + 27.3	16.0	d + 2.5	10.0	8.40
5X	> 1000		d + 27.3	16.0	d + 2.5	10.0	8.40

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	O-RING No.	Reference (For order processing)	Reference	Reference
d	D	L	D1				
20.0	27.6	4.2	21.5	118	SP-55-791-0200	ES56150-0200	WE5000200
22.0	29.6	4.2	23.5	120	SP-55-791-0220	ES56150-0220	WE5000220
24.0	31.6	4.2	25.5	121	SP-55-791-0240	ES56150-0240	WE5000240
25.0	32.6	4.2	26.5	122	SP-55-791-0250	ES56150-0250	WE5000250
28.0	35.6	4.2	29.5	123	SP-55-791-0280	ES56150-0280	WE5000280
30.0	37.6	4.2	31.5	125	SP-55-791-0300	ES56150-0300	WE5000300
32.0	39.6	4.2	33.5	126	SP-55-791-0320	ES56150-0320	WE5000320
35.0	42.6	4.2	36.5	128	SP-55-791-0350	ES56150-0350	WE5000350
36.0	43.6	4.2	37.5	129	SP-55-791-0360	ES56150-0360	WE5000360
38.0	45.6	4.2	39.5	130	SP-55-791-0380	ES56150-0380	WE5000380
40.0	48.8	6.3	41.5	132	SP-55-791-0400	ES56151-0400	WE5100400
42.0	50.8	6.3	43.5	133	SP-55-791-0420	ES56151-0420	WE5100420
45.0	53.8	6.3	46.5	135	SP-55-791-0450	ES56151-0450	WE5100450
48.0	56.8	6.3	49.5	137	SP-55-791-0480	ES56151-0480	WE5100480
50.0	58.8	6.3	51.5	138	SP-55-791-0500	ES56151-0500	WE5100500
52.0	60.8	6.3	53.5	139	SP-55-791-0520	ES56151-0520	WE5100520
55.0	63.8	6.3	56.5	141	SP-55-791-0550	ES56151-0550	WE5100550
56.0	64.8	6.3	57.5	142	SP-55-791-0560	ES56151-0560	WE5100560
58.0	66.8	6.3	59.5	143	SP-55-791-0580	ES56151-0580	WE5100580
60.0	68.8	6.3	61.5	144	SP-55-791-0600	ES56151-0600	WE5100600
63.0	71.8	6.3	64.5	146	SP-55-791-0630	ES56151-0630	WE5100630
65.0	73.8	6.3	66.5	147	SP-55-791-0650	ES56151-0650	WE5100650
70.0	82.2	8.1	72.0	234	SP-55-791-0700	ES56152-0700	WE5200700
75.0	87.2	8.1	77.0	235	SP-55-791-0750	ES56152-0750	WE5200750
80.0	92.2	8.1	82.0	237	SP-55-791-0800	ES56152-0800	WE5200800

PTFE Wiper - 791

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
85.0	97.2	8.1	87.0	239	SP-55-791-0850	ES56152-0850	WE5200850
90.0	102.2	8.1	92.0	240	SP-55-791-0900	ES56152-0900	WE5200900
95.0	107.2	8.1	97.0	242	SP-55-791-0950	ES56152-0950	WE5200950
100.0	112.2	8.1	102.0	243	SP-55-791-1000	ES56152-1000	WE5201000
105.0	117.2	8.1	107.0	245	SP-55-791-1050	ES56152-1050	WE5201050
110.0	122.2	8.1	112.0	246	SP-55-791-1100	ES56152-1100	WE5201100
115.0	127.2	8.1	117.0	248	SP-55-791-1150	ES56152-1150	WE5201150
120.0	132.2	8.1	122.0	249	SP-55-791-1200	ES56152-1200	WE5201200
125.0	137.2	8.1	127.0	251	SP-55-791-1250	ES56152-1250	WE5201250
130.0	142.2	8.1	132.0	253	SP-55-791-1300	ES56152-1300	WE5201300
135.0	147.2	8.1	137.0	254	SP-55-791-1350	ES56152-1350	WE5201350
140.0	156.0	9.5	142.5	359	SP-55-791-1400	ES56153-1400	WE5301400
145.0	161.0	9.5	147.5	360	SP-55-791-1450	ES56153-1450	WE5301450
150.0	166.0	9.5	152.5	361	SP-55-791-1500	ES56153-1500	WE5301500
155.0	171.0	9.5	157.5	362	SP-55-791-1550	ES56153-1550	WE5301550
160.0	176.0	9.5	162.5	363	SP-55-791-1600	ES56153-1600	WE5301600
170.0	186.0	9.5	172.5	365	SP-55-791-1700	ES56153-1700	WE5301700
180.0	196.0	9.5	182.5	366	SP-55-791-1800	ES56153-1800	WE5301800
190.0	206.0	9.5	192.5	368	SP-55-791-1900	ES56153-1900	WE5301900
200.0	216.0	9.5	202.5	369	SP-55-791-2000	ES56153-2000	WE5302000
210.0	226.0	9.5	212.5	371	SP-55-791-2100	ES56153-2100	WE5302100
220.0	236.0	9.5	222.5	373	SP-55-791-2200	ES56153-2200	WE5302200
225.0	241.0	9.5	227.5	373	SP-55-791-2250	ES56153-2250	WE5302250
230.0	246.0	9.5	232.5	374	SP-55-791-2300	ES56153-2300	WE5302300
240.0	256.0	9.5	242.5	376	SP-55-791-2400	ES56153-2400	WE5302400
250.0	266.0	9.5	252.5	377	SP-55-791-2500	ES56153-2500	WE5302500
260.0	276.0	9.5	262.5	378	SP-55-791-2600	ES56153-2600	WE5302600
270.0	286.0	9.5	272.5	379	SP-55-791-2700	ES56153-2700	WE5302700
280.0	296.0	9.5	282.5	379	SP-55-791-2800	ES56153-2800	WE5302800
290.0	306.0	9.5	292.5	380	SP-55-791-2900	ES56153-2900	WE5302900
300.0	316.0	9.5	302.5	381	SP-55-791-3000	ES56153-3000	WE5303000
310.0	326.0	9.5	312.5	381	SP-55-791-3100	ES56153-3100	WE5303100
320.0	336.0	9.5	322.5	382	SP-55-791-3200	ES56153-3200	WE5303200
330.0	346.0	9.5	332.5	382	SP-55-791-3300	ES56153-3300	WE5303300
340.0	356.0	9.5	342.5	382	SP-55-791-3400	ES56153-3400	WE5303400
350.0	366.0	9.5	352.5	383	SP-55-791-3500	ES56153-3500	WE5303500
360.0	376.0	9.5	362.5	383	SP-55-791-3600	ES56153-3600	WE5303600
370.0	386.0	9.5	372.5	384	SP-55-791-3700	ES56153-3700	WE5303700
380.0	396.0	9.5	382.5	384	SP-55-791-3800	ES56153-3800	WE5303800
390.0	406.0	9.5	392.5	384	SP-55-791-3900	ES56153-3900	WE5303900

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Bore Dia. D1	O-RING No.	Reference (For order processing)	Reference	Reference
400.0	424.0	14.0	402.5	461	SP-55-791-4000	ES56154-4000	WE5404000
410.0	434.0	14.0	412.5	462	SP-55-791-4100	ES56154-4100	WE5404100
420.0	444.0	14.0	422.5	462	SP-55-791-4200	ES56154-4200	WE5404200
430.0	454.0	14.0	432.5	463	SP-55-791-4300	ES56154-4300	WE5404300
440.0	464.0	14.0	442.5	464	SP-55-791-4400	ES56154-4400	WE5404400
450.0	474.0	14.0	452.5	465	SP-55-791-4500	ES56154-4500	WE5404500
460.0	484.0	14.0	462.5	465	SP-55-791-4600	ES56154-4600	WE5404600
470.0	494.0	14.0	472.5	466	SP-55-791-4700	ES56154-4700	WE5404700
480.0	504.0	14.0	482.5	467	SP-55-791-4800	ES56154-4800	WE5404800
490.0	514.0	14.0	492.5	468	SP-55-791-4900	ES56154-4900	WE5404900
500.0	524.0	14.0	502.5	469	SP-55-791-5000	ES56154-5000	WE5405000

Select the material of seal ring and o-ring from Compounds for Fluid Technology (page 8)

Order No. SP-55 - 79 1 - 0040

Seal ring material code

Seal profile

O ring material code

Rod diameter x 10

Wiper - CSWM, CSW

Wipers

CSWM	(Metric Size)
CSW	(Imperial Size)

CSWM, CSW

Material	Temp. (°c)	Speed (m/s)
Hytrel	-30 +120	1

- Excellent scraping type.
- High wear resistance.
- Space saving construction.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Part Width	Bore Dia.	Reference (For order processing)
d	D	L	L1	D1	
16.0	26.0	4.5	6.5	24.5	CSWM-016 016-026-4.5
18.0	28.0	4.5	6.5	26.5	CSWM-018 018-028-4.5
20.0	33.0	6.0	8.5	31.5	CSWM-020 020-033-6
22.0	35.0	6.0	8.5	33.5	CSWM-022 022-035-6
25.0	38.0	6.0	8.5	36.5	CSWM-025 025-038-6
28.0	41.0	6.0	8.5	39.5	CSWM-028 028-041-6
30.0	43.0	6.0	8.5	41.5	CSWM-030 030-043-6
32.0	45.0	6.0	8.5	43.5	CSWM-032 032-045-6
36.0	49.0	6.0	8.5	47.5	CSWM-036 036-049-6
40.0	53.0	6.0	8.5	51.5	CSWM-040 040-053-6
45.0	58.0	6.0	8.5	56.5	CSWM-045 045-058-6
50.0	63.0	6.0	8.5	61.5	CSWM-050 050-063-6
55.0	68.0	6.0	8.5	66.5	CSWM-055 055-068-6
56.0	69.0	6.0	8.5	67.5	CSWM-056 056-069-6
60.0	73.0	6.0	8.5	71.5	CSWM-060 060-073-6
63.0	76.0	6.0	8.5	74.5	CSWM-063 063-076-6
70.0	83.0	6.0	8.5	81.5	CSWM-070 070-083-6
80.0	93.0	6.0	8.5	91.5	CSWM-080 080-093-6
90.0	103.0	6.0	8.5	101.5	CSWM-090 090-103-6
100.0	113.0	6.0	8.5	111.5	CSWM-100 100-113-6

(Imperial Size)

Rod Dia.	Groove Dia.	Groove Width	Part Width	Bore Dia.	Reference (For order processing)
d	D	L	L1	D1	
12.70	22.22	4.36	6.35	20.63	CSW-050 12.7-22.22-4.36
15.87	25.40	4.36	6.35	23.82	CSW-062 15.87-25.4-4.36
19.05	31.75	5.94	8.76	30.15	CSW-075 19.05-31.75-5.94
22.22	34.92	5.94	8.76	33.33	CSW-087 22.22-34.92-5.94
25.40	38.10	5.94	8.76	36.50	CSW-100 25.4-38.1-5.94
28.57	41.27	5.94	8.76	39.67	CSW-112 28.57-41.27-5.94
31.75	44.45	5.94	8.76	42.85	CSW-125 31.75-44.45-5.94
34.92	47.62	5.94	8.76	46.02	CSW-137 34.92-47.62-5.94
38.10	50.80	5.94	8.76	49.20	CSW-150 38.1-50.8-5.94
41.27	53.97	5.94	8.76	52.37	CSW-162 41.27-53.97-5.94
44.45	57.15	5.94	8.76	55.55	CSW-175 44.45-57.15-5.94
50.80	63.50	5.94	8.76	61.90	CSW-200 50.8-63.5-5.94
57.15	69.85	5.94	8.76	68.25	CSW-225 57.15-69.85-5.94
63.50	76.20	5.94	8.76	74.60	CSW-250 63.5-76.2-5.94
69.85	82.55	5.94	8.76	80.95	CSW-275 69.85-82.55-5.94
76.20	88.90	5.94	8.76	87.30	CSW-300 76.2-88.9-5.94
82.55	95.25	5.94	8.76	93.65	CSW-325 82.55-95.25-5.94
88.90	101.60	5.94	8.76	100.00	CSW-350 88.9-101.6-5.94
101.60	114.30	5.94	8.76	111.12	CSW-400 101.6-114.3-5.94

Wiper - H33

Wipers

H33 (Metric Size)

H33

Material	Temp. (°c)	Speed (m/s)
NBR	-30 +100	4

- General purpose seal.
- Precision trimmed sealing lip.
- Wide size range.
- Effective seal on housing as well as rod.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Part Width	Bore Dia.	Reference (For order processing)	Reference
d	D	L	L1	D1		
12.0	20.0	4.0	6.0	16.0	H33-012-020-4/6	2232500
14.0	22.0	4.0	6.0	18.0	H33-014-022-4/6	2232600
16.0	24.0	4.0	6.0	20.0	H33-016-024-4/6	2232800
18.0	26.0	4.0	6.0	22.0	H33-018-026-4/6	2232900
20.0	28.0	4.0	6.0	24.0	H33-020-028-4/6	2233000
22.0	30.0	4.0	6.0	26.0	H33-022-030-4/6	2233100
25.0	33.0	4.0	6.0	29.0	H33-025-033-4/6	2233200
25.0	33.0	5.0	6.4	30.5	H33-025-033-5/6.4	6586200
28.0	36.0	4.0	6.0	32.0	H33-028-036-4/6	2233300
28.0	36.0	5.0	6.4	33.5	H33-028-036-5/6.4	6586300
30.0	42.0	6.0	9.0	36.0	H33-030-042-6/9	2233400
32.0	40.0	5.0	6.4	37.5	H33-032-040-5/6.4	6586400
32.0	44.0	6.0	9.0	38.0	H33-032-044-6/9	2233500
35.0	47.0	6.0	9.0	41.0	H33-035-047-6/9	2233600
36.0	44.0	5.0	6.4	41.5	H33-036-044-5/6.4	6586500
36.0	48.0	6.0	9.0	42.0	H33-036-048-6/9	2233700
40.0	48.0	5.0	6.4	45.5	H33-040-048-5/6.4	6586600
40.0	52.0	6.0	9.0	46.0	H33-040-052-6/9	2233800
42.0	54.0	6.0	9.0	48.0	H33-042-054-6/9	2233900
45.0	53.0	5.0	6.4	50.5	H33-045-053-5/6.4	6586700
45.0	57.0	6.0	9.0	51.0	H33-045-057-6/9	2234000
50.0	58.0	5.0	6.4	55.5	H33-050-058-5/6.4	6586800
50.0	62.0	6.0	9.0	55.0	H33-050-062-6/9	2234200
55.0	67.0	6.0	9.0	61.0	H33-055-067-6/9	2234300
56.0	66.0	6.3	8.1	63.0	H33-056-066-6.3/8.1	6586900
56.0	68.0	6.0	9.0	62.0	H33-056-068-6/9	2234400
60.0	72.0	6.0	9.0	66.0	H33-060-072-6/9	2234500
63.0	73.0	6.3	8.1	70.0	H33-063-073-6.3/8.1	6587000
63.0	75.0	6.0	9.0	69.0	H33-063-075-6/9	2234600
65.0	77.0	6.0	9.0	71.0	H33-065-077-6/9	2234700
70.0	80.0	6.3	8.1	77.0	H33-070-080-6.3/8.1	6587100
70.0	82.0	6.0	9.0	76.0	H33-070-082-6/9	2234800
80.0	90.0	6.3	8.1	87.0	H33-080-090-6.3/8.1	6587200
90.0	100.0	6.3	8.1	97.0	H33-090-100-6.3/8.1	6587300
90.0	106.0	8.0	12.0	98.0	H33-090-106-8/12	2235200
100.0	115.0	9.5	12.5	110.0	H33-100-115-9.5/12.5	6587400
100.0	116.0	8.0	12.0	108.0	H33-100-116-8/12	2235300
105.0	121.0	8.0	12.0	113.0	H33-105-121-8/12	2235400
110.0	125.0	9.5	12.5	120.0	H33-110-125-9.5/12.5	6587500
125.0	140.0	9.5	12.5	135.0	H33-125-140-9.5/12.5	6587600

Wiper - H33

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Part Width L1	Bore Dia. D1	Reference (For order processing)	Reference
140.0	155.0	9.5	12.5	150.0	H33-140-155-9.5/12.5	6587700
140.0	156.0	8.0	12.0	148.0	H33-140-156-8/12	1222800
150.0	166.0	8.0	12.0	158.0	H33-150-166-8/12	1222900
160.0	175.0	9.5	12.5	170.0	H33-160-175-9.5/12.5	6587800
160.0	176.0	8.0	12.0	168.0	H33-160-176-8/12	1223000
180.0	195.0	9.5	12.5	190.0	H33-180-195-9.5/12.5	6587900
180.0	200.0	10.0	15.0	190.0	H33-180-200-10/15	1226300
190.0	210.0	10.0	15.0	200.0	H33-190-210-10/15	1226400
200.0	215.0	9.5	12.5	210.0	H33-200-215-9.5/12.5	6588000
200.0	220.0	10.0	15.0	210.0	H33-200-220-10/15	1226500
220.0	240.0	12.5	16.6	233.5	H33-220-240-12.5/16.6	6588100
250.0	270.0	12.5	16.6	263.5	H33-250-270-12.5/16.6	6588200

SPEC SEAL
Seals & O-rings Specialist

SPEC SEAL

Seals & O-rings Specialist

Wiper - H33

Wipers

H33 (Inch Size)

H-33

Material	Temp. (°c)	Speed (m/s)
NBR	-30 +100	4

- General purpose seal.
- Precision trimmed sealing lip.
- Wide size range.
- Effective seal on housing as well as rod.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Part Width L1	Bore Dia. D1	Reference (For order processing)	Reference
.500	.900	.125	.250	.700	H33-0500	1464100
.625	1.025	.125	.250	.828	H33-0625	1470700
.750	1.150	.125	.250	.950	H33-0750	1347700
.875	1.275	.125	.250	1.075	H33-0875	1056700
1.000	1.400	.125	.250	1.200	H33-1000	1456300
1.125	1.625	.125	.375	1.425	H33-1125	1476700
1.250	1.750	.125	.375	1.550	H33-1250	1453100
1.375	1.875	.125	.375	1.675	H33-1375	1471800
1.500	2.000	.125	.375	1.800	H33-1500	0696900
1.625	2.125	.125	.375	1.925	H33-1625	0269600
1.750	2.250	.125	.375	2.050	H33-1750	0266400
1.875	2.375	.125	.375	2.175	H33-1875	0230700
2.000	2.500	.125	.375	2.300	H33-2000	0228100
2.250	2.750	.125	.375	2.550	H33-2250	0851100
2.500	3.000	.125	.375	2.800	H33-2500	1450000
2.750	3.250	.125	.375	3.050	H33-2750	2222400
3.000	3.500	.125	.375	3.300	H33-3000	0951300
3.250	4.000	.187	.500	3.650	H33-3250	1472500
3.375	4.125	.187	.500	3.775	H33-3375	1474200
3.500	4.250	.187	.500	3.900	H33-3500	1445000
4.000	4.750	.187	.500	4.400	H33-4000	1453300
4.500	5.250	.187	.500	4.900	H33-4500	1613600
5.000	5.750	.187	.500	5.400	H33-5000	0258600
5.500	6.250	.187	.500	5.900	H33-5500	0223500
6.000	6.750	.187	.500	6.400	H33-6000	0222500
6.500	7.500	.250	.625	7.000	H33-6500	1613100
7.000	8.000	.250	.625	7.500	H33-7000	1614600
8.000	9.000	.250	.625	8.500	H33-8000	0786500

SPEC SEAL Seals & O-rings Specialist

Wiper - D

Wipers

D (Inch Size)

D

Material	Temp. (°c)	Speed (m/s)
PU	-35 +95	0.5

- Simple groove designed.
- Good scraping effect.
- Easy installation.
- Fit "Universal" style housing.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Wiper Dimensions				Groove Dimensions				Reference (For order processing)
Rod Dia.	Outer Dia.	Seal Step Height	Seal Height	Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	H	d	D	L	D1	
1/4	1/2	1/8	.210	250	.497	.124	.410	WP-00250 D
5/16	9/16	1/8	.210	312	.560	.124	.475	WP-00312 D
3/8	5/8	1/8	.210	375	.622	.124	.535	WP-00375 D
7/16	11/16	1/8	.210	437	.685	.124	.600	WP-00437 D
1/2	3/4	1/8	.210	500	.747	.124	.660	WP-00500 D
9/16	13/16	1/8	.210	562	.810	.124	.725	WP-00562 D
5/8	7/8	1/8	.210	625	.872	.124	.785	WP-00625 D
11/16	15/16	1/8	.210	687	.935	.124	.850	WP-00687 D
3/4	1-1/8	3/16	.305	750	1.122	.187	.995	WP-00750 D
13/16	1-3/16	3/16	.305	812	1.185	.187	1.060	WP-00812 D
7/8	1-1/4	3/16	.305	875	1.247	.187	1.120	WP-00875 D
15/16	1-5/16	3/16	.305	937	1.310	.187	1.185	WP-00937 D
1	1-3/8	3/16	.305	1000	1.372	.187	1.245	WP-01000 D
1-1/16	1-7/16	3/16	.305	1062	1.435	.187	1.310	WP-01062 D
1-1/8	1-1/2	3/16	.305	1125	1.497	.187	1.370	WP-01125 D
1-3/16	1-9/16	3/16	.305	1187	1.560	.187	1.435	WP-01187 D
1-1/4	1-5/8	3/16	.305	1250	1.622	.187	1.495	WP-01250 D
1-5/16	1-11/16	3/16	.305	1312	1.685	.187	1.560	WP-01312 D
1-3/8	1-3/4	3/16	.305	1375	1.747	.187	1.620	WP-01375 D
1-7/16	1-13/16	3/16	.305	1437	1.810	.187	1.685	WP-01437 D
1-1/2	1-7/8	3/16	.305	1500	1.872	.187	1.745	WP-01500 D
1-9/16	1-15/16	3/16	.305	1562	1.935	.187	1.810	WP-01562 D
1-5/8	2	3/16	.305	1625	1.997	.187	1.870	WP-01625 D
1-11/16	2-1/16	3/16	.305	1687	2.060	.187	1.935	WP-01687 D
1-3/4	2-1/8	3/16	.305	1750	2.122	.187	1.995	WP-01750 D
1-13/16	2-3/16	3/16	.305	1812	2.185	.187	2.060	WP-01812 D
1-7/8	2-1/4	3/16	.305	1875	2.247	.187	2.120	WP-01875 D
1-15/16	2-5/16	3/16	.305	1937	2.310	.187	2.185	WP-01937 D
2	2-1/2	1/4	.395	2000	2.497	.249	2.327	WP-02000 D
2-1/16	2-9/16	1/4	.395	2062	2.560	.249	2.390	WP-02062 D
2-1/8	2-5/8	1/4	.395	2125	2.622	.249	2.452	WP-02125 D
2-3/16	2-11/16	1/4	.395	2187	2.685	.249	2.515	WP-02187 D
2-1/4	2-3/4	1/4	.395	2250	2.747	.249	2.577	WP-02250 D
2-5/16	2-13/16	1/4	.395	2312	2.810	.249	2.640	WP-02312 D
2-3/8	2-7/8	1/4	.395	2375	2.872	.249	2.702	WP-02375 D
2-7/16	2-15/16	1/4	.395	2437	2.935	.249	2.765	WP-02437 D
2-1/2	3	1/4	.395	2500	2.997	.249	2.827	WP-02500 D
2-9/16	3-1/16	1/4	.395	2562	3.060	.249	2.890	WP-02562 D
2-5/8	3-1/8	1/4	.395	2625	3.122	.249	2.952	WP-02625 D
2-11/16	3-3/16	1/4	.395	2687	3.185	.249	3.015	WP-02687 D

Wiper - D

(Inch Size)

Wiper Dimensions				Groove Dimensions				Reference (For order processing)
Rod Dia.	Outer Dia.	Seal Step Height	Seal Height	Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	H	d	D	L	D1	
2-3/4	3-1/4	1/4	.395	2750	3.247	.249	3.077	WP-02750 D
2-13/16	3-5/16	1/4	.395	2812	3.310	.249	3.140	WP-02812 D
2-7/8	3-3/8	1/4	.395	2875	3.372	.249	3.202	WP-02875 D
2-15/16	3-7/16	1/4	.395	2937	3.435	.249	3.265	WP-02937 D
3	3-1/2	1/4	.395	3000	3.497	.249	3.327	WP-03000 D
3-1/8	3-5/8	1/4	.395	3125	3.622	.249	3.452	WP-03125 D
3-1/4	3-3/4	1/4	.395	3250	3.747	.249	3.577	WP-03250 D
3-3/8	3-7/8	1/4	.395	3375	3.872	.249	3.702	WP-03375 D
3-1/2	4	1/4	.395	3500	3.997	.249	3.827	WP-03500 D
3-5/8	4-1/8	1/4	.395	3625	4.122	.249	3.952	WP-03625 D
3-3/4	4-1/4	1/4	.395	3750	4.247	.249	4.077	WP-03750 D
3-7/8	4-3/8	1/4	.395	3875	4.372	.249	4.202	WP-03875 D
4	4-1/2	1/4	.395	4000	4.497	.249	4.327	WP-04000 D
4-1/8	4-5/8	1/4	.395	4125	4.622	.249	4.452	WP-04125 D
4-1/4	4-3/4	1/4	.395	4250	4.747	.249	4.577	WP-04250 D
4-3/8	4-7/8	1/4	.395	4375	4.872	.249	4.702	WP-04375 D
4-1/2	5-1/4	3/8	.585	4500	5.247	.374	4.993	WP-04500 D
4-5/8	5-3/8	3/8	.585	4625	5.372	.374	5.118	WP-04625 D
4-3/4	5-1/2	3/8	.585	4750	5.497	.374	5.243	WP-04750 D
4-7/8	5-5/8	3/8	.585	4875	5.622	.374	5.368	WP-04875 D
5	5-3/4	3/8	.585	5000	5.747	.374	5.493	WP-05000 D
5-1/8	5-7/8	3/8	.585	5125	5.872	.374	5.618	WP-05125 D
5-1/4	6	3/8	.585	5250	5.997	.374	5.743	WP-05250 D
5-3/8	6-1/8	3/8	.585	5375	6.122	.374	5.868	WP-05375 D
5-1/2	6-1/4	3/8	.585	5500	6.247	.374	5.993	WP-05500 D
5-5/8	6-3/8	3/8	.585	5625	6.372	.374	6.118	WP-05625 D
5-3/4	6-1/2	3/8	.585	5750	6.497	.374	6.243	WP-05750 D
5-7/8	6-5/8	3/8	.585	5875	6.622	.374	6.368	WP-05875 D
6	6-3/4	3/8	.585	6000	6.747	.374	6.493	WP-06000 D
6-1/4	7	3/8	.585	6250	6.997	.374	6.743	WP-06250 D
6-1/2	7-1/4	3/8	.585	6500	7.247	.374	6.993	WP-06500 D
6-3/4	7-1/2	3/8	.585	6750	7.497	.374	7.243	WP-06750 D
7	7-3/4	3/8	.585	7000	7.747	.374	7.493	WP-07000 D
7-1/4	8	3/8	.585	7250	7.997	.374	7.743	WP-07250 D
7-1/2	8-1/4	3/8	.585	7500	8.247	.374	7.993	WP-07500 D
7-3/4	8-1/2	3/8	.585	7750	8.497	.374	8.243	WP-07750 D
8	8-3/4	3/8	.585	8000	8.747	.374	8.493	WP-08000 D
8-1/4	9	3/8	.585	8250	8.997	.374	8.743	WP-08250 D
8-1/2	9-1/4	3/8	.585	8500	9.247	.374	8.993	WP-08500 D
8-3/4	9-1/2	3/8	.585	8750	9.497	.374	9.243	WP-08750 D

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Wiper Dimensions				Groove Dimensions				Reference (For order processing)
Rod Dia.	Outer Dia.	Seal Step Height	Seal Height	Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	H	d	D	L	D1	
9	9-3/4	3/8	.585	9000	9.747	.374	9.493	WP-09000 D
9-1/4	10	3/8	.585	9250	9.997	.374	9.743	WP-09250 D
9-1/2	10-1/4	3/8	.585	9500	10.247	.374	9.993	WP-09500 D
9-3/4	10-1/2	3/8	.585	9750	10.497	.374	10.243	WP-09750 D
10	11	1/2	.775	10000	10.997	.499	10.659	WP-10000 D
10-1/4	11-1/4	1/2	.775	10250	11.247	.499	10.909	WP-10250 D
10-1/2	11-1/2	1/2	.775	10500	11.497	.499	11.159	WP-10500 D
10-3/4	11-3/4	1/2	.775	10750	11.747	.499	11.409	WP-10750 D
11	12	1/2	.775	11000	11.997	.499	11.659	WP-11000 D
11-1/4	12-1/4	1/2	.775	11250	12.247	.499	11.909	WP-11250 D
11-1/2	12-1/2	1/2	.775	11500	12.497	.499	12.159	WP-11500 D
11-3/4	12-3/4	1/2	.775	11750	12.747	.499	12.409	WP-11750 D
12	13	1/2	.775	12000	12.997	.499	12.659	WP-12000 D
12-1/2	13-1/2	1/2	.775	12500	13.497	.499	13.159	WP-12500 D
13	14	1/2	.775	13000	13.997	.499	13.659	WP-13000 D
13-1/4	14-1/4	1/2	.775	13250	14.247	.499	13.909	WP-13250 D
13-1/2	14-1/2	1/2	.775	13500	14.497	.499	14.159	WP-13500 D
13-3/4	14-3/4	1/2	.775	13750	14.747	.499	14.409	WP-13750 D
14	15	1/2	.775	14000	14.997	.499	14.659	WP-14000 D
14-1/2	15-1/2	1/2	.775	14500	15.447	.499	15.159	WP-14500 D
14-3/4	15-3/4	1/2	.775	14750	15.747	.499	15.409	WP-14750 D
15	16	1/2	.775	15000	15.997	.499	15.659	WP-15000 D
15-1/2	16-1/2	1/2	.775	15500	16.447	.499	16.159	WP-15500 D
16	17	1/2	.775	16000	16.997	.499	16.659	WP-16000 D
16-1/2	17-1/2	1/2	.775	16500	17.447	.499	17.159	WP-16500 D
18	19	1/2	.775	18000	18.997	.499	18.659	WP-18000 D
18-1/2	19-1/2	1/2	.775	18500	19.447	.499	19.159	WP-18500 D
20	21	1/2	.775	20000	20.997	.499	20.659	WP-20000 D

Wiper - 940 , 959

Wipers

940, 959 (Inch Size)

940 , 959

Material	Temp. (°c)	Speed (m/s)
PU	-35 +95	0.5

- Space saving construction.
- High wear resistance.
- Easy to install.
- Economical wiper.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Rod Dia.	Wiper Dimensions			Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Seal Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	H	D	L	D1	
.498	.766	.104	.187	.760	.107	.647	940-01
.560	.829	.104	.187	.823	.107	.710	940-02
.623	.891	.104	.187	.885	.107	.772	940-03
.685	.954	.104	.187	.948	.107	.834	940-04
.748	1.016	.104	.187	1.010	.107	.897	940-05
.810	1.090	.104	.187	1.084	.107	.960	940-06
.873	1.153	.104	.187	1.147	.107	1.023	940-07
.935	1.215	.104	.187	1.209	.107	1.085	940-08
.998	1.278	.104	.187	1.272	.107	1.148	940-09
1.060	1.340	.104	.187	1.334	.107	1.210	940-10
1.123	1.403	.104	.187	1.397	.107	1.273	940-11
1.185	1.465	.104	.187	1.459	.107	1.335	940-12
1.248	1.528	.104	.187	1.522	.107	1.398	940-13
1.310	1.622	.104	.187	1.614	.107	1.480	940-14
1.373	1.685	.104	.187	1.677	.107	1.542	940-15
1.435	1.747	.104	.187	1.739	.107	1.605	940-16
1.498	1.810	.104	.187	1.802	.107	1.668	940-17
1.561	1.873	.104	.187	1.865	.107	1.731	940-1.561
1.623	1.935	.104	.187	1.927	.107	1.793	940-18
1.686	1.998	.104	.187	1.990	.107	1.856	940-1.686
1.748	2.060	.104	.187	2.052	.107	1.918	940-19
1.811	2.123	.104	.187	2.115	.107	1.981	940-1.811
1.873	2.185	.104	.187	2.177	.107	2.043	940-20
1.936	2.248	.104	.187	2.240	.107	2.106	940-1.936
1.998	2.310	.104	.187	2.302	.107	2.178	940-21
2.061	2.373	.104	.187	2.365	.107	2.241	940-2.061
2.123	2.435	.104	.187	2.427	.107	2.303	940-22
2.186	2.498	.104	.187	2.490	.107	2.366	940-2.186
2.248	2.560	.104	.187	2.552	.107	2.428	940-23
2.311	2.623	.104	.187	2.615	.107	2.491	940-2.311
2.373	2.685	.104	.187	2.677	.107	2.553	940-24
2.436	2.748	.104	.187	2.740	.107	2.616	940-2.436
2.498	2.810	.104	.187	2.802	.107	2.678	940-25
2.561	2.873	.104	.187	2.865	.107	2.741	940-2.561
2.623	2.999	.119	.211	2.989	.122	2.834	940-26
2.686	3.062	.119	.211	3.052	.122	2.897	940-2.686
2.748	3.124	.119	.211	3.114	.122	2.959	940-27
2.811	3.187	.119	.211	3.177	.122	3.022	940-2.811
2.873	3.249	.119	.211	3.239	.122	3.084	940-28
2.997	3.374	.119	.211	3.364	.122	3.209	940-29

Wiper - 940 , 959

(Inch Size)

Rod Dia.	Wiper Dimensions			Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Seal Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	H	D	L	D1	
3.122	3.499	.119	.211	3.489	.122	3.334	940-30
3.247	3.624	.119	.211	3.614	.122	3.459	940-31
3.372	3.749	.119	.211	3.739	.122	3.584	940-32
3.497	3.874	.119	.211	3.864	.122	3.709	940-33
3.622	3.999	.119	.211	3.989	.122	3.834	940-34
3.747	4.124	.119	.211	4.114	.122	3.959	940-35
3.872	4.249	.119	.211	4.239	.122	4.084	940-36
3.997	4.439	.135	.238	4.427	.138	4.240	940-37
4.122	4.564	.135	.238	4.552	.138	4.365	940-38
4.247	4.689	.135	.238	4.677	.138	4.490	940-39
4.372	4.814	.135	.238	4.802	.138	4.615	940-40
4.497	4.939	.135	.238	4.927	.138	4.740	940-41
4.622	5.064	.135	.238	5.052	.138	4.865	940-42
4.747	5.189	.135	.238	5.177	.138	4.990	940-43
4.872	5.314	.135	.238	5.302	.138	5.115	940-44
4.997	5.439	.135	.238	5.427	.138	5.240	940-45
5.122	5.564	.135	.238	5.552	.138	5.365	940-46
5.247	5.689	.135	.238	5.677	.138	5.490	940-47
5.372	5.814	.135	.238	5.802	.138	5.615	940-48
5.497	5.939	.135	.238	5.927	.138	5.740	940-49
5.622	6.128	.151	.264	6.114	.154	5.896	940-50
5.747	6.254	.151	.264	6.239	.154	6.022	940-51
5.872	6.379	.151	.264	6.364	.154	6.146	940-52
5.997	6.504	.151	.264	6.489	.154	6.272	940-53
6.247	6.754	.151	.264	6.739	.154	6.522	940-54
6.497	7.004	.151	.264	6.989	.154	6.772	940-55
6.747	7.254	.151	.264	7.239	.154	7.022	940-56
6.997	7.504	.151	.264	7.489	.154	7.272	940-57
7.247	7.754	.151	.264	7.739	.154	7.522	940-58
7.497	8.004	.151	.264	7.989	.154	7.772	940-59
7.747	8.254	.151	.264	8.239	.154	8.022	940-60
7.997	8.504	.151	.264	8.489	.154	8.272	940-61
8.247	8.754	.151	.264	8.739	.154	8.522	940-8.247
8.497	9.004	.151	.264	8.989	.154	8.772	940-62
8.747	9.254	.151	.264	9.239	.154	9.022	940-8.747
8.997	9.504	.151	.264	9.489	.154	9.272	940-63
9.247	9.754	.151	.264	9.739	.154	9.522	940-9.247
9.497	10.004	.151	.264	9.989	.154	9.772	940-64
9.747	10.254	.151	.264	10.239	.154	10.022	940-9.747
9.997	10.504	.151	.264	10.489	.154	10.272	940-65

(Inch Size)

Rod Dia.	Wiper Dimensions			Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Seal Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	H	D	L	D1	
10.247	10.754	.151	.264	10.739	.154	10.522	940-10.247
10.497	11.004	.151	.264	10.989	.154	10.772	940-66
10.747	11.254	.151	.264	11.239	.154	11.022	940-10.747
10.997	11.504	.151	.264	11.489	.154	11.272	940-67
11.247	11.759	.166	.289	11.739	.169	11.522	940-11.247
11.497	12.009	.166	.289	11.989	.169	11.772	940-68
11.747	12.259	.166	.289	12.239	.169	12.022	940-11.747
11.997	12.509	.166	.289	12.489	.169	12.272	940-69
12.247	12.759	.166	.289	12.739	.169	12.522	940-12.247
12.497	13.009	.166	.289	12.989	.169	12.772	940-70
12.747	13.259	.166	.289	13.239	.169	13.022	940-12.747
12.997	13.509	.166	.289	13.489	.169	13.272	940-71

SPEC SEAL
Seals & O-rings Specialist

Wiper - H

Wipers

H (Inch Size)

H

Material	Temp. (°c)	Speed (m/s)
PU	-35 +95	0.5

- Provide both sealing and wiping action in low pressure.
- One piece snap in type.
- High wear resistance.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Rod Dia.	Wiper Dimensions		Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	D	L	D1	
.250	9/16	.194	.552	.203	.370	H-00250
.312	5/8	.194	.615	.203	.432	H-00312
.375	11/16	.194	.677	.203	.495	H-00375
.437	3/4	.194	.740	.203	.557	H-00437
.500	13/16	.194	.802	.203	.620	H-00500
.562	7/8	.194	.865	.203	.682	H-00562
.625	15/16	.194	.927	.203	.745	H-00625
.688	1	.194	.990	.203	.808	H-00687
.750	1-1/16	.194	1.052	.203	.870	H-00750
.812	1-3/16	.212	1.177	.218	.947	H-00812
.875	1-1/4	.212	1.240	.218	1.010	H-00875
.937	1-5/16	.212	1.302	.218	1.072	H-00937
1.000	1-3/8	.212	1.365	.218	1.135	H-01000
1.062	1-7/16	.212	1.427	.218	1.197	H-01062
1.125	1-1/2	.212	1.490	.218	1.260	H-01125
1.187	1-9/16	.212	1.552	.218	1.322	H-01187
1.250	1-5/8	.212	1.615	.218	1.385	H-01250
1.312	1-11/16	.212	1.702	.218	1.447	H-01312
1.375	1-3/4	.212	1.740	.218	1.510	H-01375
1.437	1-13/16	.212	1.802	.218	1.572	H-01437
1.500	1-7/8	.212	1.865	.218	1.635	H-01500
1.562	1-15/16	.212	1.927	.218	1.697	H-01562
1.625	2	.212	1.990	.218	1.760	H-01625
1.688	2-1/16	.212	2.052	.218	1.823	H-01687
1.750	2-1/8	.212	2.115	.218	1.885	H-01750
1.812	2-3/16	.212	2.177	.218	1.947	H-01812
1.875	2-1/4	.212	2.240	.218	2.010	H-01875
1.937	2-5/16	.212	2.302	.218	2.072	H-01937
2.000	2-3/8	.212	2.365	.218	2.135	H-02000
2.062	2-7/16	.212	2.427	.218	2.197	H-02062
2.125	2-1/2	.212	2.490	.218	2.260	H-02125
2.188	2-11/16	.275	2.683	.281	2.323	H-02187
2.250	2-3/4	.275	2.745	.281	2.385	H-02250
2.312	2-13/16	.275	2.807	.281	2.447	H-02312
2.375	2-7/8	.275	2.870	.281	2.510	H-02375
2.437	2-15/16	.275	2.932	.281	2.572	H-02437
2.500	3	.275	2.995	.281	2.635	H-02500
2.562	3-1/16	.275	3.057	.281	2.697	H-02562
2.625	3-1/8	.275	3.120	.281	2.760	H-02625
2.688	3-3/16	.275	3.183	.281	2.823	H-02687

Wiper - H

(Inch Size)

Rod Dia.	Wiper Dimensions		Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	D	L	D1	
2.750	3-1/4	.275	3.245	.281	2.885	H-02750
2.812	3-5/16	.275	3.307	.281	2.947	H-02812
2.875	3-3/8	.275	3.370	.281	3.010	H-02875
2.938	3-7/16	.275	3.433	.281	3.073	H-02937
3.000	3-1/2	.275	3.495	.281	3.135	H-03000
3.125	3-5/8	.275	3.620	.281	3.260	H-03125
3.250	3-3/4	.275	3.745	.281	3.385	H-03250
3.375	3-7/8	.275	3.870	.281	3.510	H-03375
3.500	4	.275	3.995	.281	3.635	H-03500
3.625	4-1/8	.275	4.120	.281	3.760	H-03625
3.750	4-1/4	.275	4.245	.281	3.885	H-03750
3.875	4-3/8	.275	4.370	.281	4.010	H-03875
4.000	4-1/2	.275	4.495	.281	4.135	H-04000
4.125	4-5/8	.275	4.620	.281	4.260	H-04125
4.250	4-3/4	.275	4.745	.281	4.385	H-04250
4.375	4-7/8	.275	4.870	.281	4.510	H-04375
4.500	5	.275	4.995	.281	4.635	H-04500
4.625	5-1/8	.275	5.120	.281	4.760	H-04625
4.750	5-1/4	.275	5.245	.281	4.885	H-04750
4.875	5-3/8	.275	5.370	.281	5.010	H-04875
5.000	5-1/2	.275	5.495	.281	5.135	H-05000
5.125	5-5/8	.275	5.620	.281	5.260	H-05125
5.250	5-3/4	.275	5.745	.281	5.385	H-05250
5.375	5-7/8	.275	5.870	.281	5.510	H-05375
5.500	6	.275	5.995	.281	5.635	H-05500
5.625	6-1/8	.275	6.120	.281	5.760	H-05625
5.750	6-1/4	.275	6.245	.281	5.885	H-05750
5.875	6-3/8	.275	6.370	.281	6.010	H-05875
6.000	6-1/2	.275	6.495	.281	6.135	H-06000
6.250	6-3/4	.275	6.745	.281	6.385	H-06250
6.500	7	.275	6.995	.281	6.635	H-06500
6.750	7-1/4	.275	7.245	.281	6.885	H-06750
7.000	7-1/2	.275	7.495	.281	7.135	H-07000
7.250	7-3/4	.275	7.745	.281	7.385	H-07250
7.500	8	.275	7.995	.281	7.635	H-07500
7.750	8-1/4	.275	8.245	.281	7.885	H-07750
8.000	8-1/2	.275	8.495	.281	8.135	H-08000
8.250	8-3/4	.275	8.745	.281	8.385	H-08250
8.500	9	.275	8.995	.281	8.635	H-08500
8.750	9-1/4	.275	9.245	.281	8.885	H-08750

(Inch Size)

Rod Dia.	Wiper Dimensions		Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	D	L	D1	
9.000	9-1/2	.275	9.495	.281	9.135	H-09000
9.250	9-3/4	.275	9.745	.281	9.385	H-09250
9.500	10	.275	9.995	.281	9.635	H-09500
9.750	10-1/4	.275	10.245	.281	9.885	H-09750
10.000	10-1/2	.275	10.495	.281	10.135	H-10000

SPEC SEAL
Seals & O-rings Specialist

Wiper - K

Wipers

K (Inch Size)

K

Material	Temp. (°c)	Speed (m/s)
PU	-35 +95	0.5

- One piece snap in type.
- Good scraping effect.
- High wear resistance.
- Long service life.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Rod Dia.	Wiper Dimensions		Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	D	L	D1	
1/2	3/4	.150	.760	.155	.625	K-00500
9/16	13/16	.150	.822	.155	.687	K-00562
5/8	7/8	.150	.885	.155	.750	K-00625
11/16	15/16	.150	.947	.155	.812	K-00687
3/4	1-1/8	.190	1.135	.195	.832	K-00750
13/16	1-13/16	.190	1.197	.195	.894	K-00812
7/8	1-1/4	.190	1.260	.195	.957	K-00875
15/16	1-5/16	.190	1.322	.195	1.019	K-00937
1	1-3/8	.190	1.385	.195	1.082	K-01000
1-1/16	1-7/16	.190	1.447	.195	1.144	K-01062
1-1/8	1-1/2	.190	1.510	.195	1.207	K-01125
1-3/16	1-9/16	.190	1.572	.195	1.269	K-01187
1-1/4	1-5/8	.190	1.635	.195	1.332	K-01250
1-5/16	1-11/16	.190	1.697	.195	1.394	K-01312
1-3/8	1-3/4	.190	1.760	.195	1.457	K-01375
1-7/16	1-13/16	.190	1.822	.195	1.519	K-01437
1-1/2	1-7/8	.190	1.885	.195	1.582	K-01500
1-9/16	1-15/16	.190	1.947	.195	1.644	K-01562
1-5/8	2	.190	2.010	.195	1.707	K-01625
1-11/16	2-1/16	.190	2.072	.195	1.769	K-01687
1-3/4	2-1/8	.190	2.135	.195	1.832	K-01750
1-13/16	2-3/16	.190	2.197	.195	1.894	K-01812
1-7/8	2-1/4	.190	2.260	.195	1.957	K-01875
1-15/16	2-5/16	.190	2.322	.195	2.019	K-01937
2	2-3/8	.190	2.385	.195	2.082	K-02000
2-1/8	2-1/2	.190	2.510	.195	2.207	K-02125
2-1/4	2-3/4	.250	2.760	.255	2.407	K-02250
2-3/8	2-7/8	.250	2.885	.255	2.532	K-02375
2-1/2	3	.250	3.010	.255	2.657	K-02500
2-5/8	3-1/8	.250	3.135	.255	2.782	K-02625
2-3/4	3-1/4	.250	3.260	.255	2.907	K-02750
2-7/8	3-3/8	.250	3.385	.255	3.032	K-02875
3	3-1/2	.250	3.510	.255	3.157	K-03000
3-1/8	3-5/8	.250	3.635	.255	3.282	K-03125
3-1/4	3-3/4	.250	3.760	.255	3.407	K-03250
3-3/8	3-7/8	.250	3.885	.255	3.532	K-03375
3-1/2	4	.250	4.010	.255	3.657	K-03500
3-5/8	4-1/8	.250	4.135	.255	3.782	K-03625
3-3/4	4-1/4	.250	4.260	.255	3.907	K-03750
3-7/8	4-3/8	.250	4.385	.255	4.032	K-03875

Wiper - K

(Inch Size)

Rod Dia.	Wiper Dimensions		Groove Dimensions			Reference (For order processing)
	Outer Dia.	Seal Step Height	Groove Dia.	Groove Width	Bore Dia.	
d	A	h	D	L	D1	
4	4-1/2	.250	4.510	.255	4.157	K-04000
4-1/8	4-5/8	.250	4.635	.255	4.282	K-04125
4-1/4	4-3/4	.250	4.760	.255	4.407	K-04250
4-3/8	4-7/8	.250	4.885	.255	4.532	K-04375
4-1/2	5	.250	5.010	.255	4.657	K-04500
4-5/8	5-1/8	.250	5.135	.255	4.782	K-04625
4-3/4	5-1/4	.250	5.260	.255	4.907	K-04750
4-7/8	5-3/8	.250	5.385	.255	5.032	K-04875
5	5-1/2	.250	5.510	.255	5.157	K-05000
5-1/4	5-3/4	.250	5.760	.255	5.407	K-05250
5-1/2	6	.250	6.010	.255	5.657	K-05500
5-3/4	6-1/4	.250	6.260	.255	5.907	K-05750
6	6-1/2	.250	6.510	.255	6.157	K-06000
6-1/4	6-3/4	.250	6.760	.255	6.407	K-06250
6-1/2	7	.250	7.010	.255	6.657	K-06500
6-3/4	7-1/4	.250	7.260	.255	6.907	K-06750
7	7-1/2	.250	7.510	.255	7.157	K-07000
7-1/2	8	.250	8.010	.255	7.657	K-07500
8	8-1/2	.250	8.510	.255	8.157	K-08000
8-1/2	9	.250	9.010	.255	8.657	K-08500
9	9-1/2	.250	9.510	.255	9.157	K-09000
9-1/2	10	.250	10.010	.255	9.657	K-09500
10	10-1/2	.250	10.510	.255	10.157	K-10000

SPEC SEAL

Seals & O-rings Specialist

Wiper - EWS

Wipers

EWS (Inch Size)

EWS

Material	Temp. (°c)	Speed (m/s)
PU	-35 +95	0.5

- Simple groove design.
- Small installation groove.
- Wear resistant.
- Long service life.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

(Inch Size)

Rod Dia.	Groove Dia.	Groove Width	Bore Dia.	Reference (For order processing)
d	D	L	D1	
2.750	3.187	.187	2.970	EWS-275
3.000	3.500	.187	3.250	EWS-300
3.500	4.062	.187	3.790	EWS-350
3.625	4.187	.187	3.910	EWS-362
4.375	4.906	.187	4.670	EWS-437
6.312	6.906	.187	6.670	EWS-631
7.312	7.906	.187	7.680	EWS-731
8.375	8.969	.187	8.740	EWS-837
9.438	10.090	.187	9.836	EWS-943

SPEC SEAL
Seals & O-rings Specialist

Wiper - PWB

Wipers

PWB (Imperial Size)

PWB

Material	Temp. (°c)	Speed (m/s)
NBR	-30 +110	1

- Low friction.
- Very small installation groove.
- High wear resistance.
- Easy installation.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Imperial Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Reference (For order processing)	Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Reference (For order processing)
9.52	13.72	3.05	10.92	PWB-0	79.37	89.15	6.35	82.80	PWB-34
11.11	15.49	3.05	12.57	PWB-01	82.55	92.61	6.35	86.11	PWB-35
12.70	17.27	3.30	14.22	PWB-1	85.72	96.01	6.60	89.15	PWB-36
14.29	18.80	3.30	16.00	PWB-2	88.90	99.57	6.86	92.46	PWB-37
15.87	20.83	3.56	17.78	PWB-3	92.07	102.87	6.86	95.76	PWB-38
17.46	22.35	3.56	19.30	PWB-4	95.25	106.43	7.11	99.06	PWB-39
19.05	24.13	3.56	20.83	PWB-5	98.42	109.73	7.11	102.36	PWB-40
20.64	25.91	3.56	22.35	PWB-6	101.60	113.28	7.37	105.66	PWB-41
22.22	27.43	3.81	24.13	PWB-7	104.77	110.24	4.06	106.93	PWB-42
23.81	29.21	3.81	25.65	PWB-8	107.95	113.03	3.81	109.98	PWB-43D
25.40	31.50	4.06	27.43	PWB-9	107.95	120.14	7.62	112.01	PWB-44
26.99	32.77	4.06	28.96	PWB-10	111.12	123.44	7.62	115.32	PWB-45
28.57	34.54	4.06	30.73	PWB-11	114.30	127.00	7.87	118.62	PWB-46
30.16	36.07	4.06	32.26	PWB-12	120.65	133.86	8.13	125.22	PWB-47
31.75	37.85	4.32	33.78	PWB-13	127.00	140.72	8.38	131.57	PWB-48
33.34	39.37	4.32	35.31	PWB-14	133.35	147.57	8.64	138.18	PWB-50
34.92	41.27	4.32	37.08	PWB-15	136.52	151.00	8.75	141.48	PWB-51
36.51	42.93	4.32	38.61	PWB-16	139.70	154.43	8.89	144.78	PWB-52
38.10	44.96	4.57	40.39	PWB-17	142.87	155.58	9.02	147.95	PWB-53
39.68	46.23	4.57	41.91	PWB-18	146.05	161.29	9.14	151.13	PWB-54
41.27	47.75	4.57	43.65	PWB-19	152.40	168.15	9.25	157.73	PWB-56
42.86	49.78	4.83	45.21	PWB-20	158.75	175.00	9.90	164.34	PWB-58
44.45	51.56	4.83	46.99	PWB-21	165.10	181.86	10.16	170.68	PWB-60
46.04	53.34	4.83	48.51	PWB-22	168.27	185.29	10.28	173.99	PWB-61
47.62	54.86	4.83	50.04	PWB-23	171.45	188.72	10.41	177.29	PWB-62
49.21	56.90	5.08	51.82	PWB-24	177.80	195.70	10.66	183.89	PWB-64
50.80	58.42	5.08	53.24	PWB-25	196.85	216.15	11.68	203.45	PWB-70
53.97	61.72	5.33	56.64	PWB-26	203.20	223.01	11.93	210.05	PWB-72
57.15	65.28	5.33	59.94	PWB-27					
60.32	68.58	5.59	63.25	PWB-28					
63.50	72.14	5.59	66.29	PWB-29					
66.67	75.44	5.84	69.60	PWB-30					
69.85	78.79	5.84	72.40	PWB-31					
73.02	82.30	6.10	76.20	PWB-32					
76.20	85.85	6.10	79.50	PWB-33					

SPEC SEAL Seals & O-rings Specialist

Wiper - EVH

Wipers

EVH (Imperial Size)

EVH

Material	Temp. (°c)	Speed (m/s)
NBR	-30 +110	1

- Large cross section type.
- Good scraping effect.
- Wear resistance.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Imperial Size)

Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Reference (For order processing)	Rod Dia. d	Groove Dia. D	Groove Width. L	Bore Dia. D1	Reference (For order processing)
3.17	7.93	0.79	3.96	EVH-012	76.20	114.30	4.76	15.87	EVH-300
4.76	11.11	1.58	3.17	EVH-018	82.55	107.95	3.17	9.52	EVH-325
6.35	15.87	2.38	4.76	EVH-025	88.90	133.35	4.76	12.70	EVH-350
7.93	19.05	1.58	4.76	EVH-031	95.25	123.80	4.76	11.90	EVH-375
9.52	22.22	1.58	4.76	EVH-037	101.60	127.00	3.17	12.70	EVH-400
11.11	23.81	3.17	6.35	EVH-043	107.95	146.05	4.56	15.87	EVH-425
12.70	25.40	3.17	6.35	EVH-050	114.30	134.90	5.33	12.70	EVH-450
14.28	27.78	3.17	9.52	EVH-056	120.70	149.20	4.76	12.70	EVH-475
15.87	34.93	3.17	9.52	EVH-062	127.00	152.40	6.35	15.87	EVH-500
17.46	41.28	4.76	12.70	EVH-068	133.35	158.80	4.76	12.70	EVH-525
19.05	38.10	3.17	9.52	EVH-075	139.70	165.10	4.76	12.70	EVH-550
20.63	34.93	3.17	6.35	EVH-081	146.10	171.50	4.76	12.70	EVH-575
22.22	44.45	3.96	12.70	EVH-087	152.50	177.80	6.35	15.87	EVH-600
23.81	45.24	4.76	12.70	EVH-093	158.80	184.20	6.35	15.87	EVH-625
25.40	44.45	3.17	9.52	EVH-100	165.10	182.60	2.54	7.61	EVH-650
28.58	50.80	3.17	9.52	EVH-112	171.50	196.90	6.35	15.87	EVH-675
31.75	74.61	5.08	12.70	EVH-125	177.80	203.20	6.35	15.87	EVH-700
34.93	55.05	3.17	7.93	EVH-137	184.20	215.90	6.35	15.87	EVH-725
38.10	69.85	3.17	10.31	EVH-150	190.50	222.30	6.35	15.87	EVH-750
41.28	63.50	3.17	9.52	EVH-162	196.90	228.60	6.35	15.87	EVH-775
44.45	69.85	4.76	11.11	EVH-175	203.20	241.30	4.76	15.87	EVH-800
47.63	73.03	3.17	9.52	EVH-187					
50.80	69.85	3.17	6.35	EVH-200					
53.98	76.20	3.17	9.52	EVH-212					
57.15	82.55	3.17	9.52	EVH-225					
60.33	90.09	3.57	9.52	EVH-237					
63.50	79.38	3.17	9.52	EVH-250					
66.68	101.60	2.38	9.52	EVH-262					
69.85	95.25	3.17	9.52	EVH-275					
73.03	98.43	3.17	9.52	EVH-287					

SPEC SEAL Seals & O-rings Specialist

Metal Case Wiper - GA

Wipers

GA (Metric Size)

GA

Material	Temp. (°c)	Speed (m/s)
NBR - Metal	-30 +120	1

- Space saving construction.
- Low cost, economical solution.
- Simple, easy-construction groove.
- Firm fit in the groove due to metallic press fit.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Seal Height	Reference (For order processing)
d	D	L/h	H	
10.0	16.0	3.0	4.5	GA 010-016-3/4.5
10.0	20.0	5.0	8.0	GA 010-020-5/8
12.0	18.0	4.0	6.0	GA 012-018-4/6
12.0	20.0	4.0	6.0	GA 012-020-4/6
14.0	19.8	3.0	4.5	GA 014-019.8-3/4.5
14.0	20.0	3.5	5.0	GA 014-020-3.5/5
14.0	22.0	3.0	4.0	GA 014-022-3/4
14.0	25.0	5.0	8.0	GA 014-025-5/8
15.0	25.0	5.0	8.0	GA 015-025-5/8
15.0	25.0	7.0	10.0	GA 015-025-7/10
16.0	22.0	3.0	4.0	GA 016-022-3/4
16.0	26.0	5.0	8.0	GA 016-026-5/8
18.0	26.0	7.0	10.0	GA 018-026-7/10
18.0	28.0	5.0	7.0	GA 018-028-5/7
18.0	28.0	7.0	10.0	GA 018-028-7/10
18.0	32.0	5.0	9.0	GA 018-032-5/9
20.0	26.0	3.5	5.0	GA 020-026-3.5/5
20.0	26.0	5.0	8.0	GA 020-026-5/8
20.0	28.0	3.5	5.0	GA 020-028-3.5/5
20.0	28.0	5.0	8.0	GA 020-028-5/8
20.0	30.0	4.0	6.0	GA 020-030-4/6
20.0	30.0	5.0	8.0	GA 020-030-5/8
20.0	30.0	7.0	10.0	GA 020-030-7/10
20.0	35.0	7.0	10.0	GA 020-035-7/10
21.0	28.0	3.5	5.0	GA 021-028-3.5/5
22.0	28.0	5.0	9.0	GA 022-028-5/9
22.0	30.0	4.0	5.0	GA 022-030-4/5
22.0	32.0	5.0	7.0	GA 022-032-5/7
22.0	32.0	7.0	10.0	GA 022-032-7/10
22.0	35.0	5.0	8.0	GA 022-035-5/8
23.0	33.0	5.0	8.0	GA 023-033-5/8
24.0	32.0	5.0	7.0	GA 024-032-5/7
25.0	31.0	5.0	7.0	GA 025-031-5/7
25.0	35.0	5.0	8.0	GA 025-035-5/8
25.0	35.0	7.0	10.0	GA 025-035-7/10
28.0	38.0	5.0	8.0	GA 028-038-5/8
28.0	38.0	7.0	10.0	GA 028-038-7/10
28.0	40.0	7.0	10.0	GA 028-040-7/10
30.0	40.0	5.0	8.0	GA 030-040-5/8
30.0	40.0	7.0	10.0	GA 030-040-7/10
32.0	40.0	4.0	7.0	GA 032-040-4/7
32.0	42.0	5.0	7.0	GA 032-042-5/7
32.0	42.0	7.0	10.0	GA 032-042-7/10
32.0	45.0	4.0	8.0	GA 032-045-4/8
32.0	45.0	5.0	7.0	GA 032-045-5/7

Metal Case Wiper - GA

(Metric Size)

Rod Dia.	Groove Dia.	Groove Width	Seal Height	Reference (For order processing)
d	D	L/h	H	
32.0	45.0	7.0	10.0	GA 032-045-7/10
35.0	45.0	5.0	8.0	GA 035-045-5/8
35.0	45.0	7.0	10.0	GA 035-045-7/10
35.0	47.0	7.0	10.0	GA 035-047-7/10
35.0	52.0	7.0	10.0	GA 035-052-7/10
36.0	45.0	7.0	10.0	GA 036-045-7/10
36.0	46.0	5.0	8.0	GA 036-046-5/8
36.0	46.0	7.0	10.0	GA 036-046-7/10
38.0	48.0	7.0	10.0	GA 038-048-7/10
40.0	50.0	5.0	8.0	GA 040-050-5/8
40.0	50.0	7.0	10.0	GA 040-050-7/10
40.0	52.0	5.0	8.0	GA 040-052-5/8
40.0	52.0	7.0	10.0	GA 040-052-7/10
42.0	52.0	7.0	10.0	GA 042-052-7/10
45.0	55.0	7.0	10.0	GA 045-055-7/10
45.0	57.0	7.0	10.0	GA 045-057-7/10
45.0	60.0	7.0	10.0	GA 045-060-7/10
48.0	60.0	7.0	10.0	GA 048-060-7/10
50.0	56.0	5.0	7.0	GA 050-056-5/7
50.0	60.0	5.0	7.0	GA 050-060-5/7
50.0	60.0	7.0	10.0	GA 050-060-7/10
50.0	65.0	7.0	10.0	GA 050-065-7/10
52.0	62.0	7.0	10.0	GA 052-062-7/10
55.0	63.0	7.0	10.0	GA 055-063-7/10
55.0	65.0	5.0	8.0	GA 055-065-5/8
55.0	65.0	7.0	10.0	GA 055-065-7/10
56.0	65.0	7.0	10.0	GA 056-065-7/10
56.0	66.0	7.0	10.0	GA 056-066-7/10
60.0	70.0	7.0	10.0	GA 060-070-7/10
60.0	75.0	7.0	10.0	GA 060-075-7/10
60.0	80.0	7.0	10.0	GA 060-080-7/10
63.0	75.0	7.0	10.0	GA 063-075-7/10
65.0	75.0	7.0	10.0	GA 065-075-7/10
67.0	83.0	7.0	10.0	GA 067-083-7/10
70.0	80.0	7.0	10.0	GA 070-080-7/10
72.0	82.0	7.0	10.0	GA 072-082-7/10
75.0	85.0	7.0	10.0	GA 075-085-7/10
75.0	87.0	5.0	7.0	GA 075-087-5/7
78.0	88.0	7.0	10.0	GA 078-088-7/10
80.0	88.0	7.0	10.0	GA 080-088-7/10
80.0	90.0	7.0	10.0	GA 080-090-7/10
82.0	92.0	7.0	10.0	GA 082-092-7/10
85.0	95.0	7.0	10.0	GA 085-095-7/10
90.0	100.0	7.0	10.0	GA 090-100-7/10
95.0	105.0	7.0	10.0	GA 095-105-7/10

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L/h	Seal Height H	Reference (For order processing)
100.0	110.0	7.0	10.0	GA 100-110-7/10
105.0	115.0	7.0	10.0	GA 105-115-7/10
110.0	120.0	7.0	10.0	GA 110-120-7/10
115.0	125.0	7.0	10.0	GA 115-125-7/10
120.0	130.0	7.0	10.0	GA 120-130-7/10
125.0	135.0	7.0	10.0	GA 125-135-7/10
125.0	140.0	9.0	12.0	GA 125-140-9/12
130.0	145.0	7.0	10.0	GA 130-145-7/10
130.0	145.0	9.0	12.0	GA 130-145-9/12
135.0	145.0	7.0	10.0	GA 135-145-7/10
135.0	150.0	7.0	10.0	GA 135-150-7/10
135.0	150.0	9.0	12.0	GA 135-150-9/12
140.0	150.0	7.0	10.0	GA 140-150-7/10
140.0	155.0	9.0	12.0	GA 140-155-9/12
145.0	160.0	9.0	12.0	GA 145-160-9/12
150.0	165.0	9.0	12.0	GA 150-165-9/12
160.0	175.0	9.0	12.0	GA 160-175-9/12
163.0	175.0	7.0	10.0	GA 163-175-7/10
170.0	185.0	9.0	12.0	GA 170-185-9/12
170.0	185.0	10.0	14.0	GA 170-185-10/14
180.0	195.0	9.0	12.0	GA 180-195-9/12
180.0	195.0	10.0	14.0	GA 180-195-10/14
185.0	200.0	10.0	14.0	GA 185-200-10/14
190.0	215.0	12.0	16.0	GA 190-215-12/16
200.0	220.0	12.0	16.0	GA 200-220-12/16
210.0	230.0	12.0	16.0	GA 210-230-12/16
220.0	240.0	9.0	12.0	GA 220-240-9/12
220.0	240.0	12.0	16.0	GA 220-240-12/16
240.0	260.0	12.0	16.0	GA 240-260-12/16
250.0	270.0	12.0	16.0	GA 250-270-12/16
270.0	290.0	12.0	16.0	GA 270-290-12/16
270.0	295.0	12.0	16.0	GA 270-295-12/16
280.0	300.0	12.0	16.0	GA 280-300-12/16
310.0	340.0	16.0	22.0	GA 310-340-16/22
320.0	340.0	12.0	16.0	GA 320-340-12/16
320.0	345.0	12.0	16.0	GA 320-345-12/16
360.0	380.0	12.0	16.0	GA 360-380-12/16
360.0	380.0	15.0	18.0	GA 360-380-15/18
390.0	420.0	16.0	22.0	GA 390-420-16/22
400.0	420.0	12.0	16.0	GA 400-420-12/16

Metal Case Wiper - ME1, ME3, DKI

Wipers

ME-1, ME-3, DKI (Metric Size)

ME-1, DKBI

ME-3, DKI

Material	Temp. (°c)	Speed (m/s)
PU - Metal	-40 +80	0.5

- Space saving construction.
- Heavy duty type.
- Economical solution.
- Abrasion resistant.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Reference (For order processing)	Rod Dia. d	Groove Dia. D	Groove Width L	Reference (For order processing)
6.3	16.0	5.0	ME-3 006.3-016-05	64.0	78.0	8.0	ME-3 064-078-08
10.0	20.0	5.0	ME-3 010-020-05	65.0	77.0	7.0	ME-3 065-077-07
11.2	21.0	5.0	ME-3 011.2-021-05	65.0	79.0	8.0	ME-1 065-079-08
12.5	23.0	5.0	ME-3 012.5-023-05	65.0	79.0	8.0	ME-3 065-079-08
14.0	24.0	5.0	ME-3 014-024-05	67.0	81.0	8.0	ME-3 067-081-08
15.0	25.0	5.0	ME-3 015-025-05	70.0	80.0	7.0	ME-1 070-080-07
16.0	26.0	5.0	ME-3 016-026-05	70.0	84.0	8.0	ME-1 070-084-08
18.0	28.0	7.0	ME-3 018-028-07	70.0	84.0	8.0	ME-3 070-084-08
18.0	30.0	6.0	ME-1 018-030-06	71.0	85.0	8.0	ME-3 071-085-08
18.0	30.0	6.0	ME-3 018-030-06	75.0	87.0	7.0	ME-3 075-087-07
20.0	32.0	6.0	ME-1 020-032-06	75.0	89.0	8.0	ME-1 075-089-08
20.0	32.0	6.0	ME-3 020-032-06	75.0	89.0	8.0	ME-3 075-089-08
22.0	34.0	6.0	ME-1 022-034-06	80.0	94.0	8.0	ME-1 080-094-08
22.4	34.4	6.0	ME-3 022.4-034.4-06	80.0	94.0	8.0	ME-3 080-094-08
25.0	37.0	6.0	ME-1 025-037-06	85.0	99.0	8.0	ME-1 085-099-08
25.0	37.0	6.0	ME-3 025-037-06	85.0	99.0	8.0	ME-3 085-099-08
27.0	39.0	6.0	ME-3 027-039-06	90.0	104.0	8.0	ME-1 090-104-08
28.0	40.0	6.0	ME-3 028-040-06	90.0	104.0	8.0	ME-3 090-104-08
30.0	42.0	6.0	ME-1 030-042-06	95.0	109.0	8.0	ME-1 095-109-08
30.0	42.0	6.0	ME-3 030-042-06	95.0	109.0	8.0	ME-3 095-109-08
30.0	50.0	9.6	ME-3 030-050-09.6	100.0	114.0	8.0	ME-1 100-114-08
31.5	44.0	7.0	ME-3 031.5-044-07	100.0	114.0	8.0	ME-3 100-114-08
32.0	44.0	7.0	ME-3 032-044-07	105.0	121.0	9.0	ME-1 105-121-09
32.0	52.0	8.0	ME-1 032-052-08	105.0	121.0	9.0	ME-3 105-121-09
34.0	46.0	7.0	ME-1 034-046-07	110.0	126.0	9.0	ME-1 110-126-09
35.0	47.0	7.0	ME-1 035-047-07	110.0	126.0	9.0	ME-3 110-126-09
35.0	47.0	7.0	ME-3 035-047-07	120.0	136.0	9.0	ME-1 120-136-09
35.5	47.0	7.0	ME-3 035.5-047-07	120.0	136.0	9.0	ME-3 120-136-09
38.0	50.0	7.0	ME-3 038-050-07	125.0	141.0	9.0	ME-3 125-141-09
40.0	52.0	7.0	ME-1 040-052-07	130.0	146.0	9.0	ME-1 130-146-09
40.0	52.0	7.0	ME-3 040-052-07	135.0	150.0	8.0	ME-1 135-150-08
40.0	60.0	9.6	ME-3 040-060-09.6	140.0	160.0	10.0	ME-1 140-160-10
45.0	57.0	7.0	ME-1 045-057-07	140.0	160.0	10.0	ME-3 140-160-10
45.0	57.0	7.0	ME-3 045-057-07	150.0	170.0	10.0	ME-3 150-170-10
50.0	60.0	7.0	ME-3 050-060-07	170.0	190.0	10.0	ME-3 170-190-10
50.0	62.0	7.0	ME-1 050-062-07	170.0	191.0	8.0	ME-1 170-191-08
50.0	62.0	7.0	ME-3 050-062-07	175.0	195.0	10.0	ME-3 175-195-10
50.0	62.0	8.0	ME-1 050-062-08	180.0	205.0	12.0	ME-3 180-205-12
53.0	67.0	8.0	ME-3 053-067-08				
55.0	69.0	8.0	ME-1 055-069-08				
55.0	69.0	8.0	ME-3 055-069-08				
56.0	70.0	8.0	ME-3 056-070-08				
60.0	74.0	8.0	ME-1 060-074-08				
60.0	74.0	8.0	ME-3 060-074-08				
63.0	77.0	8.0	ME-3 063-077-08				

Metal Case Wiper - SCB

Wipers

SCB (Metric Size)

SCB

Material	Temp. (°c)	Speed (m/s)
NBR - Metal	-40 +100	1

- Meter casing type inserted into grooves by press fitting.
- Protect rod seals from dust and mud.
- High wear resistance.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove		Seal Height	Reference (For order processing)	Rod Dia.	Groove		Seal Height	Reference (For order processing)
	Dia.	Width				Dia.	Width		
d	D	L	H		d	D	L	H	
8.0	18.0	5.0	8.0	SCB-008	**71.0**	85.0	8.0	11.0	SCB-071
10.0	20.0	5.0	8.0	SCB-010	**75.0**	89.0	8.0	11.0	SCB-075
12.0	22.0	5.0	8.0	SCB-012-022-05/8	**78.0**	92.0	8.0	11.0	SCB-078-092-08/11
12.5	23.0	5.0	8.0	SCB-012.5	**80.0**	94.0	8.0	11.0	SCB-080
14.0	24.0	5.0	8.0	SCB-014	**85.0**	99.0	8.0	11.0	SCB-085
15.0	25.0	5.0	8.0	SCB-015	**90.0**	104.0	8.0	11.0	SCB-090
16.0	26.0	5.0	8.0	SCB-016	**95.0**	109.0	8.0	11.0	SCB-095
18.0	30.0	6.0	9.0	SCB-018	**98.0**	112.0	8.0	11.0	SCB-098-112-08/11
20.0	32.0	6.0	9.0	SCB-020	**100.0**	114.0	8.0	11.0	SCB-100
22.0	32.0	6.0	9.0	SCB-022-032-06/9	**105.0**	121.0	9.0	12.0	SCB-105A
22.0	34.0	6.0	9.0	SCB-022	**106.0**	120.0	8.0	11.0	SCB-106
22.4	34.4	6.0	9.0	SCB-022.4	**110.0**	126.0	9.0	12.0	SCB-110
25.0	37.0	6.0	9.0	SCB-025	**112.0**	128.0	9.0	12.0	SCB-112
28.0	40.0	6.0	9.0	SCB-028	**115.0**	131.0	9.0	12.0	SCB-115
30.0	42.0	6.0	9.0	SCB-030	**118.0**	134.0	9.0	12.0	SCB-118
30.0	45.0	6.0	9.0	SCB-030-045-06/9	**120.0**	136.0	9.0	12.0	SCB-120
31.5	44.0	7.0	10.0	SCB-031.5	**125.0**	141.0	9.0	12.0	SCB-125
32.0	44.0	7.0	10.0	SCB-032	**130.0**	146.0	9.0	12.0	SCB-130
34.0	46.0	7.0	10.0	SCB-034-046-07/10	**132.0**	148.0	9.0	12.0	SCB-132
35.0	47.0	7.0	10.0	SCB-035	**135.0**	155.0	10.0	14.0	SCB-135
35.5	47.5	7.0	10.0	SCB-035.5	**140.0**	160.0	10.0	14.0	SCB-140
40.0	52.0	7.0	10.0	SCB-040	**145.0**	165.0	10.0	14.0	SCB-145
45.0	57.0	7.0	10.0	SCB-045	**150.0**	170.0	10.0	14.0	SCB-150
50.0	62.0	7.0	10.0	SCB-050	**160.0**	180.0	10.0	14.0	SCB-160
55.0	69.0	8.0	11.0	SCB-055	**170.0**	190.0	10.0	14.0	SCB-170
56.0	70.0	8.0	11.0	SCB-056	**175.0**	195.0	10.0	14.0	SCB-175
60.0	74.0	8.0	11.0	SCB-060	**180.0**	200.0	10.0	14.0	SCB-180
63.0	77.0	8.0	11.0	SCB-063	**190.0**	215.0	12.0	16.0	SCB-190A
65.0	79.0	8.0	11.0	SCB-065	**200.0**	225.0	12.0	16.0	SCB-200A
70.0	84.0	8.0	11.0	SCB-070	**250.0**	274.0	12.0	16.0	SCB-250

Metal Case Wiper - DKB

Wipers

DKB (Metric Size)

DKB

Material	Temp. (°c)	Speed (m/s)
NBR - Metal	-20 +100	1

- Prevent entry of dust.
- Double-lip dust seal.
- Prevent oil scraping off.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia. d	Groove Dia. D	Groove Width L	Seal Height H	Reference (For order processing)
14	22	4	5.5	DKB 14x22x4/5.5
18	30	6	9.0	DKB 18x30x6/9
19	31	6	9.0	DKB 19x31x6/9
22	32	6	9.0	DKB 22x32x6/9
22	34	6	9.0	DKB 22x34x6/9
30	45	6	9.0	DKB 30x45x6/9
30	47	7	10.0	DKB 30x47x7/10
32	44	7	10.0	DKB 32x44x7/10
32	52	8	11.0	DKB 32x52x8/11
34	46	7	10.0	DKB 34x46x7/10
36	48	7	10.0	DKB 36x48x7/10
38	50	7	10.0	DKB 38x50x7/10
45	68	7	10.0	DKB 45x68x7/10
50	72	8	11.0	DKB 50x72x8/11
70	84	8	11.0	DKB 70x84x8/11
75	89	8	11.0	DKB 75x89x8/11
85	99	8	11.0	DKB 85x99x8/11
90	104	8	11.0	DKB 90x104x8/11
95	109	8	11.0	DKB 95x109x8/11
100	114	8	11.0	DKB 100x114x8/11
105	121	9	12.0	DKB 105x121x9/12
110	126	9	12.0	DKB 110x126x9/12
120	136	9	12.0	DKB 120x136x9/12
130	146	9	12.0	DKB 130x146x9/12
140	160	10	14.0	DKB 140x160x10/14
145	165	10	14.0	DKB 145x165x10/14
150	170	10	14.0	DKB 150x170x10/14
160	180	10	14.0	DKB 160x180x10/14
170	190	10	14.0	DKB 170x190x10/14
180	200	10	14.0	DKB 180x200x10/14
180	205	12	17.0	DKB 180x205x12/17
190	215	12	17.0	DKB 190x215x12/17
200	225	12	17.0	DKB 200x225x12/17
250	275	12	17.0	DKB 250x275x12/17

SPEC SEAL Seals & O-rings Specialist

Metal Case Wiper - J

Wipers

J (Inch Size)

J

Material	Temp. (°c)	Speed (m/s)
PU-Metal	-35 +95	0.5

- Space saving construction.
- Low cost, economical solution.
- Greater durability due to exceptional resistance to abrasion.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Nominal Rod Dia.	Rod Dia. d	Groove Dia. D	Groove Width L	Reference (For order processing)
1/2	.498	1.000	.250	J-0500
5/8	.623	1.125	.312	J-0625
3/4	.748	1.250	.312	J-0750
7/8	.873	1.375	.312	J-0875
1	.998	1.500	.312	J-1000
1-1/8	1.123	1.625	.312	J-1125
1-1/4	1.248	1.750	.312	J-1250
1-3/8	1.373	1.875	.312	J-1375
1-1/2	1.498	2.000	.312	J-1500
1-5/8	1.623	2.125	.312	J-1625
1-3/4	1.748	2.250	.312	J-1750
1-7/8	1.873	2.375	.312	J-1875
2	1.998	2.500	.312	J-2000
2-1/8	2.123	2.625	.312	J-2125
2-1/4	2.248	2.750	.312	J-2250
2-3/8	2.373	2.875	.312	J-2375
2-1/2	2.498	3.000	.312	J-2500
2-5/8	2.623	3.125	.312	J-2625
2-3/4	2.748	3.250	.312	J-2750
2-7/8	2.873	3.375	.312	J-2875
3	2.997	3.500	.312	J-3000
3-1/8	3.122	3.750	.312	J-3125
3-1/4	3.247	3.875	.312	J-3250
3-3/8	3.372	4.000	.312	J-3375
3-1/2	3.497	4.125	.312	J-3500
3-5/8	3.622	4.250	.312	J-3625
3-3/4	3.747	4.375	.312	J-3750
3-7/8	3.872	4.500	.312	J-3875
4	3.997	4.625	.312	J-4000
4-1/8	4.122	4.750	.312	J-4125
4-1/4	4.247	4.875	.312	J-4250
4-3/8	4.372	5.000	.312	J-4375
4-1/2	4.497	5.125	.312	J-4500
4-3/4	4.747	5.375	.312	J-4750
5	4.997	5.625	.312	J-5000
5-1/4	5.247	5.875	.312	J-5250
5-1/2	5.497	6.125	.375	J-5500
5-3/4	5.747	6.375	.375	J-5750
6	5.997	6.625	.375	J-6000
6-3/4	6.747	7.375	.375	J-6750

Wipers

PW CORD (Metric Size)

PW CORD

Material	Temp. (°c)	Speed (m/s)
NBR	-30 +110	1

- Large cross section endless type.
- Can fit any sizes of rod from 300 mm.
- No adhesive needed.
- High wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Rod Dia.	Groove Dia.	Bore Dia.	Groove Width
d	D	D1	L
> 300	d + 20	d + 12	10.5

The Calculation when cutting PW Cord from rolls, length (A) is calculated as follows :

$$A = \pi \times (\varnothing d + 20)$$

A = Length to cut
d = Rod diameter

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Wear Rings

Design	Ref.	Material	Dynamic Load (N/mm²)	Temp. (°C)	Speed (m/s)	Dim mm.	Dim inch	Page
	SP-55	PTFE+Bronze	Max. 15	-156 +260	15	●		382
	SP-30	PTFE+Carbon	Max. 15	-190 +315	15	●		383
	SP-118	Polyester Fabric	50	-50 +120	1	●		384
	SP-119	Polyester Fabric	50	-50 +120	1	●		384
	SP-506	Polyester Fabric	53	-40 +120	5	●	●	385
	PORT	Polyacetal	30	-30 +100	1	●		388
	EV85	Phenolic Resin	60	-30 +120	1.5	●		396
	F1	Polyamide	-	-40 +100	5	●		402
	WPB	Polyamide	21	-25 +80	1	●		404
	WRB	Polyamide	21	-25 +80	1	●		406
	W2	Molygard	-	-30 +110	0.8		●	408

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Guide Ring Tape

Wear Rings

SP-55 (Metric Size)

(Size list on page 386)

SP-55

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
PTFE+Bronce	Max. 15	-156 +216	15

- Good lubrication and wear performance.
- Self lubricating.
- Low friction value.
- Excellent resistance to chemicals.
- High wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Bore/Rod	Clearance F	
D/d	F min.	F max.
8 - 20	0.20	0.30
20 - 100	0.25	0.40
101 - 250	0.30	0.60
251 - 500	0.40	0.80
501 - 1000	0.50	1.10

Wear Rings

SP-30 (Metric Size)

(Size list on page 386)

SP-30

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
PTFE+Carbon	Max. 15	-190 +315	15

- Good lubrication and wear performance.
- Self lubricating.
- Low friction value.
- Excellent resistance to chemicals.
- High wear resistance.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Bore/Rod	Clearance F	
D/d	F min.	F max.
8 - 20	0.20	0.30
20 - 100	0.25	0.40
101 - 250	0.30	0.60
251 - 500	0.40	0.80
501 - 1000	0.50	1.10

Guide Ring Tape

Wear Rings

SP-118, SP-119 (Metric Size)

(Size list on page 386)

SP-118, SP-119

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
Polyester Fabric	50	-50 +120	1

- Good sliding and dry running properties.
- High wear resistance.
- Good wiping effect.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Bore/Rod	Clearance F	
D/d	F min.	F max.
8 - 20	0.20	0.30
20 - 100	0.25	0.40
101 - 250	0.30	0.60
251 - 500	0.40	0.80
501 - 1000	0.50	1.10

Wear Rings

SP-506 (Metric & Inch Size)

(Size list on page 386)

SP-506

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
Polyester Fabric	53	-40 +120	5

- Good sliding properties.
- Excellent for high side-load.
- High wear resistance.
- Long service life.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

Bore/Rod	Clearance F	
D/d	F min.	F max.
8 - 20	0.20	0.30
20 - 100	0.25	0.40
101 - 250	0.30	0.60
251 - 500	0.40	0.80
501 - 1000	0.50	1.10

Guide Ring Tape

(Metric Size)

Groove Dia.			Wear Ring Width	Wear Ring Thickness	Reference (For order processing)
d	D	L	H	T	
D - 3	d + 3	4.2	4.0	1.5	SP-XX-15042
D - 4	d + 4	4.2	4.0	2.0	SP-XX-20042
D - 5	d + 5	5.6	5.2	2.5	SP-506-25056
D - 4	d + 4	5.7	5.5	2.0	SP-XX-20057
D - 5	d + 5	5.7	5.5	2.5	SP-XX-25057
D - 4	d + 4	6.3	6.1	2.0	SP-XX-20063
D - 5	d + 5	6.3	6.1	2.5	SP-XX-25063
D - 4	d + 4	8.1	7.9	2.0	SP-XX-20081
D - 5	d + 5	8.1	7.9	2.5	SP-XX-25081
D - 6	d + 6	8.1	7.9	3.0	SP-XX-30081
D - 8	d + 8	8.1	7.9	4.0	SP-XX-40081
D - 4	d + 4	9.7	9.5	2.0	SP-XX-20097
D - 5	d + 5	9.7	9.5	2.5	SP-XX-25097
D - 6	d + 6	9.7	9.5	3.0	SP-XX-30097
D - 8	d + 8	9.7	9.5	4.0	SP-XX-40097
D - 5	d + 5	12.7	12.5	2.5	SP-XX-25127
D - 6.2	d + 6.2	12.7	12.5	3.1	SP-XX-31127
D - 5	d + 5	13.0	12.6	2.5	SP-506-25130
D - 3	d + 3	15.0	14.8	1.5	SP-XX-15150
D - 4	d + 4	15.0	14.8	2.0	SP-XX-20150
D - 5	d + 5	15.0	14.8	2.5	SP-XX-25150
D - 6	d + 6	15.0	14.8	3.0	SP-XX-30150
D - 6.2	d + 6.2	19.0	18.5	3.1	SP-XX-31190
D - 6	d + 6	20.0	19.5	3.0	SP-XX-30200
D - 5	d + 5	20.0	19.8	2.5	SP-XX-25200
D - 6	d + 6	25.0	24.5	3.0	SP-XX-30250
D - 5	d + 5	25.0	24.6	2.5	SP-506-25250
D - 5	d + 5	25.0	24.8	2.5	SP-XX-25250
D - 6	d + 6	30.0	29.5	3.0	SP-XX-30300
D - 5	d + 5	30.0	29.8	2.5	SP-XX-25300
D - 6	d + 6	40.0	39.5	3.0	SP-XX-30400
D - 6	d + 6	50.0	49.5	3.0	SP-XX-30500

* For order processing, if you need material PTFE+Bronze for ring width 4.0 mm., thickness 1.5 mm. The computer code will be **SP-55-15042**

Recommended Ring Gap

Bore Range mm.	Rod Range mm.	Z Gap mm.
10 - 24.9	8 - 19.9	1.0 - 1.5
25 - 44.9	20 - 39.9	1.5 - 2.0
45 - 79.9	40 - 74.9	2.0 - 4.0
80 - 129.9	75 - 124.9	3.0 - 5.0
130 - 349.9	125 - 299.9	4.0 - 6.0
350 - 1000.0	300 - 1000.0	5.0 - 8.0

The Calculation when cutting from rolls, length (A) is calculated as follows :

For Piston $A = \pi \times (D - T) - Z$

For Rod $A = \pi \times (d + T) - Z$

A = Length to cut
D = Bore diameter
d = Rod diameter
T = Thickness of selected tape
Z = Gap

(Inch Size)

Groove Dia.			Wear Ring Width	Wear Ring Thickness	Reference (For order processing)
d	D	L	H	T	
D - 0.25	d + 0.25	0.375	0.365	0.125	SP-506-1250375
D - 0.25	d + 0.25	0.500	0.496	0.125	SP-506-1250500
D - 0.25	d + 0.25	0.625	0.620	0.125	SP-506-1250625
D - 0.25	d + 0.25	0.750	0.737	0.125	SP-506-1250750
D - 0.25	d + 0.25	1.000	0.988	0.125	SP-506-1251000

* For order processing, if you need material Polyester Fabric for ring width 0.365 inch., thickness 0.125 mm. The computer code will be SP-506-1250375

Recommended Ring Gap

Bore Range inch.	Rod Range inch.	Z Gap inch.
0.393 - 0.980	0.315 - 0.783	0.039 - 0.059
0.981 - 1.768	0.784 - 1.572	0.059 - 0.079
1.769 - 3.146	1.573 - 2.952	0.079 - 0.157
3.147 - 5.115	2.953 - 4.920	0.118 - 0.197
5.116 - 13.776	4.921 - 11.810	0.157 - 0.236
13.777 - 40.00	11.811 - 40.00	0.197 - 0.315

The Calculation when cutting from rolls, length (A) is calculated as follows :

For Piston $A = \pi \times (D - T) - Z$

For Rod $A = \pi \times (d + T) - Z$

A = Length to cut
D = Bore diameter
d = Rod diameter
T = Thickness of selected tape
Z = Gap

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Guide Ring - PORT

Wear Rings

PORT (Metric Size)

PORT

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
Polyacetal	30	-30 +100	1

- High compressive strength.
- High wear resistance.
- Easy installation on pistons and rods.
- High stiffness.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
12.0	16.0	9.6	9.4	PORT 012-016-9.6/2.0	30.0	35.0	8.2	8.0	PORT 030-035-8.2/2.5
14.0	18.0	9.6	9.4	PORT 014-018-9.6/2.0	30.0	35.0	9.7	9.5	PORT 030-035-9.7/2.5
15.0	19.0	9.6	9.4	PORT 015-019-9.6/2.0	30.0	35.0	15.2	15.0	PORT 030-035-15.2/2.5
16.0	19.0	6.0	5.8	PORT 016-019-6.0/1.5	30.0	35.0	19.4	19.2	PORT 030-035-19.4/2.5
16.0	19.1	4.0	3.8	PORT 016-019.1-4/1.5	30.0	36.0	9.5	9.3	PORT 030-036-9.5/3.0
16.0	20.0	9.6	9.4	PORT 016-020-9.6/2.0	31.0	35.0	8.0	7.8	PORT 031-035-8.0/2.0
18.0	22.0	9.6	9.4	PORT 018-022-9.6/2.0	31.0	35.0	9.6	9.5	PORT 031-035-9.6/2.0
19.0	25.0	9.6	9.4	PORT 019-025-9.6/3.0	31.0	36.0	11.4	11.2	PORT 031-036-11.4/2.5
20.0	23.1	4.0	3.8	PORT 020-023.1-4/1.5	32.0	35.0	9.7	9.5	PORT 032-035-9.7/1.5
20.0	24.0	9.6	9.4	PORT 020-024-9.6/2.0	32.0	35.1	4.0	3.8	PORT 032-035.1-4/1.5
20.0	25.0	5.6	5.4	PORT 020-025-5.6/2.5	32.0	36.0	9.7	9.5	PORT 032-036-9.7/2.0
20.0	25.0	9.7	9.5	PORT 020-025-9.7/2.5	32.0	37.0	5.6	5.4	PORT 032-037-5.6/2.5
20.0	26.0	4.0	3.8	PORT 020-026-4.0/3.0	32.0	37.0	9.7	9.5	PORT 032-037-9.7/2.5
20.0	26.0	9.7	9.5	PORT 020-026-9.7/3.0	32.0	37.0	11.2	11.0	PORT 032-037-11.2/2.5
21.0	25.0	8.0	7.8	PORT 021-025-8.0/2.0	32.0	38.0	9.6	9.4	PORT 032-038-9.6/3.0
21.0	25.0	8.2	8.0	PORT 021-025-8.2/2.0	32.0	38.0	10.0	9.8	PORT 032-038-10/3.0
21.0	25.0	9.6	9.4	PORT 021-025-9.6/2.0	33.0	36.0	4.0	3.8	PORT 033-036-4.0/1.5
22.0	25.0	4.2	4.0	PORT 022-025-4.2/1.5	33.0	37.0	8.0	7.8	PORT 033-037-8.0/2.0
22.0	26.0	9.6	9.4	PORT 022-026-9.6/2.0	34.0	38.0	9.6	9.4	PORT 034-038-9.6/2.0
22.0	27.0	6.3	6.1	PORT 022-027-6.3/2.5	34.0	40.0	9.6	9.4	PORT 034-040-9.6/3.0
24.0	28.0	9.6	9.4	PORT 024-028-9.6/2.0	35.0	39.0	6.5	6.3	PORT 035-039-6.5/2.0
25.0	28.1	4.0	3.8	PORT 025-028.1-4/1.5	35.0	39.0	8.0	7.8	PORT 035-039-8.0/2.0
25.0	29.0	9.6	9.4	PORT 025-029-9.6/2.0	35.0	39.0	9.7	9.5	PORT 035-039-9.7/2.0
25.0	30.0	5.6	5.4	PORT 025-030-5.6/2.5	35.0	39.0	12.8	12.5	PORT 035-039-12.8/2.0
25.0	30.0	9.7	9.5	PORT 025-030-9.7/2.5	35.0	39.4	6.0	5.8	PORT 035-039.4-6/2.2
25.0	31.0	9.6	9.4	PORT 025-031-9.6/3.0	35.0	40.0	4.5	4.3	PORT 035-040-4.5/2.5
26.0	30.0	9.6	9.4	PORT 026-030-9.6/2.0	35.0	40.0	5.6	5.4	PORT 035-040-5.6/2.5
26.0	32.0	10.0	9.8	PORT 026-032-10/3.0	35.0	40.0	6.3	6.1	PORT 035-040-6.3/2.5
27.0	32.0	5.6	5.4	PORT 027-032-5.6/2.5	35.0	40.0	9.7	9.5	PORT 035-040-9.7/2.5
28.0	31.0	5.6	5.4	PORT 028-031-5.6/1.5	35.0	40.0	9.9	9.7	PORT 035-040-9.9/2.5
28.0	32.0	9.7	9.5	PORT 028-032-9.7/2.0	35.0	40.0	15.2	15.0	PORT 035-040-15.2/2.5
28.0	33.0	5.6	5.4	PORT 028-033-5.6/2.5	35.0	41.0	9.6	9.4	PORT 035-041-9.6/3.0
28.0	33.0	6.4	6.2	PORT 028-033-6.4/2.5	35.0	41.0	12.7	12.5	PORT 035-041-12.7/3.0
28.0	34.0	9.7	9.5	PORT 028-034-9.7/3.0	35.0	41.0	19.7	19.5	PORT 035-041-19.7/3.0
28.9	32.0	4.0	3.8	PORT 028.9-032-4.0/1.5	35.0	41.0	20.0	19.8	PORT 035-041-20/3.0
29.0	35.0	9.6	9.4	PORT 029-035-9.6/3.0	36.0	40.0	5.0	4.8	PORT 036-040-5.0/2.0
29.0	35.0	10.0	9.8	PORT 029-035-10/3.0	36.0	40.0	8.0	7.8	PORT 036-040-8.0/2.0
30.0	34.0	9.7	9.5	PORT 030-034-9.7/2.0	36.0	40.0	9.7	9.5	PORT 036-040-9.7/2.0
30.0	35.0	5.6	5.4	PORT 030-035-5.6/2.5	36.0	41.0	5.6	5.4	PORT 036-041-5.6/2.5
30.0	35.0	6.3	6.1	PORT 030-035-6.3/2.5	36.0	41.0	6.3	6.1	PORT 036-041-6.3/2.5

Guide Ring - PORT

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)
36.0	41.0	9.7	9.5	PORT 036-041-9.7/2.5	46.0	50.0	9.7	9.5	PORT 046-050-9.7/2.0
36.0	42.0	9.6	9.4	PORT 036-042-9.6/3.0	46.0	50.0	10.0	9.8	PORT 046-050-10/2.0
36.0	42.0	9.8	9.6	PORT 036-042-9.8/3.0	46.0	50.0	10.2	10.0	PORT 046-050-10.2/2.0
37.0	42.0	6.0	9.6	PORT 037-042-6.0/2.5	46.0	50.0	15.2	15.0	PORT 046-050-15.2/2.0
38.0	41.0	21.0	20.8	PORT 038-041-21/1.5	46.0	52.0	9.6	9.4	PORT 046-052-9.6/3.0
38.0	42.0	4.2	4.0	PORT 038-042-4.2/2.0	47.0	53.0	13.0	2.8	PORT 047-053-13/3.0
38.0	42.0	9.6	9.4	PORT 038-042-9.6/2.0	48.0	53.0	13.0	12.8	PORT 048-053-13/2.5
39.0	44.0	15.4	15.2	PORT 039-044-15.4/2.5	48.0	54.0	9.7	9.5	PORT 048-054-9.7/3.0
39.0	45.0	9.6	9.4	PORT 039-045-9.6/3.0	49.0	55.0	9.6	9.4	PORT 049-055-9.6/3.0
39.0	45.0	10.0	9.8	PORT 039-045-10/3.0	49.0	55.0	10.0	9.8	PORT 049-055-10/3.0
40.0	44.0	6.5	6.3	PORT 040-044-6.5/2.0	49.0	55.0	12.7	12.5	PORT 049-055-12.7/3.0
40.0	44.0	9.7	9.5	PORT 040-044-9.7/2.0	50.0	55.0	5.6	5.4	PORT 050-055-5.6/2.5
40.0	45.0	5.0	4.8	PORT 040-045-5.0/2.5	50.0	55.0	8.2	8.0	PORT 050-055-8.2/2.5
40.0	45.0	5.6	5.4	PORT 040-045-5.6/2.5	50.0	55.0	9.7	9.5	PORT 050-055-9.7/2.5
40.0	45.0	9.7	9.5	PORT 040-045-9.7/2.5	50.0	55.0	10.0	9.8	PORT 050-055-10/2.5
40.0	45.0	10.0	9.8	PORT 040-045-10/2.5	50.0	55.0	15.2	15.0	PORT 050-055-15.2/2.5
40.0	45.0	15.2	15.0	PORT 040-045-15.2/2.5	50.0	55.0	20.2	20.0	PORT 050-055-20.2/2.5
40.0	45.0	20.2	20.0	PORT 040-045-20.2/2.5	50.0	56.0	9.7	9.5	PORT 050-056-9.7/3.0
40.0	46.0	9.6	9.4	PORT 040-046-9.6/3.0	50.0	56.0	12.7	12.5	PORT 050-056-12.7/3.0
40.0	46.0	9.8	9.6	PORT 040-046-9.8/3.0	50.25	57.16	6.1	5.9	PORT 050.25-057.16-6.1/3.5
40.0	46.0	12.7	12.5	PORT 040-046-12.7/3.0	50.8	57.15	19.25	19.05	PORT 050.8-057.15-19.25/3.1
40.0	46.0	13.0	12.8	PORT 040-046-13/3.0	51.0	55.0	9.6	9.4	PORT 051-055-9.6/2.0
41.0	45.0	9.6	9.4	PORT 041-045-9.6/2.0	51.0	55.0	10.0	9.8	PORT 051-055-10/2.0
41.0	45.0	10.2	10.0	PORT 041-045-10.2/2.5	52.0	58.0	9.6	9.4	PORT 052-058-9.6/3.0
41.0	46.0	5.6	5.4	PORT 041-046-5.6/2.5	53.0	59.0	9.6	9.4	PORT 053-059-9.6/3.0
42.0	46.0	9.6	9.4	PORT 042-046-9.6/2.0	54.0	60.0	9.6	9.4	PORT 054-060-9.6/3.0
42.0	48.0	9.6	9.4	PORT 042-048-9.6/3.0	54.0	60.0	12.7	12.5	PORT 054-060-12.7/3.0
43.0	49.0	9.6	9.4	PORT 043-049-9.6/3.0	55.0	59.0	8.0	7.8	PORT 055-059-8.0/2.0
44.0	50.0	9.6	9.4	PORT 044-050-9.6/3.0	55.0	60.0	5.6	5.4	PORT 055-060-5.6/2.5
44.0	50.0	12.7	12.5	PORT 044-050-12.7/3.0	55.0	60.0	5.8	5.6	PORT 055-060-5.8/2.5
44.45	50.8	12.7	12.5	PORT 044.45-050.8-12.7/3.1	55.0	60.0	8.2	8.0	PORT 055-060-8.2/2.5
44.45	50.8	19.25	19.05	PORT 044.45-050.8-19.25/3.1	55.0	60.0	9.7	9.5	PORT 055-060-9.7/2.5
45.0	49.0	20.0	19.8	PORT 045-049-20/2.0	55.0	60.0	9.9	9.7	PORT 055-060-9.9/2.5
45.0	50.0	5.6	5.4	PORT 045-050-5.6/2.5	55.0	60.0	15.2	15.0	PORT 055-060-15.2/2.5
45.0	50.0	9.7	9.5	PORT 045-050-9.7/2.5	55.0	60.0	20.2	20.0	PORT 055-060-20.2/2.5
45.0	50.0	10.0	9.8	PORT 045-050-10/2.5	55.0	61.0	9.7	9.5	PORT 055-061-9.7/3.0
45.0	50.0	15.2	15.0	PORT 045-050-15.2/2.5	55.0	61.0	12.7	12.5	PORT 055-061-12.7/3.0
45.0	50.0	19.4	19.2	PORT 045-050-19.4/2.5	56.0	60.0	8.1	7.9	PORT 056-060-8.1/2.0
45.0	51.0	9.7	9.5	PORT 045-051-9.7/3.0	56.0	60.0	9.6	9.4	PORT 056-060-9.6/2.0
45.0	51.0	12.7	12.5	PORT 045-051-12.7/3.0	56.0	60.0	9.8	9.6	PORT 056-060-9.8/2.0

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
56.0	60.0	10.0	9.8	PORT 056-060-10/2.0	63.0	69.0	12.7	12.5	PORT 063-069-12.7/3.0
56.0	60.0	10.2	10.0	PORT 056-060-10.2/2.0	63.0	69.0	30.5	30.0	PORT 063-069-30.5/3.0
56.0	61.0	5.6	5.4	PORT 056-061-5.6/2.5	64.0	70.0	9.6	9.4	PORT 064-070-9.6/3.0
56.0	61.0	9.7	9.5	PORT 056-061-9.7/2.5	64.0	70.0	12.7	12.5	PORT 064-070-12.7/3.0
56.0	62.0	9.6	9.4	PORT 056-062-9.6/3.0	65.0	69.0	10.0	9.8	PORT 065-069-10/2.0
56.0	62.0	12.7	12.5	PORT 056-062-12.7/3.0	65.0	70.0	5.6	5.4	PORT 065-070-5.6/2.5
56.0	62.0	20.2	20.0	PORT 056-062-20.2/3.0	65.0	70.0	7.0	6.8	PORT 065-070-7.0/2.5
57.0	63.0	9.6	9.4	PORT 057-063-9.6/3.0	65.0	70.0	9.7	9.5	PORT 065-070-9.7/2.5
57.0	63.0	10.0	9.8	PORT 057-063-10/3.0	65.0	70.0	15.0	14.7	PORT 065-070-15/2.5
57.0	63.0	12.7	12.5	PORT 057-063-12.7/3.0	65.0	70.0	15.2	15.0	PORT 065-070-15.2/2.5
57.15	63.5	12.7	12.5	PORT 057.15-063.5-12.7/3.1	65.0	71.0	12.7	12.5	PORT 065-071-12.7/3.0
57.18	62.18	19.8	19.6	PORT 057.18-062.18-19.8/2.5	66.0	70.0	10.0	9.8	PORT 066-070-10/2.0
58.0	63.0	5.6	5.4	PORT 058-063-5.6/2.5	66.0	70.0	10.2	10.0	PORT 066-070-10.2/2.0
58.0	63.0	9.7	9.5	PORT 058-063-9.7/2.5	66.0	72.0	12.8	12.6	PORT 066-072-12.8/3.0
58.0	63.0	10.0	9.8	PORT 058-063-10/2.5	67.0	72.0	5.6	5.4	PORT 067-072-5.6/2.5
58.0	64.0	12.7	12.5	PORT 058-064-12.7/3.0	68.0	74.0	12.8	12.6	PORT 068-074-12.8/3.0
59.0	63.0	9.7	9.5	PORT 059-063-9.7/2.0	69.0	75.0	9.6	9.4	PORT 069-075-9.6/3.0
59.0	63.0	10.0	9.8	PORT 059-063-10/2.0	69.0	75.0	12.7	12.5	PORT 069-075-12.7/3.0
59.0	65.0	12.7	12.5	PORT 059-065-12.7/3.0	69.85	76.2	9.52	9.32	PORT 069.85-076.2-9.52/3.1
60.0	64.0	10.0	9.8	PORT 060-064-10/2.0	69.85	76.2	19.25	19.05	PORT 069.85-076.2-19.25/3.1
60.0	64.0	10.2	10.0	PORT 060-064-10.2/2.0	70.0	74.0	15.0	14.8	PORT 070-074-15/2.0
60.0	64.0	19.5	19.3	PORT 060-064-19.5/2.0	70.0	75.0	5.6	5.4	PORT 070-075-5.6/2.5
60.0	65.0	5.6	5.4	PORT 060-065-5.6/2.5	70.0	75.0	9.7	9.5	PORT 070-075-9.7/2.5
60.0	65.0	8.2	8.0	PORT 060-065-8.2/2.5	70.0	75.0	10.0	9.8	PORT 070-075-10/2.5
60.0	65.0	9.7	9.5	PORT 060-065-9.7/2.5	70.0	75.0	15.0	14.7	PORT 070-075-15/2.5
60.0	65.0	15.2	15.0	PORT 060-065-15.2/2.5	70.0	75.0	15.2	15.0	PORT 070-075-15.2/2.5
60.0	65.0	19.4	19.2	PORT 060-065-19.4/2.5	70.0	76.0	9.6	9.4	PORT 070-076-9.6/3.0
60.0	65.0	20.2	20.0	PORT 060-065-20.2/2.5	70.0	76.0	10.2	10.0	PORT 070-076-10.2/3.0
60.0	65.0	30.0	29.5	PORT 060-065-30/2.5	70.0	76.0	12.7	12.5	PORT 070-076-12.7/3.0
60.0	66.0	9.6	9.4	PORT 060-066-9.6/3.0	70.0	76.0	19.2	19.0	PORT 070-076-19.2/3.0
60.0	66.0	9.9	9.7	PORT 060-066-9.9/3.0	70.0	76.0	25.5	25.0	PORT 070-076-25.5/3.0
60.0	66.0	12.7	12.5	PORT 060-066-12.7/3.0	70.0	76.0	27.0	26.5	PORT 070-076-27/3.0
60.0	66.0	15.0	14.8	PORT 060-066-15.0/3.0	71.0	75.0	15.0	14.8	PORT 071-075-15/2.0
61.0	66.0	9.7	9.5	PORT 061-066-9.7/2.5	71.2	76.2	20.0	19.8	PORT 071.2-076.2-19.8/2.5
62.0	65.0	19.7	19.5	PORT 062-065-19.7/1.5	72.0	78.0	12.5	12.3	PORT 072-078-12.5/3.0
62.0	65.0	20.0	19.8	PORT 062-065-20/1.5	72.0	80.0	6.2	6.0	PORT 072-080-6.2/4.0
62.0	68.0	12.7	12.5	PORT 062-068-12.7/3.0	73.0	79.0	12.8	12.6	PORT 073-079-12.8/3.0
63.0	67.0	6.5	6.3	PORT 063-067-6.5/2.0	74.0	80.0	12.7	12.5	PORT 074-080-12.7/3.0
63.0	68.0	5.6	5.4	PORT 063-068-5.6/2.5	75.0	79.0	8.0	7.8	PORT 075-079-8.0/2.0
63.0	68.0	9.7	9.5	PORT 063-068-9.7/2.5	75.0	80.0	5.6	5.4	PORT 075-080-5.6/2.5

Guide Ring - PORT

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)
75.0	80.0	8.2	8.0	PORT 075-080-8.2/2.5	86.0	90.0	15.0	14.8	PORT 086-090-15.0/2.0
75.0	80.0	9.7	9.5	PORT 075-080-9.7/2.5	86.0	92.0	12.7	12.5	PORT 086-092-12.7/3.0
75.0	80.0	10.0	9.8	PORT 075-080-10/2.5	88.0	94.0	12.8	12.6	PORT 088-094-12.8/3.0
75.0	80.0	15.0	14.7	PORT 075-080-15/2.5	88.9	93.9	19.8	19.6	PORT 088.9-093.9-19.8/2.5
75.0	80.0	19.4	19.2	PORT 075-080-19.4/2.5	89.0	95.0	12.7	12.5	PORT 089-095-12.7/3.0
75.0	80.0	15.2	15.0	PORT 075-080-15.2/2.5	90.0	94.0	15.0	14.8	PORT 090-094-15/2.0
75.0	81.0	12.7	12.5	PORT 075-081-12.7/3.0	90.0	94.0	15.2	15.0	PORT 090-094-15.2/2.0
75.0	81.0	19.2	19.0	PORT 075-081-19.2/3.0	90.0	95.0	5.8	5.6	PORT 090-095-5.8/2.5
76.0	80.0	10.0	9.8	PORT 076-080-10/2.0	90.0	95.0	9.7	9.5	PORT 090-095-9.7/2.5
76.0	80.0	15.0	14.8	PORT 076-080-15/2.0	90.0	95.0	10.0	9.8	PORT 090-095-10/2.5
76.0	81.0	9.7	9.5	PORT 076-081-9.7/2.5	90.0	95.0	15.0	14.7	PORT 090-095-15/2.5
76.0	82.0	12.8	12.6	PORT 076-082-12.8/3.0	90.0	95.0	15.2	15.0	PORT 090-095-15.2/2.5
76.5	82.5	12.7	12.5	PORT 076.5-082.5-12.7/3.0	90.0	95.0	19.4	19.2	PORT 090-095-19.4/2.5
78.0	84.0	12.8	12.6	PORT 078-084-12.8/3.0	90.0	96.0	12.7	12.5	PORT 090-096-12.7/3.0
79.0	85.0	12.7	12.5	PORT 079-085-12.7/3.0	90.0	96.0	14.0	13.8	PORT 090-096-14/3.0
80.0	84.0	9.5	9.3	PORT 080-084-9.5/2.0	90.0	96.0	19.2	19.0	PORT 090-096-19.2/3.0
80.0	85.0	5.6	5.4	PORT 080-085-5.6/2.5	90.0	96.0	30.0	29.5	PORT 090-096-30/3.0
80.0	85.0	9.7	9.5	PORT 080-085-9.7/2.5	90.0	96.0	30.5	30.0	PORT 090-096-30.5/3.0
80.0	85.0	10.0	9.8	PORT 080-085-10/2.5	92.0	97.0	9.7	9.5	PORT 092-097-9.7/2.5
80.0	85.0	12.8	12.6	PORT 080-085-12.8/2.5	94.0	100.0	12.7	12.5	PORT 094-100-12.7/3.0
80.0	85.0	15.0	14.7	PORT 080-085-15/2.5	94.0	100.0	13.0	12.8	PORT 094-100-13/3.0
80.0	85.0	15.2	15.0	PORT 080-085-15.2/2.5	94.0	100.0	30.0	29.5	PORT 094-100-30/3.0
80.0	85.0	19.7	19.5	PORT 080-085-19.7/2.5	95.0	100.0	5.6	5.4	PORT 095-100-5.6/2.5
80.0	85.0	20.0	19.8	PORT 080-085-20/2.5	95.0	100.0	9.7	9.5	PORT 095-100-9.7/2.5
80.0	86.0	12.7	12.5	PORT 080-086-12.7/3.0	95.0	100.0	15.0	14.7	PORT 095-100-15/2.5
80.0	86.0	15.0	14.8	PORT 080-086-15/3.0	95.0	100.0	15.2	15.0	PORT 095-100-15.2/2.5
80.0	86.0	19.2	19.0	PORT 080-086-19.2/3.0	95.0	100.0	20.0	19.8	PORT 095-100-20/2.5
80.0	86.0	24.7	24.4	PORT 080-086-24.7/3.0	95.0	101.0	12.7	12.5	PORT 095-101-12.7/3.0
80.0	86.0	25.3	24.8	PORT 080-086-25.3/3.0	95.0	101.0	19.2	19.0	PORT 095-101-19.2/3.0
80.0	86.0	30.5	30.0	PORT 080-086-30.5/3.0	96.0	100.0	10.0	9.8	PORT 096-100-10/2.0
82.0	88.0	12.7	12.5	PORT 082-088-12.7/3.0	96.0	100.0	15.0	14.8	PORT 096-100-15/2.0
84.0	90.0	10.0	9.8	PORT 084-090-10/3.0	99.0	105.0	12.7	12.5	PORT 099-105-12.7/3.0
84.0	90.0	12.7	12.5	PORT 084-090-12.7/3.0	99.0	105.0	19.2	19.0	PORT 099-105-19.2/3.0
85.0	90.0	5.7	5.5	PORT 085-090-5.7/2.5	100.0	104.0	15.2	15.0	PORT 100-104-15.2/2.0
85.0	90.0	9.7	9.5	PORT 085-090-9.7/2.5	100.0	105.0	5.6	5.4	PORT 100-105-5.6/2.5
85.0	90.0	9.9	9.7	PORT 085-090-9.9/2.5	100.0	105.0	9.7	9.5	PORT 100-105-9.7/2.5
85.0	90.0	15.0	14.7	PORT 085-090-15/2.5	100.0	105.0	15.0	14.7	PORT 100-105-15/2.5
85.0	90.0	15.2	15.0	PORT 085-090-15.2/2.5	100.0	105.0	15.2	15.0	PORT 100-105-15.2/2.5
85.0	91.0	12.7	12.5	PORT 085-091-12.7/2.5	100.0	106.0	12.7	12.5	PORT 100-106-12.7/3.0
85.0	91.0	24.3	24.0	PORT 085-091-24.3/3.0	100.0	106.0	19.2	19.0	PORT 100-106-19.0/3.0

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
101.0	105.0	15.2	15.0	PORT 101-105-15.2/2.0	119.0	125.0	19.2	19.0	PORT 119-125-19.2/3.0
101.0	105.0	20.0	19.8	PORT 101-105-20/2.0	120.0	125.0	5.6	5.4	PORT 120-125-5.6/2.5
103.0	108.0	20.0	19.8	PORT 103-108-20/2.5	120.0	125.0	9.7	9.5	PORT 120-125-9.7/2.5
104.0	110.0	10.2	10.0	PORT 104-110-10.2/3.0	120.0	125.0	15.0	14.7	PORT 120-125-15/2.5
104.0	110.0	12.7	12.5	PORT 104-110-12.7/3.0	120.0	125.0	15.2	15.0	PORT 120-125-15.2/2.5
104.0	110.0	19.2	19.0	PORT 104-110-19.2/3.0	120.0	126.0	12.7	12.5	PORT 120-126-12.7/3.0
104.0	110.0	25.4	25.1	PORT 104-110-25.4/3.0	120.0	126.0	19.2	19.0	PORT 120-126-19.2/3.0
105.0	110.0	8.2	8.0	PORT 105-110-8.2/2.5	120.0	126.0	25.4	25.1	PORT 120-126-25.4/3.0
105.0	110.0	9.7	9.5	PORT 105-110-9.7/2.5	122.0	127.0	9.7	9.5	PORT 122-127-9.7/2.5
105.0	110.0	10.0	9.8	PORT 105-110-10/2.5	122.0	127.0	19.4	19.2	PORT 122-127-19.4/2.5
105.0	110.0	15.0	14.7	PORT 105-110-15/2.5	123.0	129.0	12.8	12.6	PORT 123-129-12.8/3.0
105.0	110.0	17.0	16.8	PORT 105-110-17/2.5	124.0	130.0	12.7	12.5	PORT 124-130-12.7/3.0
105.0	110.0	19.4	19.2	PORT 105-110-19.4/2.5	124.0	130.0	19.2	19.0	PORT 124-130-19.2/3.0
105.0	111.0	12.7	12.5	PORT 105-111-12.7/3.0	125.0	130.0	7.2	7.0	PORT 125-130-7.2/2.5
105.0	111.0	19.2	19.0	PORT 105-111-19.2/3.0	125.0	130.0	15.0	14.7	PORT 125-130-15/2.5
105.0	115.0	17.2	17.0	PORT 105-115-17.2/5.0	125.0	130.0	15.2	15.0	PORT 125-130-15.2/2.5
106.0	110.0	15.0	14.8	PORT 106-110-15/2.0	125.0	130.0	16.0	15.8	PORT 125-130-16/2.5
106.0	110.0	20.0	19.8	PORT 106-110-20/2.0	125.0	131.0	12.7	12.5	PORT 125-131-12.7/3.0
109.0	115.0	12.7	12.5	PORT 109-115-12.7/3.0	125.0	131.0	19.2	19.0	PORT 125-131-19.2/3.0
109.0	115.0	19.2	19.0	PORT 109-115-19.2/3.0	129.0	135.0	12.8	12.6	PORT 129-135-12.8/3.0
109.0	115.0	10.0	9.8	PORT 109-115-10/3.0	129.0	135.0	19.2	19.0	PORT 129-135-19.2/3.0
110.0	115.0	9.7	9.5	PORT 110-115-9.7/2.5	130.0	135.0	9.7	9.5	PORT 130-135-9.7/2.5
110.0	115.0	15.0	14.7	PORT 110-115-15/2.5	130.0	135.0	15.0	14.7	PORT 130-135-15/2.5
110.0	115.0	20.2	20.0	PORT 110-115-20.2/2.5	130.0	136.0	12.7	12.5	PORT 130-136-12.7/3.0
110.0	115.0	25.0	24.7	PORT 110-115-25/2.5	130.0	136.0	19.2	19.0	PORT 130-136-19.2/3.0
110.0	116.0	12.7	12.5	PORT 110-116-12.7/3.0	130.0	136.0	25.4	25.1	PORT 130-136-25.4/3.0
110.0	116.0	14.0	13.8	PORT 110-116-14/3.0	132.0	136.0	7.7	7.5	PORT 132-136-7.7/2.0
110.0	116.0	19.2	19.0	PORT 110-116-19.2/3.0	134.0	140.0	12.7	12.5	PORT 134-140-12.7/3.0
110.0	116.0	25.4	25.1	PORT 110-116-25.4/3.0	134.0	140.0	20.0	19.8	PORT 134-140-20/3.0
114.0	119.0	15.0	14.8	PORT 114-119-15/2.5	134.0	140.0	25.4	25.1	PORT 134-140-25.4/3.0
114.0	120.0	12.7	12.5	PORT 114-120-12.7/3.0	135.0	140.0	9.7	9.5	PORT 135-140-9.7/2.5
115.0	120.0	9.7	9.5	PORT 115-120-9.7/2.5	135.0	140.0	15.0	14.7	PORT 135-140-15/2.5
115.0	120.0	15.0	14.7	PORT 115-120-15/2.5	135.0	140.0	15.2	15.0	PORT 135-140-15.2/2.5
115.0	121.0	12.7	12.5	PORT 115-121-12.7/3.0	135.0	140.0	16.0	15.8	PORT 135-140-16/2.5
115.0	121.0	19.2	19.0	PORT 115-121-19.2/3.0	135.0	141.0	12.7	12.5	PORT 135-141-12.7/3.0
115.0	121.0	25.4	25.1	PORT 115-121-25.4/3.0	136.0	140.0	12.7	12.5	PORT 136-140-12.7/2.0
119.0	125.0	12.7	12.5	PORT 119-125-12.7/3.0	136.0	140.0	20.0	19.8	PORT 136-140-20/2.0
119.0	125.0	15.0	14.8	PORT 119-125-15/3.0	139.0	145.0	19.2	19.0	PORT 139-145-19.2/3.0
119.0	125.0	15.2	15.0	PORT 119-125-15.2/3.0	139.0	145.0	12.8	12.6	PORT 139-145-12.8/3.0
119.0	125.0	16.0	15.8	PORT 119-125-16/3.0	140.0	145.0	20.0	19.8	PORT 140-145-20/2.5

Guide Ring - PORT

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
140.0	145.0	15.2	15.0	PORT 140-145-15.2/2.5	160.0	166.0	25.4	25.2	PORT 160-166-25.4/3.0
140.0	145.0	25.0	24.5	PORT 140-145-25/2.5	160.0	166.0	31.7	31.2	PORT 160-166-31.7/3.0
140.0	146.0	12.7	12.5	PORT 140-146-12.7/3.0	164.0	170.0	19.2	19.0	PORT 164-170-19.2/3.0
140.0	146.0	19.2	19.0	PORT 140-146-19.2/3.0	165.0	170.0	15.0	14.7	PORT 165-170-15/2.5
140.0	146.0	25.4	25.2	PORT 140-146-25.4/3.0	165.0	170.0	25.0	24.5	PORT 165-170-25/2.5
140.0	146.0	31.7	31.5	PORT 140-146-31.7/3.0	165.0	171.0	19.2	19.0	PORT 165-171-19.2/3.0
141.0	147.0	12.8	12.6	PORT 141-147-12.8/3.0	169.0	175.0	12.7	12.5	PORT 169-175-12.7/3.0
143.0	149.0	12.8	12.6	PORT 143-149-12.8/3.0	169.0	175.0	19.2	19.0	PORT 169-175-19.2/3.0
144.0	150.0	12.7	12.5	PORT 144-150-12.7/3.0	170.0	175.0	15.0	14.7	PORT 170-175-15/2.5
144.0	150.0	19.2	19.0	PORT 144-150-19.2/3.0	170.0	175.0	15.2	15.0	PORT 170-175-15.2/2.5
145.0	150.0	15.0	14.7	PORT 145-150-15/2.5	170.0	175.0	25.0	24.5	PORT 170-175-25/2.5
145.0	150.0	16.0	15.8	PORT 145-150-16/2.5	170.0	176.0	19.2	19.0	PORT 170-176-19.2/3.0
145.0	150.0	25.0	24.5	PORT 145-150-25/2.5	174.0	180.0	13.0	12.8	PORT 174-180-13.0/3.0
145.0	151.0	12.7	12.5	PORT 145-151-12.7/3.0	174.0	180.0	19.2	19.0	PORT 174-180-19.2/3.0
146.0	150.0	10.2	10.0	PORT 146-150-10.2/2.0	174.0	180.0	31.7	31.2	PORT 174-180-31.7/3.0
149.0	155.0	19.2	19.0	PORT 149-155-19.2/3.0	175.0	180.0	9.7	9.5	PORT 175-180-9.7/2.5
150.0	154.0	15.2	15.0	PORT 150-154-15.0/2.0	175.0	180.0	15.0	14.7	PORT 175-180-15/2.5
150.0	155.0	15.0	14.7	PORT 150-155-15/2.5	175.0	180.0	25.0	24.5	PORT 175-180-25/2.5
150.0	155.0	15.2	15.0	PORT 150-155-15.2/2.5	175.0	181.0	19.2	19.0	PORT 175-181-19.2/3.0
150.0	155.0	25.0	24.5	PORT 150-155-25/2.5	176.0	180.0	25.0	24.5	PORT 176-180-25/2.0
150.0	155.0	25.3	24.8	PORT 150-155-25.3/2.5	179.0	185.0	19.2	19.0	PORT 179-185-19.2/3.0
150.0	156.0	12.7	12.5	PORT 150-156-12.7/3.0	179.0	185.0	25.4	25.1	PORT 179-185-25.4/3.0
150.0	156.0	19.2	19.0	PORT 150-156-19.2/3.0	180.0	185.0	15.0	14.7	PORT 180-185-15/2.5
150.0	156.0	25.4	25.1	PORT 150-156-25.4/3.0	180.0	185.0	15.2	15.0	PORT 180-185-15.2/2.5
150.0	156.0	31.7	31.2	PORT 150-156-31.7/3.0	180.0	185.0	25.0	24.5	PORT 180-185-25/2.5
150.0	160.0	35.3	34.8	PORT 150-160-35.3/5.0	180.0	186.0	19.2	19.0	PORT 180-186-19.2/3.0
154.0	160.0	12.7	12.5	PORT 154-160-12.7/3.0	180.0	186.0	25.0	24.5	PORT 180-186-25/3.0
154.0	160.0	19.2	19.0	PORT 154-160-19.2/3.0	180.0	186.0	25.4	25.1	PORT 180-186-25.4/3.0
155.0	160.0	15.0	14.7	PORT 155-160-15/2.5	180.0	186.0	31.7	31.2	PORT 180-186-31.7/3.0
155.0	160.0	15.2	15.0	PORT 155-160-15.2/2.5	184.0	190.0	19.2	19.0	PORT 184-190-19.2/3.0
155.0	160.0	16.0	15.8	PORT 155-160-16/2.5	185.0	190.0	15.0	14.7	PORT 185-190-15/2.5
155.0	160.0	25.0	24.5	PORT 155-160-25/2.5	185.0	190.0	25.0	24.5	PORT 185-190-25/2.5
155.0	161.0	19.2	19.0	PORT 155-161-19.2/3.0	185.0	191.0	19.2	19.0	PORT 185-191-19.2/3.0
158.0	164.0	13.0	12.8	PORT 158-164-13/3.0	189.0	195.0	19.2	19.0	PORT 189-195-19.2/3.0
159.0	165.0	19.2	19.0	PORT 159-165-19.2/3.0	190.0	195.0	15.0	14.7	PORT 190-195-15/2.5
160.0	165.0	15.0	14.7	PORT 160-165-15/2.5	190.0	195.0	15.2	15.0	PORT 190-195-15.2/2.5
160.0	165.0	15.2	15.0	PORT 160-165-15.2/2.5	190.0	195.0	25.0	24.5	PORT 190-195-25/2.5
160.0	165.0	25.0	24.5	PORT 160-165-25/2.5	190.0	196.0	19.2	19.0	PORT 190-196-19.2/3.0
160.0	166.0	12.7	12.5	PORT 160-166-12.7/3.0	190.0	198.0	30.0	29.5	PORT 190-198-30/4.0
160.0	166.0	19.1	18.9	PORT 160-166-19.1/3.0	194.0	200.0	19.2	19.0	PORT 194-200-19.2/3.0

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
194.0	200.0	25.4	25.1	PORT 194-200-25.4/3.0	239.0	245.0	19.2	19.0	PORT 239-245-19.2/3.0
194.0	200.0	31.7	31.2	PORT 194-200-31.7/3.0	240.0	245.0	25.0	24.5	PORT 240-245-25/2.5
195.0	200.0	15.2	15.0	PORT 195-200-15.2/2.5	240.0	246.0	19.2	19.0	PORT 240-246-19.2/3.0
195.0	200.0	25.0	24.5	PORT 195-200-25/2.5	244.0	250.0	19.2	19.0	PORT 244-250-19.2/3.0
195.0	201.0	19.2	19.0	PORT 195-201-19.2/3.0	245.0	250.0	25.0	24.5	PORT 245-250-25/2.5
196.0	200.0	25.0	24.5	PORT 196-200-25/2.0	245.0	251.0	19.2	19.0	PORT 245-251-19.2/3.0
199.0	205.0	19.2	19.0	PORT 199-205-19.2/3.0	249.0	255.0	19.2	19.0	PORT 249-255-19.2/3.0
200.0	205.0	15.2	15.0	PORT 200-205-15.2/2.5	250.0	255.0	25.0	24.5	PORT 250-255-25/2.5
200.0	205.0	25.0	24.5	PORT 200-205-25/2.5	250.0	256.0	19.2	19.0	PORT 250-256-19.2/3.0
200.0	206.0	19.2	19.0	PORT 200-206-19.2/3.0	254.0	260.0	19.2	19.0	PORT 254-260-19.2/3.0
200.0	206.0	31.7	31.2	PORT 200-206-31.7/3.0	255.0	261.0	19.2	19.0	PORT 255-261-19.2/3.0
204.0	210.0	19.2	19.0	PORT 204-210-19.2/3.0	259.0	265.0	19.2	19.0	PORT 259-265-19.2/3.0
205.0	210.0	25.0	24.5	PORT 205-210-25/2.5	260.0	266.0	19.2	19.0	PORT 260-266-19.2/3.0
205.0	211.0	19.2	19.0	PORT 205-211-19.2/3.0	264.0	270.0	19.2	19.0	PORT 264-270-19.2/3.0
209.0	215.0	19.2	19.0	PORT 209-215-19.2/3.0	265.0	271.0	19.2	19.0	PORT 265-271-19.2/3.0
210.0	215.0	25.0	24.5	PORT 210-215-25/2.5	269.0	275.0	19.2	19.0	PORT 269-275-19.2/3.0
210.0	216.0	19.2	19.0	PORT 210-216-19.2/3.0	270.0	276.0	19.2	19.0	PORT 270-276-19.2/3.0
214.0	220.0	19.2	19.0	PORT 214-220-19.2/3.0	274.0	280.0	19.2	19.0	PORT 274-280-19.2/3.0
214.0	220.0	31.7	31.2	PORT 214-220-31.7/3.0	275.0	281.0	19.2	19.0	PORT 259-265-19.2/3.0
215.0	220.0	25.0	24.5	PORT 215-220-25/2.5	279.0	285.0	19.2	19.0	PORT 279-285-19.2/3.0
215.0	221.0	19.2	19.0	PORT 215-221-19.2/3.0	280.0	286.0	19.2	19.0	PORT 280-286-19.2/3.0
219.0	225.0	19.2	19.0	PORT 219-225-19.2/3.0	284.0	290.0	19.2	19.0	PORT 284-290-19.2/3.0
220.0	225.0	25.0	24.5	PORT 220-225-25/2.5	285.0	291.0	19.2	19.0	PORT 285-291-19.2/3.0
220.0	226.0	19.2	19.0	PORT 220-226-19.2/3.0	289.0	295.0	19.2	19.0	PORT 289-295-19.2/3.0
224.0	230.0	19.2	19.0	PORT 224-230-19.2/3.0	290.0	296.0	19.2	19.0	PORT 290-296-19.2/3.0
225.0	230.0	25.0	24.5	PORT 225-230-25/2.5	294.0	300.0	19.2	19.0	PORT 294-300-19.2/3.0
225.0	231.0	19.2	19.0	PORT 225-231-19.2/3.0	295.0	301.0	19.2	19.0	PORT 295-301-19.2/3.0
227.0	233.0	19.2	19.0	PORT 227-233-19.2/3.0	300.0	306.0	19.2	19.0	PORT 300-306-19.2/3.0
227.0	233.0	25.4	25.1	PORT 227-233-25.4/3.0					
229.0	235.0	19.2	19.0	PORT 229-235-19.2/3.0					
230.0	235.0	25.0	24.5	PORT 230-235-25/2.5					
230.0	236.0	19.2	19.0	PORT 230-236-19.2/3.0					
234.0	240.0	19.2	19.0	PORT 234-240-19.2/3.0					
235.0	240.0	25.0	24.5	PORT 235-240-25/2.5					
235.0	241.0	19.2	19.0	PORT 235-241-19.2/3.0					

Guide Ring - EV85

Wear Rings

EV85 (Metric Size)

EV85

Type	Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
EV85	Phenolic Rasin	60	-30 +120	1.5

- Non metallic bearing ring with high permissible compressive load.
- Dimensional stability throughout temperature range.
- Constant friction under varying speed or load.
- Easy to install.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)
11.0	16.0	5.6	5.4	EV85 011-016-5.6/2.5	31.0	35.0	10.1	10.0	EV85 031-035-10.1/2
12.0	15.1	4.0	3.8	EV85 012-015.1-4/1.5	31.5	35.5	8.1	8.0	EV85 031.5-035.5-8.1/2
12.9	16.0	4.0	3.8	EV85 012.9-016-4/1.5	31.5	35.5	10.1	10.0	EV85 031.5-035.5-10.1/2
14.0	17.1	4.0	3.8	EV85 014-017.1-4/1.5	32.0	37.0	5.6	5.4	EV85 032-037-5.6/2.5
14.0	18.0	8.1	8.0	EV85 014-018-8.1/2	32.0	37.0	5.6	5.4	EV85 032-037-5.6/2.5
15.0	20.0	5.6	5.4	EV85 015-020-5.6/2.5	32.0	37.0	9.7	9.5	EV85 032-037-9.7/2.5
15.2	19.2	8.1	8.0	EV85 015.2-019.2-8.1/2	34.0	38.0	10.1	10.0	EV85 034-038-10.1/2
16.0	19.1	4.0	3.8	EV85 016-019.1-4/1.5	35.0	40.0	5.6	5.4	EV85 035-040-5.6/2.5
16.0	20.0	8.1	8.0	EV85 016-020-8.1/2	35.0	40.0	5.6	5.4	EV85 035-040-5.6/2.5
16.0	21.0	5.6	5.4	EV85 016-021-5.6/2.5	35.0	40.0	9.7	9.5	EV85 035-040-9.7/2.5
16.9	20.0	4.0	3.8	EV85 016.9-020-4/1.5	36.0	40.0	8.1	8.0	EV85 036-040-8.1/2
18.0	21.1	4.0	3.8	EV85 018-021.1-4/1.5	36.0	40.0	10.1	10.0	EV85 036-040-10.1/2
18.0	22.0	8.1	8.0	EV85 018-022-8.1/2	36.0	41.0	5.6	5.4	EV85 036-041-5.6/2.5
18.0	23.0	5.6	5.4	EV85 018-023-5.6/2.5	36.0	41.0	5.6	5.4	EV85 036-041-5.6/2.5
20.0	23.1	4.0	3.8	EV85 020-023.1-4/1.5	36.0	41.0	9.7	9.5	EV85 036-041-9.7/2.5
20.0	24.0	8.1	8.0	EV85 020-024-8.1/2	36.0	41.0	9.7	9.5	EV85 036-041-9.7/2.5
20.0	25.0	5.6	5.4	EV85 020-025-5.6/2.5	37.0	41.0	15.1	15.0	EV85 037-041-15.1/2
21.0	25.0	8.1	8.0	EV85 021-025-8.1/2	36.9	40.0	4.0	3.8	EV85 036.9-040-4/1.5
21.9	25.0	4.0	3.8	EV85 021.9-025-4/1.5	38.0	43.0	15.1	15.0	EV85 038-043-15.1/2.5
22.0	25.1	4.0	3.8	EV85 022-025.1-4/1.5	39.5	44.5	15.1	15.0	EV85 039.5-44.5-15.1/2.5
22.0	26.0	8.1	8.0	EV85 022-026-8.1/2	40.0	45.0	5.6	5.4	EV85 040-045-5.6/2.5
22.0	27.0	5.6	5.4	EV85 022-027-5.6/2.5	40.0	45.0	5.6	5.4	EV85 040-045-5.6/2.5
24.0	28.0	8.1	8.0	EV85 024-028-8.1/2	40.0	45.0	8.1	8.0	EV85 040-045-8.1/2.5
25.0	28.1	4.0	3.8	EV85 025-028.1-4/1.5	40.0	45.0	9.7	9.5	EV85 040-045-9.7/2.5
25.0	30.0	5.6	5.4	EV85 025-030-5.6/2.5	40.0	45.0	9.7	9.5	EV85 040-045-9.7/2.5
26.0	30.0	8.1	8.0	EV85 026-030-8.1/2	40.0	45.0	15.1	15.0	EV85 040-045-15.1/2.5
27.0	31.0	8.1	8.0	EV85 027-031-8.1/2	45.0	50.0	5.6	5.4	EV85 045-050-5.6/2.5
27.0	32.0	5.6	5.4	EV85 027-032-5.6/2.5	45.0	50.0	8.1	8.0	EV85 045-050-8.1/2.5
27.0	32.0	5.6	5.4	EV85 027-032-5.6/2.5	45.0	50.0	9.7	9.5	EV85 045-050-9.7/2.5
27.5	31.5	8.1	8.0	EV85 027.5-031.5-8.1/2	45.0	50.0	9.7	9.5	EV85 045-050-9.7/2.5
28.0	31.1	4.0	3.8	EV85 028-031.1-4/1.5	45.0	50.0	15.0	14.7	EV85 045-050-15/2.5
28.0	32.0	8.1	8.0	EV85 028-032-8.1/2	45.0	50.0	15.1	15.0	EV85 045-050-15.1/2.5
28.0	33.0	5.6	5.4	EV85 028-033-5.6/2.5	46.9	50.0	4.0	3.8	EV85 046.9-050-4/1.5
28.0	33.0	5.6	5.4	EV85 028-033-5.6/2.5	46.5	51.5	15.1	15.0	EV85 046.5-51.5-15.1/2.5
28.9	32.0	4.0	3.8	EV85 028.9-032-4/1.5	50.0	55.0	5.6	5.4	EV85 050-055-5.6/2.5
29.0	33.0	10.1	10.0	EV85 029-033-10.1/2	50.0	55.0	8.1	8.0	EV85 050-055-8.1/2.5
30.0	35.0	5.6	5.4	EV85 030-035-5.6/2.5	50.0	55.0	9.7	9.5	EV85 050-055-9.7/2.5
30.0	35.0	5.6	5.4	EV85 030-035-5.6/2.5	50.0	55.0	9.7	9.5	EV85 050-055-9.7/2.5
30.0	35.0	9.7	9.5	EV85 030-035-9.7/2.5	50.0	55.0	15.0	14.7	EV85 050-055-15/2.5
31.0	35.0	8.1	8.0	EV85 031-035-8.1/2	50.0	55.0	15.1	15.0	EV85 050-055-15.1/2.5

Guide Ring - EV85

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)
51.0	56.0	8.1	8.0	EV85 051-056-8.1/2.5	65.0	70.0	15.0	14.7	EV85 065-070-15/2.5
51.0	56.0	15.1	15.0	EV85 051-056-15.1/1/2.5	65.0	70.0	15.0	14.7	EV85 065-070-15/2.5
55.0	60.0	5.6	5.4	EV85 055-060-5.6/2.5	65.0	70.0	20.1	20.0	EV85 065-070-20.1/2.5
55.0	60.0	5.6	5.4	EV85 055-060-5.6/2.5	66.0	71.0	10.1	10.0	EV85 066-071-10.1/2.5
55.0	60.0	8.1	8.0	EV85 055-060-8.1/2.5	66.0	71.0	20.1	20.0	EV85 066-71-20.1/2.5
55.0	60.0	9.7	9.5	EV85 055-060-9.7/2.5	70.0	75.0	5.6	5.4	EV85 070-075-5.6/2.5
55.0	60.0	9.7	9.5	EV85 055-060-9.7/2.5	70.0	75.0	9.7	9.5	EV85 070-075-9.7/2.5
55.0	60.0	15.0	14.7	EV85 055-060-15/2.5	70.0	75.0	9.7	9.5	EV85 070-075-9.7/2.5
55.0	60.0	15.1	15.0	EV85 055-060-15.1/2.5	70.0	75.0	10.1	10.0	EV85 070-075-10.1/2.5
56.0	61.0	5.6	5.4	EV85 056-061-5.6/2.5	70.0	75.0	15.0	14.7	EV85 070-075-15/2.5
56.0	61.0	9.7	9.5	EV85 056-061-9.7/2.5	70.0	75.0	15.0	14.7	EV85 070-075-15/2.5
56.0	61.0	9.7	9.5	EV85 056-061-9.7/2.5	70.0	75.0	20.1	20.0	EV85 070-075-20.1/2.5
56.0	61.0	15.0	14.7	EV85 056-061-15/2.5	71.0	76.0	20.1	20.0	EV85 071-076-20.1/2.5
56.0	61.0	15.1	15.0	EV85 056-061-15.1/2.5	75.0	80.0	5.6	5.4	EV85 075-080-5.6/2.5
58.0	63.0	5.6	5.4	EV85 058-063-5.6/2.5	75.0	80.0	9.7	9.5	EV85 075-080-9.7/2.5
58.0	63.0	5.6	5.4	EV85 058-063-5.6/2.5	75.0	80.0	9.7	9.5	EV85 075-080-9.7/2.5
58.0	63.0	8.1	8.0	EV85 058-063-8.1/2.5	75.0	80.0	10.1	10.0	EV85 075-080-10.1/2.5
58.0	63.0	9.7	9.5	EV85 058-063-9.7/2.5	75.0	80.0	15.0	14.7	EV85 075-080-15/2.5
58.0	63.0	9.7	9.5	EV85 058-063-9.7/2.5	75.0	80.0	15.0	14.7	EV85 075-080-15/2.5
58.0	63.0	15.0	14.7	EV85 058-063-15/2.5	75.0	80.0	20.1	20.0	EV85 075-080-20.1/2.5
58.0	63.0	15.0	14.7	EV85 058-063-15/2.5	79.0	85.0	15.1	15.0	EV85 079-085-15.1/3
58.0	63.0	15.1	15.0	EV85 058-063-15.1/2.5	79.0	85.0	25.1	25.0	EV85 079-085-25.1/3
60.0	65.0	5.6	5.4	EV85 060-065-5.6/2.5	80.0	85.0	9.7	9.5	EV85 080-085-9.7/2.5
60.0	65.0	9.7	9.5	EV85 060-065-9.7/2.5	80.0	85.0	9.7	9.5	EV85 080-085-9.7/2.5
60.0	65.0	9.7	9.5	EV85 060-065-9.7/2.5	80.0	85.0	15.0	14.7	EV85 080-085-15/2.5
60.0	65.0	10.1	10.0	EV85 060-065-10.1/2.5	80.0	85.0	15.0	14.7	EV85 080-085-15/2.5
60.0	65.0	15.0	14.7	EV85 060-065-15/2.5	84.0	90.0	15.1	15.0	EV85 084-090-15.1/3
60.0	65.0	15.0	14.7	EV85 060-065-15/2.5	84.0	90.0	25.1	25.0	EV85 084-090-25.1/3
60.0	65.0	20.1	20.0	EV85 060-065-20.1/2.5	85.0	90.0	9.7	9.5	EV85 085-090-9.7/2.5
61.0	66.0	20.1	20.0	EV85 061-66-20.1/2.5	85.0	90.0	9.7	9.5	EV85 085-090-9.7/2.5
63.0	68.0	5.6	5.4	EV85 063-068-5.6/2.5	85.0	90.0	15.0	14.7	EV85 085-090-15/2.5
63.0	68.0	9.7	9.5	EV85 063-068-9.7/2.5	85.0	90.0	15.0	14.7	EV85 085-090-15/2.5
63.0	68.0	9.7	9.5	EV85 063-068-9.7/2.5	89.0	95.0	15.1	15.0	EV85 089-095-15.1/3
63.0	68.0	15.0	14.7	EV85 063-068-15/2.5	89.0	95.0	25.1	25.0	EV85 089-095-25.1/3
64.0	69.0	10.1	10.0	EV85 064-069-10.1/2.5	90.0	95.0	9.7	9.5	EV85 090-095-9.7/2.5
64.0	69.0	20.1	20.0	EV85 064-069-20.1/2.5	90.0	95.0	9.7	9.5	EV85 090-095-9.7/2.5
65.0	70.0	5.6	5.4	EV85 065-070-5.6/2.5	90.0	95.0	15.0	14.7	EV85 090-095-15/2.5
65.0	70.0	9.7	9.5	EV85 065-070-9.7/2.5	90.0	95.0	15.0	14.7	EV85 090-095-15/2.5
65.0	70.0	9.7	9.5	EV85 065-070-9.7/2.5	94.0	100.0	15.1	15.0	EV85 094-100-15.1/3
65.0	70.0	10.1	10.0	EV85 065-070-10.1/2.5	94.0	100.0	25.1	25.0	EV85 094-100-25.1/3

(Metric Size)

Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)	Groove Dia. Rod d	Groove Dia. Bore D	Groove Width L	Seal Height H	Reference (For order processing)
95.0	100.0	5.6	5.4	EV85 095-100-5.6/2.5	130.0	135.0	9.7	9.5	EV85 130-135-9.7/2.5
95.0	100.0	9.7	9.5	EV85 095-100-9.7/2.5	130.0	135.0	15.0	14.7	EV85 130-135-15/2.5
95.0	100.0	9.7	9.5	EV85 095-100-9.7/2.5	130.0	135.0	15.0	14.7	EV85 130-135-15/2.5
95.0	100.0	15.0	14.7	EV85 095-100-15/2.5	133.0	140.0	20.1	20.0	EV85 133-140-20.1/3.5
95.0	100.0	15.0	14.7	EV85 095-100-15/2.5	133.0	140.0	35.1	35.0	EV85 133-140-35.1/3.5
99.0	105.0	25.1	25.0	EV85 099-105-25.1/3	135.0	140.0	9.7	9.5	EV85 135-140-9.7/2.5
100.0	105.0	9.7	9.5	EV85 100-105-9.7/2.5	135.0	140.0	9.7	9.5	EV85 135-140-9.7/2.5
100.0	105.0	9.7	9.5	EV85 100-105-9.7/2.5	135.0	140.0	15.0	14.7	EV85 135-140-15/2.5
100.0	105.0	15.0	14.7	EV85 100-105-15/2.5	135.0	140.0	15.0	14.7	EV85 135-140-15/2.5
100.0	105.0	15.0	14.7	EV85 100-105-15/2.5	140.0	145.0	9.7	9.5	EV85 140-145-9.7/2.5
102.0	108.0	15.1	15.0	EV85 102-108-15.1/3	140.0	145.0	15.0	14.7	EV85 140-145-15/2.5
104.0	110.0	15.1	15.0	EV85 104-110-15.1/3	140.0	145.0	15.0	14.7	EV85 140-145-15/2.5
104.0	110.0	25.1	25.0	EV85 104-110-25.1/3	140.0	145.0	25.0	24.5	EV85 140-145-25/2.5
105.0	110.0	9.7	9.5	EV85 105-110-9.7/2.5	143.0	150.0	20.1	20.0	EV85 143-150-20.1/3.5
105.0	110.0	15.0	14.7	EV85 105-110-15/2.5	143.0	150.0	35.1	35.0	EV85 143-150-35.1/3.5
105.0	110.0	15.0	14.7	EV85 105-110-15/2.5	145.0	150.0	9.7	9.5	EV85 145-150-9.7/2.5
106.0	112.0	15.1	15.0	EV85 106-112-15.1/3	145.0	150.0	15.0	14.7	EV85 145-150-15/2.5
106.0	112.0	30.1	30.0	EV85 106-112-30.1/3	145.0	150.0	25.0	24.5	EV85 145-150-25/2.5
109.0	115.0	30.1	30.0	EV85 109-115-30.1/3	145.0	150.0	15.0	14.7	EV85 145-150-15/2.5
110.0	115.0	9.7	9.5	EV85 110-115-9.7/2.5	150.0	155.0	9.7	9.5	EV85 150-155-9.7/2.5
110.0	115.0	15.0	14.7	EV85 110-115-15/2.5	150.0	155.0	9.7	9.5	EV85 150-155-9.7/2.5
110.0	115.0	15.0	14.7	EV85 110-115-15/2.5	150.0	155.0	15.0	14.7	EV85 150-155-15/2.5
114.0	120.0	15.1	15.0	EV85 114-120-15.1/3	150.0	155.0	25.0	24.5	EV85 150-155-25/2.5
114.0	120.0	30.1	30.0	EV85 114-120-30.1/3	150.0	155.0	25.0	24.5	EV85 150-155-25/2.5
115.0	120.0	9.7	9.5	EV85 115-120-9.7/2.5	150.0	157.0	40.1	40.0	EV85 150-157-40.1/3.5
115.0	120.0	15.0	14.7	EV85 115-120-15/2.5	153.0	160.0	20.1	20.0	EV85 153-160-20.1/3.5
115.0	120.0	15.0	14.7	EV85 115-120-15/2.5	153.0	160.0	40.1	40.0	EV85 153-160-40.1/3.5
119.0	125.0	15.1	15.0	EV85 119-125-15.1/3	155.0	160.0	9.7	9.5	EV85 155-160-9.7/2.5
119.0	125.0	30.1	30.0	EV85 119-125-30.1/3	155.0	160.0	9.7	9.5	EV85 155-160-9.7/2.5
120.0	125.0	5.6	5.4	EV85 120-125-5.6/2.5	155.0	160.0	15.0	14.7	EV85 155-160-15/2.5
120.0	125.0	9.7	9.5	EV85 120-125-9.7/2.5	155.0	160.0	15.0	14.7	EV85 155-160-15/2.5
120.0	125.0	9.7	9.5	EV85 120-125-9.7/2.5	155.0	160.0	25.0	24.5	EV85 155-160-25/2.5
120.0	125.0	15.0	14.7	EV85 120-125-15/2.5	157.0	165.0	45.1	45.0	EV85 157-165-45.1/4
120.0	125.0	15.0	14.7	EV85 120-125-15/2.5	160.0	165.0	9.7	9.5	EV85 160-165-9.7/2.5
123.0	130.0	15.1	15.0	EV85 123-130-15.1/3.5	160.0	165.0	15.0	14.7	EV85 160-165-15/2.5
123.0	130.0	30.1	30.0	EV85 123-130-30.1/3.5	160.0	165.0	15.0	14.7	EV85 160-165-15/2.5
125.0	130.0	9.7	9.5	EV85 125-130-9.7/2.5	160.0	165.0	25.0	24.5	EV85 160-165-25/2.5
125.0	130.0	15.0	14.7	EV85 125-130-15/2.5	160.0	165.0	25.0	24.5	EV85 160-165-25/2.5
125.0	130.0	15.0	14.7	EV85 125-130-15/2.5	162.0	170.0	25.1	25.0	EV85 162-170-25.1/4
125.0	132.0	35.1	35.0	EV85 125-132-35.1/3.5	162.0	170.0	45.1	45.0	EV85 162-170-45.1/4

Guide Ring - EV85

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
165.0	170.0	9.7	9.5	EV85 165-170-9.7/2.5	210.0	215.0	15.0	14.7	EV85 210-215-15/2.5
165.0	170.0	15.0	14.7	EV85 165-170-15/2.5	210.0	215.0	25.0	24.5	EV85 210-215-25/2.5
165.0	170.0	15.0	14.7	EV85 165-170-15/2.5	212.0	220.0	50.1	50.0	EV85 212-220-50.1/4
165.0	170.0	25.0	24.5	EV85 165-170-25/2.5	215.0	220.0	9.7	9.5	EV85 215-220-9.7/2.5
170.0	175.0	9.7	9.5	EV85 170-175-9.7/2.5	215.0	220.0	15.0	14.7	EV85 215-220-15/2.5
170.0	175.0	9.7	9.5	EV85 170-175-9.7/2.5	215.0	220.0	25.0	24.5	EV85 215-220-25/2.5
170.0	175.0	15.0	14.7	EV85 170-175-15/2.5	216.0	224.0	25.1	25.0	EV85 216-224-25.1/4
170.0	175.0	25.0	24.5	EV85 170-175-25/2.5	216.0	224.0	50.1	50.0	EV85 216-224-50.1/4
172.0	180.0	25.1	25.0	EV85 172-180-25.1/4	217.0	225.0	25.1	25.0	EV85 217-225-25.1/4
172.0	180.0	45.1	45.0	EV85 172-180-45.1/4	217.0	225.0	50.1	50.0	EV85 217-225-50.1/4
175.0	180.0	9.7	9.5	EV85 175-180-9.7/2.5	220.0	225.0	15.0	14.7	EV85 220-225-15/2.5
175.0	180.0	9.7	9.5	EV85 175-180-9.7/2.5	220.0	225.0	25.0	24.5	EV85 220-225-25/2.5
175.0	180.0	15.0	14.7	EV85 175-180-15/2.5	222.0	230.0	30.1	30.0	EV85 222-230-30.1/4
175.0	180.0	25.0	24.5	EV85 175-180-25/2.5	222.0	230.0	55.1	55.0	EV85 222-230-55.1/4
177.0	185.0	45.1	45.0	EV85 177-185-45.1/4	225.0	230.0	15.0	14.7	EV85 225-230-15/2.5
180.0	185.0	9.7	9.5	EV85 180-185-9.7/2.5	225.0	230.0	25.0	24.5	EV85 225-230-25/2.5
180.0	185.0	15.0	14.7	EV85 180-185-15/2.5	230.0	235.0	15.0	14.7	EV85 230-235-15/2.5
180.0	185.0	25.0	24.5	EV85 180-185-25/2.5	230.0	235.0	25.0	24.5	EV85 230-235-25/2.5
182.0	190.0	25.1	25.0	EV85 182-190-25.1/4	232.0	240.0	30.1	30.0	EV85 232-240-30.1/4
182.0	190.0	45.1	45.0	EV85 182-190-45.1/4	232.0	240.0	55.1	55.0	EV85 232-240-55.1/4
185.0	190.0	9.7	9.5	EV85 185-190-9.7/2.5	235.0	240.0	15.0	14.7	EV85 235-240-15/2.5
185.0	190.0	15.0	14.7	EV85 185-190-15/2.5	235.0	240.0	25.0	24.5	EV85 235-240-25/2.5
185.0	190.0	25.0	24.5	EV85 185-190-25/2.5	240.0	245.0	15.0	14.7	EV85 240-245-15/2.5
190.0	195.0	9.7	9.5	EV85 190-195-9.7/2.5	240.0	245.0	25.0	24.5	EV85 240-245-25/2.5
190.0	195.0	15.0	14.7	EV85 190-195-15/2.5	242.0	250.0	30.1	30.0	EV85 242-250-30.1/4
190.0	195.0	25.0	24.5	EV85 190-195-25/2.5	242.0	250.0	55.1	55.0	EV85 242-250-55.1/4
192.0	200.0	25.1	25.0	EV85 192-200-25.1/4	245.0	250.0	9.7	9.5	EV85 245-250-9.7/2.5
192.0	200.0	45.1	45.0	EV85 192-200-45.1/4	245.0	250.0	15.0	14.7	EV85 245-250-15/2.5
195.0	200.0	9.7	9.5	EV85 195-200-9.7/2.5	245.0	250.0	25.0	24.5	EV85 245-250-25/2.5
195.0	200.0	9.7	9.5	EV85 195-200-9.7/2.5	245.0	250.0	25.0	24.5	EV85 245-250-25/2.5
195.0	200.0	15.0	14.7	EV85 195-200-15/2.5	250.0	255.0	15.0	14.7	EV85 250-255-15/2.5
195.0	200.0	25.0	24.5	EV85 195-200-25/2.5	250.0	255.0	25.0	24.5	EV85 250-255-25/2.5
196.0	204.0	25.1	25.0	EV85 196-204-25.1/4	252.0	260.0	60.1	60.0	EV85 252-260-60.1/4
197.0	205.0	50.1	50.0	EV85 197-205-50.1/4	255.0	260.0	15.0	14.7	EV85 255-260-15/2.5
200.0	205.0	15.0	14.7	EV85 200-205-15/2.5	255.0	260.0	25.0	24.5	EV85 255-260-25/2.5
200.0	205.0	25.0	24.5	EV85 200-205-25/2.5	255.0	260.0	25.0	24.5	EV85 255-260-25/2.5
202.0	210.0	25.1	25.0	EV85 202-210-25.1/4	260.0	265.0	15.0	14.7	EV85 260-265-15/2.5
202.0	210.0	50.1	50.0	EV85 202-210-50.1/4	260.0	265.0	25.0	24.5	EV85 260-265-25/2.5
205.0	210.0	15.0	14.7	EV85 205-210-15/2.5	262.0	270.0	60.1	60.0	EV85 262-270-60.1/4
205.0	210.0	25.0	24.5	EV85 205-210-25/2.5	265.0	270.0	15.0	14.7	EV85 265-270-15/2.5

(Metric Size)

Groove Dia.		Groove Width	Seal Height	Reference (For order processing)	Groove Dia.		Groove Width	Seal Height	Reference (For order processing)
Rod	Bore				Rod	Bore			
d	D	L	H		d	D	L	H	
265.0	270.0	25.0	24.5	EV85 265-270-25/2.5	360.0	365.0	15.0	14.7	EV85 360-365-15/2.5
267.0	275.0	60.1	60.0	EV85 267-275-60.1/4	360.0	365.0	25.0	24.5	EV85 360-365-25/2.5
270.0	275.0	15.0	14.7	EV85 270-275-15/2.5	360.0	368.0	25.0	24.5	EV85 360-368-25/4
270.0	275.0	25.0	24.5	EV85 270-275-25/2.5	365.0	370.0	25.0	24.5	EV85 365-370-25/2.5
272.0	280.0	25.0	24.5	EV85 272-280-25/4	370.0	375.0	25.0	24.5	EV85 370-375-25/2.5
275.0	280.0	15.0	14.7	EV85 275-280-15/2.5	375.0	380.0	25.0	24.5	EV85 375-380-25/2.5
275.0	280.0	25.0	24.5	EV85 275-280-25/2.5	380.0	385.0	25.0	24.5	EV85 380-385-25/2.5
280.0	285.0	15.0	14.7	EV85 280-285-15/2.5	385.0	390.0	25.0	24.5	EV85 385-390-25/2.5
280.0	285.0	25.0	24.5	EV85 280-285-25/2.5	390.0	395.0	25.0	24.5	EV85 390-395-25/2.5
280.0	288.0	25.0	24.5	EV85 280-288-25/4	392.0	400.0	25.0	24.5	EV85 392-400-25/4
282.0	290.0	70.1	70.0	EV85 282-290-70.1/4	395.0	400.0	15.0	14.7	EV85 395-400-15/2.5
285.0	290.0	15.0	14.7	EV85 285-290-15/2.5	395.0	400.0	25.0	24.5	EV85 395-400-25/2.5
285.0	290.0	25.0	24.5	EV85 285-290-25/2.5	400.0	405.0	25.0	24.5	EV85 400-405-25/2.5
289.0	297.0	70.1	70.0	EV85 289-297-70.1/4	405.0	410.0	25.0	24.5	EV85 405-410-25/2.5
290.0	295.0	15.0	14.7	EV85 290-295-15/2.5	410.0	415.0	25.0	24.5	EV85 410-415-25/2.5
290.0	295.0	25.0	24.5	EV85 290-295-25/2.5	415.0	420.0	25.0	24.5	EV85 415-420-25/2.5
292.0	300.0	70.1	70.0	EV85 292-300-70.1/4	420.0	425.0	25.0	24.5	EV85 420-425-25/2.5
295.0	300.0	15.0	14.7	EV85 295-300-15/2.5	425.0	430.0	25.0	24.5	EV85 425-430-25/2.5
295.0	300.0	25.0	24.5	EV85 295-300-25/2.5	430.0	435.0	25.0	24.5	EV85 430-435-25/2.5
300.0	305.0	25.0	24.5	EV85 300-305-25/2.5	435.0	440.0	25.0	24.5	EV85 435-440-25/2.5
304.0	312.0	70.1	70.0	EV85 304-312-70.1/4	440.0	445.0	25.0	24.5	EV85 440-445-25/2.5
305.0	310.0	25.0	24.5	EV85 305-310-25/2.5	442.0	450.0	25.0	24.5	EV85 442-450-25/4
310.0	315.0	25.0	24.5	EV85 310-315-25/2.5	445.0	450.0	15.0	14.7	EV85 445-450-15/2.5
312.0	320.0	25.0	24.5	EV85 312-320-25/4	445.0	450.0	25.0	24.5	EV85 445-450-25/2.5
315.0	320.0	15.0	14.7	EV85 315-320-15/2.5	450.0	455.0	25.0	24.5	EV85 450-455-25/2.5
315.0	320.0	25.0	24.5	EV85 315-320-25/2.5	455.0	460.0	25.0	24.5	EV85 455-460-25/2.5
320.0	325.0	15.0	14.7	EV85 320-325-15/2.5	460.0	465.0	25.0	24.5	EV85 460-465-25/2.5
320.0	325.0	25.0	24.5	EV85 320-325-25/2.5	465.0	470.0	25.0	24.5	EV85 465-470-25/2.5
320.0	328.0	25.0	24.5	EV85 320-328-25/4	470.0	475.0	25.0	24.5	EV85 470-475-25/2.5
324.0	332.0	70.1	70.0	EV85 324-332-70.1/4	475.0	480.0	25.0	24.5	EV85 475-480-25/2.5
325.0	330.0	25.0	24.5	EV85 325-330-25/2.5	480.0	485.0	25.0	24.5	EV85 480-485-25/2.5
330.0	335.0	25.0	24.5	EV85 330-335-25/2.5	485.0	490.0	25.0	24.5	EV85 485-490-25/2.5
335.0	340.0	25.0	24.5	EV85 335-340-25/2.5	490.0	495.0	25.0	24.5	EV85 490-495-25/2.5
340.0	345.0	25.0	24.5	EV85 340-345-25/2.5	492.0	500.0	25.0	24.5	EV85 492-500-25/4
345.0	350.0	25.0	24.5	EV85 345-350-25/2.5	495.0	500.0	15.0	14.7	EV85 495-500-15/2.5
350.0	355.0	25.0	24.5	EV85 350-355-25/2.5	495.0	500.0	25.0	24.5	EV85 495-500-25/2.5
352.0	360.0	25.0	24.5	EV85 352-360-25/4					
355.0	360.0	15.0	14.7	EV85 355-360-15/2.5					
355.0	360.0	25.0	24.5	EV85 355-360-25/2.5					
355.0	360.0	25.0	24.5	EV85 355-360-25/2.5					

SPEC SEAL
Seals & O-rings Specialist

Guide Ring - F1

Wear Rings

F1 (Metric Size)

F1

Material	Temp. (°c)	Speed (m/s)
Polyamide	-40 +100	5

- Easy to install.
- Extremely durable material.
- Can be cut additionally for intermediate sizes.
- Low cost.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 µm	≤ 4 µm
Surface of housing	≤ 1.8 µm	≤ 10 µm
Sides of housing	≤ 3.0 µm	≤ 16 µm

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Bore Dia.	Groove Diamensions					Seal Height	Ring Gap	Reference (For order processing)
D	D1	d1	d	L	L1	H	Z	
20.0	19.65	17.2	14.0	8.5	3.1	7.8	1.0	F1 2005 W5007
22.0	21.65	19.2	16.0	8.5	3.1	7.8	2.0	F1 2012 W5007
25.0	24.65	22.2	19.0	8.5	3.1	7.8	2.0	F1 2030 W5007
28.0	27.65	25.2	22.0	8.5	3.1	7.8	2.0	F1 2035 W5007
30.0	29.65	27.2	24.0	8.5	3.1	7.8	2.0	F1 3010 W5007
32.0	31.65	29.2	26.0	8.5	3.1	7.8	2.0	F1 3014 W5007
35.0	34.65	32.2	29.0	8.5	3.1	7.8	2.0	F1 3030 W5007
36.0	35.65	33.2	30.0	8.5	3.1	7.8	2.0	F1 3034 W5007
40.0	39.6	36.8	32.5	10.5	3.6	9.8	2.0	F1 4005 W5007
42.0	41.6	38.8	34.5	10.5	3.6	9.8	2.0	F1 4008 W5007
45.0	44.6	41.8	37.5	10.5	3.6	9.8	2.0	F1 4012 W5007
50.0	49.6	46.8	42.5	10.5	3.6	9.8	2.0	F1 5005 W5007
55.0	54.6	51.9	47.5	10.5	3.6	9.8	3.0	F1 5025 W5007
56.0	55.6	52.9	48.5	10.5	3.6	9.8	3.0	F1 5030 W5007
58.0	57.6	54.9	50.5	10.5	3.6	9.8	3.0	F1 5045 W5007
60.0	59.6	56.9	52.5	10.5	3.6	9.8	3.0	F1 6005 W5007
63.0	62.5	59.5	54.0	15.0	5.0	14.3	3.0	F1 6020 W5007
65.0	64.5	61.5	56.0	15.0	5.0	14.3	3.0	F1 6030 W5007
70.0	69.5	66.5	61.0	15.0	5.0	14.3	3.0	F1 7005 W5007
75.0	74.5	71.5	66.0	15.0	5.0	14.3	3.0	F1 7040 W5007
78.0	77.5	74.5	69.0	15.0	5.0	14.3	3.0	F1 7078 W5007
80.0	79.5	76.5	71.0	15.0	5.0	14.3	3.0	F1 8005 W5007
82.0	81.5	78.5	73.0	15.0	5.0	14.3	4.0	F1 8010 W5007
85.0	84.5	81.5	76.0	15.0	5.0	14.3	4.0	F1 8025 W5007
90.0	89.5	86.5	81.0	15.0	5.0	14.3	4.0	F1 9005 W5007
95.0	94.4	91.5	86.0	15.0	5.0	14.3	4.0	F1 9025 W5007
100.0	99.4	96.5	91.0	15.0	5.0	14.3	4.0	F1 A005 W5007
105.0	104.4	101.5	96.0	15.0	5.0	14.3	4.0	F1 A025 W5007
110.0	109.4	106.5	101.0	15.0	5.0	14.3	4.0	F1 B005 W5007
115.0	114.4	111.5	106.0	15.0	5.0	14.3	5.0	F1 B040 W5007
120.0	119.4	116.5	111.0	15.0	5.0	14.3	5.0	F1 C005 W5007
125.0	124.4	121.5	116.0	15.0	5.0	14.3	5.0	F1 C040 W5007
130.0	129.4	126.5	121.0	15.0	5.0	14.3	5.0	F1 D005 W5007
135.0	134.4	131.5	126.0	15.0	5.0	14.3	6.0	F1 D030 W5007
140.0	139.4	136.5	131.0	15.0	5.0	14.3	6.0	F1 E005 W5007
150.0	149.4	146.5	141.0	15.0	5.0	14.3	6.0	F1 F005 W5007
152.6	152.0	149.1	143.6	15.0	5.0	14.3	6.0	F1 F025 W5007
160.0	159.3	152.9	144.0	20.3	8.0	19.8	6.0	F1 G005 W5007
170.0	169.3	162.9	154.0	20.3	8.0	19.8	7.0	F1 H005 W5007
180.0	179.3	172.9	164.0	20.3	8.0	19.8	7.0	F1 J005 W5007
185.0	184.3	177.9	169.0	20.3	8.0	19.8	7.0	F1 J020 W5007
190.0	189.3	182.9	174.0	20.3	8.0	19.8	7.0	F1 K005 W5007
195.0	194.3	187.9	179.0	20.3	8.0	19.8	8.0	F1 K050 W5007
200.0	199.3	192.9	184.0	20.3	8.0	19.8	8.0	F1 L005 W5007
220.0	219.2	212.5	203.0	25.0	8.0	24.5	9.0	F1 M005 W5007
225.0	224.2	217.5	208.0	25.0	8.0	24.5	9.0	F1 M040 W5007
230.0	229.2	222.5	213.0	25.0	8.0	24.5	9.0	F1 M060 W5007
240.0	239.2	232.5	223.0	25.0	8.0	24.5	9.0	F1 N005 W5007
250.0	249.2	242.5	233.0	25.0	8.0	24.5	10.0	F1 N055 W5007

Guide Ring - WPB

Wear Rings

WPB (Metric Size)

WPB

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
Polyamide	21	-25 +80	1

- Exclusively for piston.
- Upgrade resisting pressure and durability of packing.
- Mostly use with SKY packing.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 μm	≤ 4 μm
Surface of housing	≤ 1.8 μm	≤ 10 μm
Sides of housing	≤ 3.0 μm	≤ 16 μm

Size Range	T
WPB-40A~125	1.95 $^{0}_{-0.15}$
WPB-140~180	2.95 $^{0}_{-0.15}$

(Metric Size)

Bore Dia.	Groove Dimensions								Seal Height	Seal Thick -ness	Reference (For order processing)
D	d	D1	D2	D3	L	L1	L3	L2	H	t	
40.0	30.0	39.0	36.0	38.0	10.6	8.5	1.8	7.0	14.0	1.5	WPB-040A
45.0	35.0	44.0	41.0	43.0	11.6	8.5	1.8	8.0	15.0	1.5	WPB-045A
50.0	40.0	49.0	46.0	48.0	11.6	8.5	1.8	8.0	15.0	1.5	WPB-050A
55.0	45.0	54.0	51.0	53.0	11.6	9.0	1.8	8.0	16.0	2.0	WPB-055A
60.0	50.0	59.0	56.0	58.0	11.6	9.0	1.8	8.0	16.0	2.0	WPB-060A
63.0	53.0	62.0	59.0	61.0	12.6	9.0	1.8	9.0	17.0	2.0	WPB-063A
65.0	55.0	64.0	61.0	63.0	12.6	9.0	1.8	9.0	17.0	2.0	WPB-065
70.0	60.0	69.0	66.0	68.0	13.6	9.0	1.8	10.0	18.0	2.0	WPB-070
71.0	60.0	70.0	67.0	69.0	13.6	10.0	1.8	10.0	18.0	2.0	WPB-071
75.0	65.0	74.0	71.0	73.0	15.6	9.0	1.8	12.0	20.0	2.0	WPB-075
80.0	71.0	79.0	76.0	78.0	15.6	9.0	1.8	12.0	20.0	2.0	WPB-080
90.0	80.0	89.0	86.0	88.0	15.6	9.0	1.8	12.0	20.0	2.0	WPB-090
100.0	85.0	98.0	96.0	98.0	21.6	12.0	2.8	16.0	26.0	2.0	WPB-100
110.0	95.0	108.0	106.0	108.0	23.6	12.0	2.8	18.0	28.0	2.0	WPB-110
115.0	100.0	113.0	111.0	113.0	25.6	12.0	2.8	20.0	30.0	2.0	WPB-115
120.0	106.0	118.0	116.0	118.0	25.6	11.5	2.8	20.0	30.0	2.0	WPB-120
125.0	112.0	123.0	121.0	123.0	27.6	12.0	2.8	22.0	32.0	2.0	WPB-125
140.0	125.0	138.0	134.0	138.0	31.6	12.0	2.8	26.0	36.0	2.0	WPB-140
150.0	136.0	148.0	144.0	148.0	32.6	12.5	2.8	27.0	39.0	3.0	WPB-150
160.0	145.0	158.0	154.0	158.0	35.6	13.0	2.8	30.0	42.0	3.0	WPB-160
180.0	165.0	178.0	174.0	178.0	39.6	13.0	2.8	34.0	46.0	3.0	WPB-180

SPEC SEAL Seals & O-rings Specialist

Guide Ring - WRB

Wear Rings

WRB (Metric Size)

WRB

Material	Dynamic Load (N/mm^2)	Temp. (°c)	Speed (m/s)
Polyamide	21	-25 +80	1

- Exclusively for rod.
- Upgrade resisting pressure and durability of packing.
- Mostly use with SKY packing.

Installation Recommendation

Surface roughness	Ra	Rt
Sliding surface	≤ 0.3 μm	≤ 4 μm
Surface of housing	≤ 1.8 μm	≤ 10 μm
Sides of housing	≤ 3.0 μm	≤ 16 μm

Size Range	T
WRB-18~100	$0.95\ ^{0}_{-0.1}$

SPEC SEAL
Seals & O-rings Specialist

(Metric Size)

Rod Dia.	Groove Dimensions							Seal Height	Seal Thick -ness	Reference (For order processing)
d	D	d1	d2	L	L1	L2	L3	H	t	
18.0	26.0	20.0	22.0	6.7	3.0	6.0	11.5	21.0	1.0	WRB-018
20.0	28.0	22.0	24.0	6.7	3.0	6.0	11.5	21.0	1.0	WRB-020
22.4	30.0	24.4	26.4	6.7	3.0	6.0	11.5	21.0	1.0	WRB-022.4
25.0	33.0	27.0	29.0	6.7	3.0	6.0	14.5	24.0	1.0	WRB-025
28.0	35.5	30.0	32.0	6.7	3.0	6.0	16.5	26.0	1.0	WRB-028
30.0	40.0	32.0	34.0	8.5	3.5	10.0	14.0	28.5	1.5	WRB-030
35.0	45.0	37.0	39.0	8.5	3.5	10.0	19.0	33.5	1.5	WRB-035
35.5	45.0	37.5	39.5	8.5	3.5	10.0	19.0	33.5	1.5	WRB-035.5
40.0	50.0	42.0	44.0	8.5	3.5	10.0	23.0	37.5	1.5	WRB-040
45.0	56.0	47.0	49.0	9.5	3.5	10.0	27.0	41.5	1.5	WRB-045
50.0	60.0	52.0	54.0	8.5	3.5	10.0	32.0	46.5	1.5	WRB-050
55.0	65.0	57.0	59.0	8.5	3.5	10.0	37.0	51.5	1.5	WRB-055
56.0	66.0	58.0	60.0	8.5	3.5	10.0	37.0	51.5	1.5	WRB-056
60.0	71.0	62.0	64.0	10.0	3.5	10.0	40.0	55.0	2.0	WRB-060
63.0	73.0	65.0	67.0	9.0	3.5	10.0	42.0	57.0	2.0	WRB-063
71.0	80.0	73.0	75.0	9.0	3.5	10.0	47.0	62.0	2.0	WRB-071
80.0	90.0	82.0	84.0	9.0	3.5	10.0	52.0	67.0	2.0	WRB-080
90.0	105.0	92.0	94.0	12.0	4.0	10.0	57.0	72.0	2.0	WRB-090
100.0	115.0	102.0	104.0	12.0	4.0	10.0	62.0	77.0	2.0	WRB-100

SPEC SEAL
Seals & O-rings Specialist

Guide Ring - W2

Wear Rings

W2 (Inch Size)

W2

Material	Temp. (°c)	Speed (m/s)
Molygard	-30 +110	0.8

- Economical bearing ring.
- For low to medium duty applications.
- Easy to install.
- Low friction.

Installation Recommendation

Surface roughness	µin CLA
Sliding surface	4 to 16
Surface of housing	63 max
Sides of housing	125 max

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Groove Width	Gland Dia.	Piston Dia.	Seal Height	Reference (For order processing)
d	D	L	d1	D1	H	
1.090	1.250	.510	-	1.225	.500	W1-1250-500
1.340	1.500	.510	-	1.475	.500	W1-1500-500
1.590	1.750	.510	-	1.725	.500	W1-1750-500
2.340	2.500	.510	-	2.475	.500	W1-2500-500
.750	1.000	.635	.773	.975	.625	W2-1000-625
1.250	1.500	.385	1.273	1.475	.375	W2-1500-375
1.250	1.500	.510	1.273	1.475	.500	W2-1500-500
1.375	1.625	.385	1.398	1.600	.375	W2-1625-375
1.500	1.750	.510	1.523	1.725	.500	W2-1750-500
1.750	2.000	.385	1.773	1.975	.375	W2-2000-375
1.750	2.000	.510	1.773	1.975	.500	W2-2000-500
1.750	2.000	.635	1.773	1.975	.625	W2-2000-625
2.000	2.250	.510	2.023	2.225	.500	W2-2250-500
2.000	2.250	.760	2.023	2.225	.750	W2-2250-750
2.250	2.500	.385	2.273	2.475	.375	W2-2500-375
2.250	2.500	.510	2.273	2.475	.500	W2-2500-500
2.375	2.625	.760	2.398	2.600	.750	W2-2625-750
2.500	2.750	.510	2.523	2.725	.500	W2-2750-500
2.625	2.875	.760	2.648	2.850	.750	W2-2875-750
2.750	3.000	.385	2.773	2.975	.375	W2-3000-375
2.750	3.000	.510	2.773	2.975	.500	W2-3000-500
2.750	3.000	1.010	2.773	2.975	1.000	W2-3000-1000
3.000	3.250	.510	3.023	3.225	.500	W2-3250-500
3.000	3.250	.760	3.023	3.225	.750	W2-3250-750
3.250	3.500	.385	3.273	3.475	.375	W2-3500-375
3.250	3.500	.510	3.273	3.475	.500	W2-3500-500
3.250	3.500	.635	3.273	3.475	.625	W2-3500-625
3.375	3.625	1.010	3.398	3.600	1.000	W2-3625-1000
3.500	3.750	.510	3.523	3.725	.500	W2-3750-500
3.500	3.750	1.010	3.523	3.725	1.000	W2-3750-1000
3.625	3.875	1.010	3.648	3.850	1.000	W2-3875-1000
3.750	4.000	.385	3.773	3.975	.375	W2-4000-375
3.750	4.000	.510	3.773	3.975	.500	W2-4000-500
3.750	4.000	1.010	3.773	3.975	1.000	W2-4000-1000
3.875	4.125	.510	3.898	4.100	.500	W2-4125-500
4.000	4.250	.510	4.023	4.225	.500	W2-4250-500
4.000	4.250	.765	4.023	4.225	.750	W2-4250-750
4.000	4.250	1.010	4.023	4.225	1.000	W2-4250-1000
4.250	4.500	.510	4.273	4.475	.500	W2-4500-500
4.250	4.500	1.010	4.273	4.475	1.000	W2-4500-1000

Guide Ring - W2

(Inch Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Groove Width	Gland Dia.	Piston Dia.	Seal Height	Reference (For order processing)
d	D	L	d1	D1	H	
4.500	4.750	.510	4.523	4.725	.500	W2-4750-500
4.500	4.750	1.010	4.523	4.725	1.000	W2-4750-1000
4.750	5.000	.510	4.773	4.975	.500	W2-5000-500
4.750	5.000	1.010	4.773	4.975	1.000	W2-5000-1000
4.750	5.000	1.760	4.773	4.975	1.750	W2-5000-1750
4.875	5.125	.510	4.898	5.100	.500	W2-5125-500
5.000	5.250	.510	5.023	5.225	.500	W2-5250-500
5.000	5.250	1.010	5.023	5.225	1.000	W2-5250-1000
5.250	5.500	.510	5.273	5.475	.500	W2-5500-500
5.250	5.500	.760	5.273	5.475	.750	W2-5500-750
5.250	5.500	1.010	5.273	5.475	1.000	W2-5500-1000
5.500	5.750	.510	5.523	5.725	.500	W2-5750-500
5.500	5.750	.635	5.523	5.725	.625	W2-5750-625
5.500	5.750	.885	5.523	5.725	.875	W2-5750-875
5.500	5.750	1.010	5.523	5.725	1.000	W2-5750-1000
5.500	5.750	1.760	5.523	5.725	1.750	W2-5750-1750
5.750	6.000	.510	5.773	5.975	.500	W2-6000-500
5.750	6.000	.760	5.773	5.975	.750	W2-6000-750
5.750	6.000	.885	5.773	5.975	.875	W2-6000-875
5.750	6.000	1.010	5.773	5.975	1.000	W2-6000-1000
6.000	6.250	.510	6.023	6.225	.500	W2-6250-500
6.000	6.250	.635	6.023	6.225	.625	W2-6250-625
6.000	6.250	.760	6.023	6.225	.750	W2-6250-750
6.000	6.250	1.010	6.023	6.225	1.000	W2-6250-1000
6.000	6.250	1.510	6.023	6.225	1.500	W2-6250-1500
6.250	6.500	.510	6.273	6.475	.500	W2-6500-500
6.250	6.500	1.010	6.273	6.475	1.000	W2-6500-1000
6.500	6.750	.510	6.523	6.725	.500	W2-6750-500
6.500	6.750	.635	6.523	6.725	.625	W2-6750-625
6.750	7.000	.510	6.773	6.975	.500	W2-7000-500
6.750	7.000	.760	6.773	6.975	.750	W2-7000-750
6.750	7.000	1.010	6.773	6.975	1.000	W2-7000-1000
6.750	7.000	1.510	6.773	6.975	1.500	W2-7000-1500
7.000	7.250	.510	7.023	7.225	.500	W2-7250-500
7.000	7.250	.760	7.023	7.225	.750	W2-7250-750
7.000	7.250	1.010	7.023	7.225	1.000	W2-7250-1000
7.250	7.500	.510	7.273	7.475	.500	W2-7500-500
7.250	7.500	.760	7.273	7.475	.750	W2-7500-750
7.250	7.500	1.010	7.273	7.475	1.000	W2-7500-1000
7.500	7.750	.510	7.523	7.725	.500	W2-7750-500

SPEC SEAL
Seals & O-rings Specialist

(Inch Size)

Rod/ Groove Dia.	Bore/ Groove Dia.	Groove Width	Gland Dia.	Piston Dia.	Seal Height	Reference (For order processing)
d	D	L	d1	D1	H	
7.750	8.000	.510	7.773	7.975	.500	W2-8000-500
7.750	8.000	.760	7.773	7.975	.750	W2-8000-750
7.750	8.000	1.010	7.773	7.975	1.000	W2-8000-1000
8.000	8.250	.510	8.023	8.225	.500	W2-8250-500
8.000	8.250	.635	8.023	8.225	.625	W2-8250-625
8.000	8.250	.760	8.023	8.225	.750	W2-8250-750
8.250	8.500	.760	8.273	8.475	.750	W2-8500-750
8.250	8.500	1.010	8.273	8.475	1.000	W2-8500-1000
8.500	8.750	.510	8.523	8.725	.500	W2-8750-500
8.500	8.750	.635	8.523	8.725	.625	W2-8750-625
8.500	8.750	.760	8.523	8.725	.750	W2-8750-750
8.750	9.000	.510	8.773	8.975	.500	W2-9000-500
8.750	9.000	.760	8.773	8.975	.750	W2-9000-750
9.000	9.250	.510	9.023	9.225	.500	W2-9250-500
9.750	10.000	.510	9.773	9.975	.500	W2-10000-500
9.750	10.000	1.010	9.773	9.975	1.000	W2-10000-1000
10.000	10.250	.510	10.023	10.225	.500	W2-10250-500
10.250	10.500	.510	10.273	10.475	.500	W2-10500-500
10.375	10.625	1.010	10.398	10.600	1.000	W2-10625-1000
10.750	11.000	.322	10.773	10.975	.312	W2-11000-312
10.750	11.000	.760	10.773	10.975	.750	W2-11000-750
11.250	11.500	.635	11.273	11.475	.625	W2-11500-625
11.750	12.000	.510	11.773	11.975	.500	W2-12000-500
11.750	12.000	.760	11.773	11.975	750	W2-12000-750

10 ข้อแนะนำในการออกแบบสร้างกระบอกไฮโดรลิค / การใช้และการประกอบซีลอย่างถูกวิธี
10 Recommendations for Design / Cylinder Manufacturing / Use & care for fitting of Seals

บริษัท สเป็คซีล จำกัด คัดสรรและตรวจสอบคุณภาพของซีลที่จำหน่ายด้วยความตั้งใจ และทุ่มเทในทุกขั้นตอน เพื่อให้ซีลมีอายุการใช้งานที่ยาวนาน สร้างความไว้วางใจ และความพึงพอใจต่อลูกค้า แต่อย่างไรก็ตามจากประสบการณ์อันยาวนานทางด้านซีลของบริษัทฯ ได้พบว่าสาเหตุของความเสียหายของซีลนั้นสามารถป้องกันเบื้องต้นได้หากได้รับการดูแลเอาใจใส่ในขั้นตอนของการออกแบบสร้างกระบอกและการประกอบซีลเพื่อใช้งานอย่างถูกวิธีเพื่อให้ซีลมีอายุการใช้งานที่ยาวนาน ดังข้อแนะนำต่อไปนี้

1. : ควรออกแบบกระบอกที่ใช้งานโดยใส่ตัวประคอง (Wear Ring) ทั้งที่ลูกสูบและที่แกน เพราะในการใช้งานของกระบอก โดยทั่วไปจะพบว่ากระบอกจะต้องรับแรงเบียดข้าง (Side Load) ซึ่งเป็นสาเหตุทำให้เสื้อสูบ (Bore) และแกน (Rod) เกิดรอย และจะทำให้ซีลเกิดความเสียหายในเวลาต่อมาหากไม่ได้ใส่ตัวประคอง (Wear Ring) ไว้
2. : ควรเก็บซีลไว้ในที่แห้ง ในอุณหภูมิ ประมาณ 20°C สะอาดปราศจากฝุ่นละออง ไม่ควรให้ถูกแสงโดยตรง
3. : ตรวจสอบอย่างละเอียดว่าชิ้นงานเหล็กไม่มีส่วนคมที่จะทำให้ซีลเกิดความเสียหายโดยเฉพาะอย่างยิ่งในส่วนของร่องที่จะใส่ซีล เกลียวของท่อส่งน้ำมัน และเกลียวอื่นๆ ที่ซีลจะต้องสอดผ่านเวลาประกอบ
4. : ควรทำความสะอาดร่องที่จะใช้ใส่ซีล ให้มั่นใจว่าไม่มีเศษผงของเหล็ก รวมถึงความสะอาดของพื้นผิวของชิ้นงานที่ซีลจะต้องเสียดสีเวลาใช้งาน รวมทั้งควรตรวจสอบค่าความเรียบของร่องต่างๆ ให้ได้ตามพิกัด
5. : หากจะต้องประกอบซีลผ่านเกลียวทางปากกระบอกซึ่งขนาดของเกลียวนั้นจะใหญ่กว่าขนาดโตนอกของซีลอยู่เล็กน้อยควรป้องกันโดยอย่าให้ซีลสัมผัสกับเกลียวโดยตรง ควรใช้ปลอกที่ทำจากพลาสติกแข็งเพื่อช่วยในการประกอบ
6. : ควรตรวจสอบความถูกต้องของรุ่น ขนาด รวมถึงเบอร์ของซีลที่จะใช้ในการประกอบกระบอก หากมีข้อสงสัยควรติดต่อกับทางสเป็คซีลก่อนทำการประกอบซีลทุกครั้ง
7. : เพื่อให้ง่ายต่อการประกอบ ก่อนการประกอบซีลทุกวงควรทาน้ำมันหล่อลื่นหรือจาระบีบางๆ ที่ตัวซีลรวมถึงชิ้นส่วนของเหล็กที่สัมผัสกับผิวซีลในระหว่างการประกอบ
(ไม่ควรใช้จาระบีที่มีส่วนผสมของซิลิโคน ในระบบไฮโดรลิคทั่วไป)
8. : ในระหว่างการประกอบซีลเข้าชิ้นงานแต่ละชิ้นโดยเฉพาะที่ลูกสูบ ควรระวังอย่าวางหรือทับจนทำให้ซีลที่ประกอบอยู่ที่ลูกสูบเสียรูปจากแรงกดก่อนทำการประกอบลูกสูบเข้าที่เสื้อสูบ และตรวจสอบให้มั่นใจก่อนการประกอบเข้าที่เสื้อสูบว่าทุกชิ้นส่วนยังคงความสะอาดอยู่
9. : ไม่ควรใช้ไขควงหรืออุปกรณ์อื่นๆ ที่ทำด้วยเหล็กในการประกอบซีล หากจำเป็นและหลีกเลี่ยงไม่ได้ควรตรวจสอบว่าผิวของไขควงมีความเรียบและไม่มีส่วนแหลมคม หลังจากประกอบแล้วควรตรวจสอบว่าส่วนของซีลที่สัมผัสกับไขควงหรืออุปกรณ์อื่นที่ทำด้วยเหล็กไม่มีร่องรอยความเสียหายที่ผิวซีล
10. : ทำการเดินระบบไฮโดรลิคเพื่อชำระล้างน้ำมันก่อนทำการติดตั้งกระบอกไฮโดรลิคเข้าสู่ระบบ

คำถามเกี่ยวกับซีลไฮโดรลิคที่ถูกถามประจำ
Frequently Asked Questions (FAQ)

ในการเลือกซื้อซีลแต่ละครั้งท่านอาจจะมีคำถามหรือข้อสงสัยเกี่ยวกับซีลซึ่งยังหาคำตอบไม่ได้ ทำให้ท่านไม่สามารถเลือกซีลให้ได้ตรงตามวัตถุประสงค์ของการใช้งาน จึงเป็นสาเหตุอย่างหนึ่งที่ทำให้ซีลที่ท่านใช้งานอยู่นั้นไม่ได้ประสิทธิภาพเต็มที่ หรือมีอายุการใช้งานของซีลสั้นกว่าที่ควรจะเป็น ทาง**บริษัท สเป็คซีล จำกัด** จึงได้รวบรวมข้อมูล **คำถามเกี่ยวกับซีลไฮโดรลิคที่ทางบริษัทฯ ถูกถามเป็นประจำ** แล้วตอบอยู่ในส่วน Q & A นี้ เพื่อเป็นแนวทางเบื้องต้นในการเลือกซื้อซีลของท่านในครั้งต่อไป

ทางบริษัทฯ หวังเป็นอย่างยิ่งว่าท่านจะได้รับประโยชน์จากข้อมูลคำตอบเหล่านี้ไม่มากก็น้อย และหากท่านต้องการข้อมูลเพิ่มเติม หรือมีข้อสงสัยเกี่ยวกับการใช้งานของซีลไฮโดรลิค ซีลนิวเมติค และ โอริง ท่านสามารถสอบถามได้โดยส่งคำถามและโปรดระบุรายละเอียดที่จะสามารถติดต่อท่านได้โดยตรงอย่างชัดเจน ส่งมาทางแฟกซ์ หมายเลข **02-8810550** ท่านจะได้รับข้อมูลคำตอบในไม่ช้า.....

Q & A

Q : ซีลที่ดีควรมีอายุการใช้งานนานเท่าใด

A : อายุการใช้งานของซีล มีปัจจัยแวดล้อมมากมาย เช่น ชั่วโมงการใช้งานต่อวัน หากเครื่องจักรทำงานตลอด 24 ชั่วโมง ก็จะทำให้อายุของซีลสั้นลง ทั้งนี้อายุการใช้งานของซีลแต่ละตัว จะขึ้นอยู่กับจำนวนครั้งในการใช้งาน (Cycle Time) ความร้อน และความสะอาดของน้ำมันในระบบ ทั้งหมดนี้จะเป็นตัวแปรที่ทำให้มีผลกับอายุการใช้งานของซีล จึงไม่มีตัวเลขตายตัวที่จะบ่งบอกถึงอายุการใช้งานของซีลได้

Q : ควรเก็บรักษาซีลอย่างไร ให้มีคุณภาพดีก่อนการประกอบใช้งาน

A : ควรเก็บซีลไว้ในที่แห้ง สะอาดปราศจากฝุ่นละออง มีอุณหภูมิประมาณ 20°C ไม่ควรให้ถูกแสงโดยตรง เท่านี้ก็จะสามารถรักษาคุณภาพของซีลก่อนการใช้งานได้ยาวนาน

Q : ซีลที่ผลิตจากยาง เมื่อเทียบกับโพลียูรีเทน วัสดุชนิดใดดีกว่ากัน

A : วัสดุแต่ละชนิดจะมีข้อดีและข้อด้อยต่างกันออกไป แล้วแต่ลักษณะการใช้งาน เช่น วัสดุที่ทำด้วยยางจะมีความยืดหยุ่นสูงจึงสามารถใช้งานได้ดีกับลักษณะงานแรงดันต่ำ (Low Pressure) แต่ถ้านำไปใช้งานกับงานแรงดันสูง (High Pressure) ก็จะทนทานสู้วัสดุที่ทำจากโพลียูรีเทนไม่ได้ อีกทั้งโพลียูรีเทนก็ยังสามารถทนการสึกหรอที่เกิดจากการเสียดสี (Wear Resistant) ได้ดีกว่า จึงเห็นได้ว่าผู้ผลิตซีลส่วนใหญ่หันมาผลิตซีลที่ทำจากวัสดุโพลียูรีเทนมากขึ้น รวมถึงในลักษณะงานที่ใช้กับลม (Pneumatic) ซึ่งมีแรงดันต่ำ (Low Pressure) ก็นิยมใช้วัสดุโพลียูรีเทนมาผลิตเป็นซีลเช่นกัน แต่ทั้งนี้จะต้องคำนึงถึงค่าความแข็งของวัสดุนั้นๆ ด้วยว่าเหมาะสมหรือไม่

Q : วัสดุโพลียูรีเทนที่ใช้ในการกลึงซีลจะมีคุณภาพดีเทียบเท่ากับวัสดุที่ใช้ผลิตซีลมาตรฐานหรือไม่

A : ในการผลิตซีลมาตรฐานทั่วไปที่ทำจากวัสดุโพลียูรีเทน จะใช้วิธีการขึ้นโมลด์แล้วฉีดเป็นวงและก็มีผู้ผลิตบางรายใช้วิธีการหลอขึ้นรูปจากโพลียูรีเทนเหลว เช่นเดียวกันกับวัสดุโพลียูรีเทนแท่งที่ทางสเป็คซีลคัดสรรเป็นพิเศษและนำเข้ามา ส่วนมากจะใช้วิธีการขึ้นโมลด์แล้วฉีดเป็นแท่งและนำมากลึงให้ได้เป็นซีลสำเร็จรูป แต่ทั้งนี้ก็จะมีวัสดุบางขนาดที่มีความจำเป็นจะต้องใช้วิธีการหล่อขึ้นรูป เพราะมีข้อจำกัดของขนาดและน้ำหนักของวัสดุในการฉีดซึ่งทางผู้ผลิตก็ควบคุมให้ได้คุณภาพใกล้เคียงกับวัสดุที่ผลิตด้วยการฉีด ฉะนั้นกรรมวิธีในการผลิตวัสดุไม่ว่าจะเป็นซีลสำเร็จรูป หรือ ซีลที่ได้มาจากการกลึง จึงมีกรรมวิธีคล้ายคลึงกัน แต่ต้องเพิ่มขั้นตอนรายละเอียดการกลึงสำหรับงานของซีลกลึงเท่านั้น

Q : ควรจะวัดขนาดของซีลอย่างไรให้ได้ขนาดที่ถูกต้อง

A : เป็นเรื่องยากที่จะวัดขนาดของซีลให้ถูกต้อง 100% เพราะผู้ผลิตซีลแต่ละรายจะมีเทคนิคในการออกแบบซีลไม่เหมือนกัน แม้ว่าซีลนั้นๆ จะนำไปใช้ในร่องชิ้นงานเดียวกัน แต่ขนาดที่วัดได้ที่ตัวซีล ก็อาจจะแตกต่างกันไป ดังนั้น การที่จะหาขนาดซีลที่ถูกต้องควรจะดูจากตัวเลขที่มีอยู่ที่ตัวซีลหรือถ้าไม่มีก็ควรวัดจากขนาดของร่องชิ้นงานแล้วเทียบจากแคตตาล็อคของซีลที่มีอยู่ จะทำให้ได้ขนาดของซีลที่ถูกต้อง 100%

Q : ควรจะเลือกขนาดของซีลให้เต็มร่องพอดีกับขนาดชิ้นงานเหล็กหรือไม่ และควรเลือกขนาดของซีลอย่างไร

A : มีผู้ใช้งานเป็นจำนวนมากที่เข้าใจผิดเกี่ยวกับเรื่องขนาดความสูงของซีลที่จะนำไปใช้ในร่องชิ้นงานจึงทำให้เลือกขนาด ความสูงของซีลผิดความจริงซีลแทบทุกรูปแบบจะออกแบบมาให้มีขนาดความสูงของซีลเล็กกว่าขนาดของร่องชิ้นงานเพื่อให้มีเนื้อที่ในการขยายตัวของซีลนั้นๆ หลังการประกอบเข้าในกระบอก หากนำซีลที่มีความสูงเท่าขนาดของชิ้นงานมาใช้จะทำให้ซีลในกระบอกนั้นไม่สามารถทำงานได้เต็มประสิทธิภาพ ส่วนขนาดที่พอเหมาะสำหรับซีลชนิดต่างๆ จะขึ้นอยู่กับรูปแบบ (Profile) ของซีลและแรงดัน (Pressure) ที่จะใช้งาน ซึ่งสามารถหารายละเอียดได้จากคู่มือเล่มนี้

Q : ถ้าจะออกแบบร่องเพื่อใส่ซีล ควรจะวัดซีลนั้นเพื่อกำหนด และเผื่อค่าร่องของซีล ใช่หรือไม่

A : หากมีความต้องการที่จะออกแบบชิ้นงานเพื่อใส่ซีล ควรศึกษาคู่มือของซีลให้ละเอียด แล้วกำหนดค่าร่องของชิ้นงานตามคู่มือเท่านั้น ไม่ควรกำหนดค่าร่องของซีลโดยการวัดขนาดจากซีลนั้นๆ แล้วเผื่อค่าร่องเองเพราะเสี่ยงต่อการรั่วที่อาจจะเกิดขึ้นได้

Q : ทำไมจึงมีฟิล์มบางๆ ของน้ำมันเกาะออกมากับเพลา ทั้งที่เพิ่งเปลี่ยนซีล หรือ เป็นกระบอกที่เพิ่งทำใหม่

A : ผู้ผลิตซีลส่วนใหญ่จะคำนึงถึงแรงเสียดทาน (Friction) ที่เกิดขึ้นในการทำงานของซีล ซึ่งเป็นสาเหตุหลักที่ทำให้เกิดความร้อน (Heat) ที่นำมาซึ่งการสึกหรอ (Wear) ของซีล จึงจำเป็นต้องยอมให้มีฟิล์มบางๆ เกาะมากับเพลาขณะใช้งาน แต่ทั้งนี้ก็ยังต้องให้ฟิล์มนั้นมีปริมาณอยู่ในค่าที่กำหนด อาจมีซีลบางประเภทที่มีคุณสมบัติสามารถกันรั่วได้โดยไม่มีฟิล์มเกาะออกมากับเพลา ซึ่งจะต้องผลิตด้วยวัสดุที่ทนทานต่อการสึกหรอสูง

Q : เมื่อเปลี่ยนซีลในกระบอกควรเปลี่ยนเฉพาะซีลที่รั่ว หรือ เปลี่ยนซีลทั้งหมด เพราะอะไร

A : จะเป็นประโยชน์ต่อท่านเจ้าของงานเป็นอย่างยิ่ง ถ้าท่านเปลี่ยนซีลทั้งกระบอกในคราวเดียว เพราะการถอดประกอบกระบอกแต่ละครั้ง ราคาของซีลต่อชุดที่ต้องเปลี่ยน เมื่อเทียบกับค่าแรงงานในการเปลี่ยนรวมถึงระยะเวลาที่สูญเสียไปในการผลิต (Down Time) แล้ว ราคาซีลต่อชุดจะถูกกว่ามาก

Q : วัสดุ PTFE และ Teflon ต่างกันอย่างไร

A : ความจริงแล้ววัสดุทั้ง 2ชนิดนี้ เป็นวัสดุที่ทำมาจากพื้นฐาน (Base) ของวัสดุเดียวกัน เป็นวัสดุที่มีสารหล่อลื่นในตัวเองสูง สามารถทนความร้อนได้ดี แต่มีความยืดหยุ่นต่ำ จึงนิยมนำมาใช้งานร่วมกับวัสดุอื่นที่มีความยืดหยุ่นสูงกว่า PTFE มีชื่อย่อมาจาก Polytetrafluoroethylene ส่วน Teflon เป็นชื่อเฉพาะทางการค้า ของ Dupont เท่านั้น

Q : ซีลยูคัพที่มียางอยู่ในร่องของซีล คุณสมบัติแตกต่างจากซีลยูคัพที่ไม่มียางในร่องหรือไม่

A : ซีลยูคัพโดยปกติจะผลิตด้วยวัสดุโพลียูริเทนซึ่งจะมีค่าการคืนตัวของวัสดุ (Compression Set) ต่ำกว่าวัสดุที่ผลิตจากยาง จึงมีผู้ผลิตซีลบางรายนำวัสดุที่เป็นยางมาใส่ประกอบเข้าในร่องของยูคัพประเภทนี้ เพราะวัสดุที่ผลิตจากยางจะให้ค่าการคืนตัวของวัสดุ (Compression Set) สูงกว่า จึงมีผลให้ Lip ของซีลนั้นสามารถยืดหยุ่นตัวได้สูงขึ้นและมีประสิทธิภาพในการทำงานช่วงแรงดันต่ำ (Low Pressure) ดีกว่าซีลยูคัพทั่วไป

Q : ซีลกันฝุ่นที่มีร่องด้านหลัง มีลักษณะการใช้งานแตกต่างจากซีลกันฝุ่นที่ไม่มีร่องด้านหลังอย่างไร

A : ร่องด้านหลังของซีลกันฝุ่น ถูกออกแบบมาเพื่อกักน้ำมันที่เป็นฟิล์มที่เกาะออกมากับเพลาขณะใช้งาน ทำให้เพลาแห้งไม่มีฟิล์มของน้ำมันเกาะออกมากับเพลา แต่การใช้งานในลักษณะนี้จะต้องมีรูระบาย (Drain) น้ำมันอยู่ที่ชิ้นงานระหว่างตัวซีลกันน้ำมันกับซีลกันฝุ่น มิฉะนั้นแล้วจะทำให้เกิดการเก็บกักน้ำมันในระหว่างช่องดังกล่าวจนทำให้เกิดเป็นแรงดันของน้ำมันดันซีลกันฝุ่นหลุดออกจากร่องของชิ้นงานได้ในขณะใช้งาน ในทางกลับกันซีลกันฝุ่นที่ไม่มีร่องด้านหลัง ก็ไม่จำเป็นจะต้องมีรูระบาย (Drain) น้ำมัน เพราะฟิล์มของน้ำมันสามารถระบายออกมาเป็นฟิล์มเกาะกับเพลาในขณะใช้งานได้อยู่แล้ว ดังนั้นซีลกันฝุ่นทั้ง 2 รุ่นจึงมีข้อดีแตกต่างกันไปขึ้นอยู่กับลักษณะงานที่จะนำไปเลือกใช้

Q : จะนำซีลแกน มาใช้เป็นซีลลูกสูบได้หรือไม่

A : ไม่ควรนำซีลที่ออกแบบมาสำหรับใช้เฉพาะที่แกนมาใช้งานที่ลูกสูบ เพราะซีลที่ออกแบบมาเพื่อใช้ที่แกนอย่างเดียวนั้นจะมีการออกแบบให้ Lip ด้านในของตัวซีลมีความแข็งแรง ทนทาน มากกว่า Lip ด้านนอก เพื่อรับกับลักษณะงานที่จะต้องมีการเคลื่อนที่และเสียดสีกับเพลา แต่ Lip ด้านนอกของซีลออกแบบมาเพื่ออยู่ในร่องของชิ้นงานที่จะรับแรงดัน (Pressure) เท่านั้น ไม่มีการเสียดสีหรือการเคลื่อนที่ในระหว่างการใช้งาน ฉะนั้น หากท่านนำซีลที่ไม่ตรงกับลักษณะงาน (Application) มาใช้ซีลก็จะไม่สามารถใช้งานได้นานเท่าที่ควรจะเป็น

Q : ซีลวีแพ็คกิ้งที่มีตัววีริงทำจากยางประกอบสลับกับวีริงที่ทำด้วยยางผสมผ้าใบอยู่ในหนึ่งชุด แตกต่างกับวีแพ็คกิ้งที่เป็นยางผสมผ้าใบทั้งชุดอย่างไร

A : เนื่องจากซีลที่ผลิตจากยางจะมีความยืดหยุ่นตัวสูงกว่าซีลที่ผลิตจากยางผสมผ้าใบจึงสามารถซีลน้ำมันได้ดีในการทำงานช่วงแรงดันน้ำมันต่ำ (Low Pressure) แต่จะไม่สามารถซีลน้ำมันได้ดีในช่วงของแรงดันน้ำมันขณะทำงาน (Working Pressure) ที่มีแรงดันน้ำมันสูงขึ้น เพราะความแข็งของยางไม่สามารถทนแรงดันสูงได้จึงต้องมีการประกอบสลับระหว่างวีริงที่ทำจากยางผสมผ้าใบกับวีริงที่ทำจากยางล้วน ซึ่งจะเหมาะกับลักษณะงานที่มีการทำงานของแรงดันน้ำมันที่ไม่คงที่ มีการเปลี่ยนแปลงของแรงดันน้ำมันบ่อยๆ ส่วนซีลวีแพ็คกิ้งที่เป็นวัสดุยางผสมผ้าใบทั้งชุดจะมีความแข็งแรงทนทานกว่าหากนำไปใช้กับงานที่มีแรงดันน้ำมันสม่ำเสมอคงที่

Q : ซีล Double Acting สามารถใช้เป็นงาน Single Acting ได้หรือไม่ และจะมีผลอย่างไร

A : การออกแบบซีลแต่ละชนิดผู้ออกแบบจะคำนึงถึงข้อดีของการใช้งานในตัวซีลนั้นเป็นหลักอยู่แล้ว ฉะนั้นซีลลักษณะ Double Acting ที่มีการออกแบบซีลมาให้ใช้งานทั้ง 2 ด้าน จึงมีการหล่อลื่นของน้ำมันที่เกิดจากแรงดัน (Pressure) ตลอดเวลา ซึ่งแตกต่างจากซีล Single Acting จะถูกออกแบบมาเพื่อใช้งานด้านเดียว แรงดันของน้ำมันจึงมีด้านเดียว ผลของการใช้ซีล Double Acting ในงาน Single Acting จะเห็นได้จากความร้อนที่เกิดขึ้นกับ Lip ของซีลอีกด้านที่ไม่ได้ใช้งานส่งผลให้กระบอกมีความร้อนเพิ่มขึ้นโดยไม่จำเป็น อายุงานของซีลก็จะสั้นลง จึงควรเลือกซีลให้เหมาะสมกับลักษณะงานจะได้ผลที่คุ้มค่าที่สุด

Q : วัสดุของเทปกันสึก (Wear Ring) มีให้เลือกหลายชนิด จะเลือกใช้อย่างไรจึงจะเหมาะสมกับลักษณะงาน

A : วัสดุที่ใช้ผลิตเทปกันสึกมีด้วยกันหลายชนิด แต่ละชนิดมีคุณสมบัติการใช้งานที่แตกต่างกันออกไป ซึ่งสามารถจำแนกได้คร่าวๆ ดังนี้ วัสดุที่ผลิตจาก PTFE ผสมด้วย Bronze สามารถใช้งานได้ดีกับกระบอกที่ต้องการความเร็วของ Speed ในการใช้งานสูง แต่การรับแรงเบียด (Load) จะไม่สามารถรับได้มากนัก จึงใช้งานได้ดีกับกระบอกที่ติดตั้งใช้งานในแนวตั้ง และไม่มีแรงเบียดข้าง (Side Load) เท่านั้น หากต้องการใช้งานในลักษณะงานที่มีแรงเบียดสูง (High Side Load) วัสดุที่ทำจากเนื้อผ้าใบ (Polyester) หรือวัสดุที่ผลิตจาก Phenolic จะใช้งานได้ดีกว่า แต่ทั้งนี้ก็ยังมีแหวนกันสึกที่ผลิตจากวัสดุ POM ซึ่งสามารถทนแรงเบียด(Load) ได้สูงพอสมควร ราคาประหยัด แต่มีจำหน่ายเฉพาะเป็นวงสำเร็จรูปตามขนาดที่กำหนดเท่านั้น ฉะนั้นการเลือกวัสดุของเทปกันสึกจึงต้องคำนึงถึงลักษณะการใช้งาน รวมถึงอุณหภูมิการใช้งานเป็นหลักสำคัญ (สามารถดูรายละเอียดเพิ่มเติมได้ในหมวด Wear Ring หน้า...381)

นึกถึงซีล คิดถึงสเปคซีล

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