Hydraulic Seals

TRIDENT PRECISION INTERNATIONAL

151, SECTOR-06,IMT MANESAR, GURGAON,HARYANA

122050

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Slipper Seal® Rod sealing set

OD

The single-acting OD rod sealing set featuring a Slipper Seal® design consists of a PTFE rod seal and an elastomer O-ring as a preloading element. The asymmetric cross-section of the seal has been designed for optimum return of drag oil during the stroke in both directions. The optimum sealing effect is achieved by installation in a tandem arrangement in combination with a double wiper ring. The OD product series is particularly well suited for piston rods in control cylinders, servo-assisted systems, machine tools and quick-acting cylinders. The sealing set is successfully used in the automotive industry (e.g. in shock absorbers) and the process industry as well. Due to the material combination of the slide ring (PTFE) and the O-ring (elastomer), this product is suitable for a wide range of applications, especially for aggressive media and/or high temperatures. Several alternative compounds may be selected depending on the specific application profile.

- Good sealing performance in extremely small assembly conditions.
- Excellent wear resistance.
- Minimal break-away and dynamic friction and no stick-slip tendency ensures uniform motion even at low speeds.
- Good energy efficiency due to low friction.
- Insensitive to pressure peaks.
- High temperature resistance assured by suitable O-ring compound selection.
- High extrusion resistance.
- Adaptable to nearly all media thanks to high chemical resistance of the sealing ring and large O-ring compound selection.
- Dimensions according to ISO 7425-2.
- Also available as double-acting version.
- Short axial assembly length.
- Installation in closed and undercut housings.
- Available in diameters from 4 to 4500 mm.
- Additional sizes of machined products available on short notice.

Range of application

Rod sealing set for hydraulic cylinders.

Operating pressure	≤ 400 bar
in case of reduced extrusion gap (H7/f7) and large cross sections	≤ 600 bar
Operating temperature	-30 °C to +100 °C [1)]
Sliding speed	≤ 4 m/s

[1)] With deviation from standard temperature range, please contact our consultancy service for adequate O-ring compound.

Compounds

Sealing ring: Polon® 052, modified PTFE + 40 % bronze.
O-ring: N0674, NBR elastomer with approx. 70 Shore A.

Installation

For diameters < 30 mm open grooves are required.

In case of special operating conditions (specific pressure loads, temperature, speed, use in water, HFA, HFB fluids etc.), please contact our consultancy service for a selection of the material and design best suiting your particular application requirements.

Rod seals

T+P
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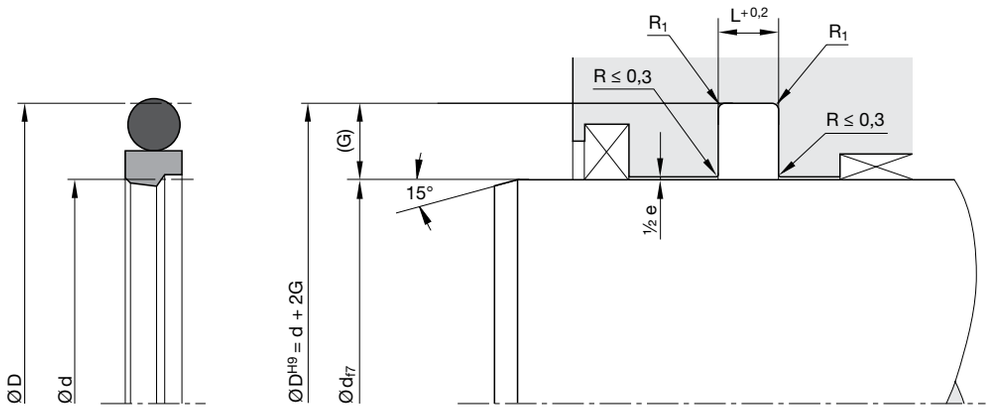

For surface finish, lead in chamfer and other installation dimensions see „General installation guidelines“.

Housing dimensions

Series no.	Cross-section	O-ring cross-section (mm)	Recommended rod Ø range d (mm) ≥	<	Groove width L (mm)	Groove depth G (mm)	Gap max. 0200 bar e (mm)	Gap max. 200400 bar e (mm)	Radius max. R_1 (mm)	ISO[1)]
00170	A	1.78	4	8	2.2	2.45	0.6 - 0.4	0.4 - 0.2	0.5	
00170	B	2.62	8	19	3.2	3.65	0.8 - 0.5	0.5 - 0.3	0.5	
00170	C	3.53	19	38	4.2	5.35	0.8 - 0.5	0.5 - 0.3	0.5	
00170	D	5.33	38	200	6.3	7.55	1 - 0.6	0.6 - 0.4	0.9	
00170	E	6.99	200	256	8.1	10.25	1 - 0.6	0.6 - 0.4	0.9	
00170	F	6.99	256	650	8.1	12	1.2 - 0.7	0.7 - 0.5	0.9	
00170	G	8.4	650	1000	9.5	13.65	1.4 - 0.8	0.8 - 0.6	0.9	
00170	H	12	1000	-	13.8	19	1.4 - 0.8	0.8 - 0.6	0.9	
00170	K	1.78	4	8	2.2	2.5	0.6 - 0.4	0.4 - 0.2	0.5	•
00170	L	2.62	8	19	3.2	3.75	0.8 - 0.5	0.5 - 0.3	0.5	•
00170	M	3.53	19	38	4.2	5.5	0.8 - 0.5	0.5 - 0.3	0.5	•
00170	N	5.33	38	200	6.3	7.75	1 - 0.6	0.6 - 0.4	0.9	•
00170	O	6.99	200	256	8.1	10.5	1 - 0.6	0.6 - 0.4	0.9	•
00170	P	6.99	256	650	8.1	12.25	1.2 - 0.7	0.7 - 0.5	0.9	•

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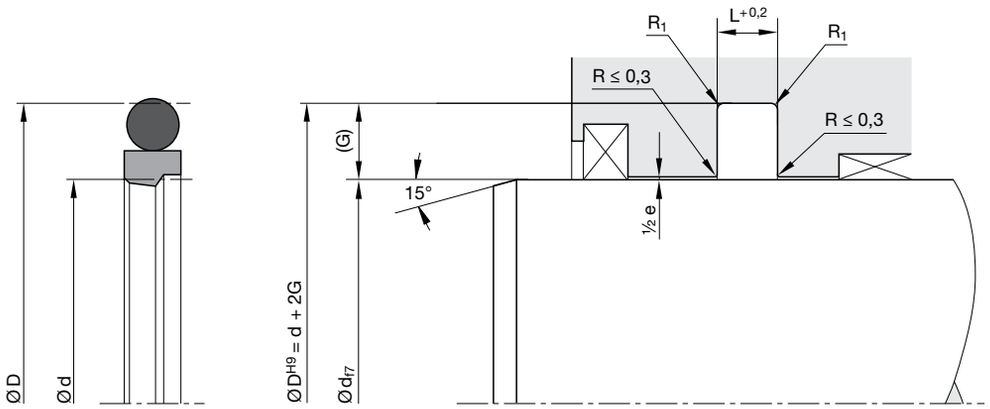

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Ordering example

Rod diameter 40 mm

OD 0400 052 00171 D (40,0 × 55,1 × 6,3)

OD	Profile			
0400	Rod diameter × 10			
052	Compound			
00171	Series no. / compound code O-ring			
	00170	without O-ring		
	00171	N0674 (NBR)	70±5 Shore A	-30 / +110 °C
	00172	V0747 (FKM)	75±5 Shore A	-25 / +200 °C
	00173	N0756 (NBR)	75±5 Shore A	-50 / +110 °C
	00174	E0540 (EPDM)	80±5 Shore A	-40 / +150°C
	00175	N3578 (NBR)	75±5 Shore A	-30 / +110 °C
	00176	N0552 (NBR)	90±5 Shore A	-30 / +100 °C
	00177	N1173 (HNBR)	70±5 Shore A	-30 / +150 °C
D	Cross-section			

Please note:
For certain applications, it might be convenient to use a non-standard cross-section reduced or heavier. In these cases, please replace the standard cross-section code (in above example: „D“) by the one you require (for example „C“ or „E“).

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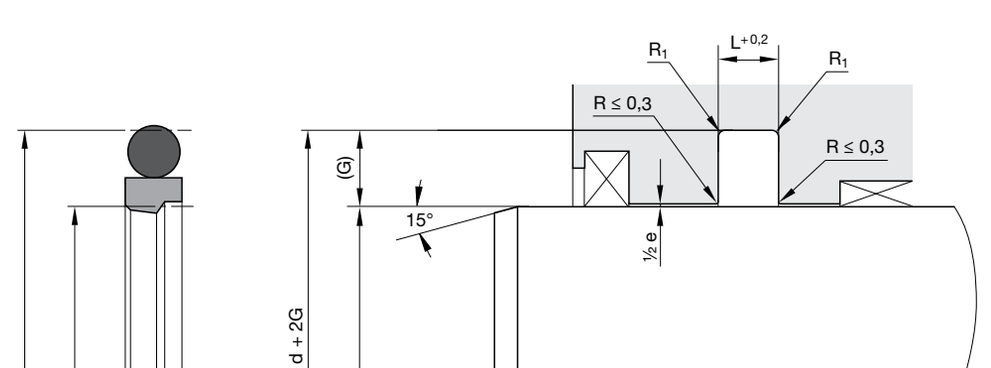

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Standard range

Size	Groove			O-ring			ISO[1)]
	Ø d (mm)	Ø D (mm)	L (mm)	No.	CS (mm)	ID (mm)	
0040	4	8.90	2.20	2-010	1.78	6.07	
0050	5	9.90	2.20	2-010	1.78	6.07	
0060	6	11	2.20	2-011	1.78	7.65	•
0070	7	11.90	2.20	2-012	1.78	9.25	
0080	8	13	2.20	2-012	1.78	9.25	•
0080	8	15.30	3.20	2-111	2.62	10.77	
0100	10	15	2.20	2-013	1.78	10.82	•
0100	10	17.30	3.20	2-112	2.62	12.37	
0120	12	17	2.20	2-015	1.78	14	•
0120	12	19.30	3.20	2-114	2.62	15.54	
0120	12	19.50	3.20	2-114	2.62	15.54	•
0140	14	19	2.20	2-016	1.78	15.60	•
0140	14	21.50	3.20	2-115	2.62	17.12	•
0150	15	22.30	3.20	2-116	2.62	18.72	
0160	16	23.50	3.20	2-116	2.62	18.72	•
0180	18	25.30	3.20	2-117	2.62	20.29	
0180	18	25.50	3.20	2-117	2.62	20.29	•
0200	20	27.50	3.20	2-118	2.62	21.89	•
0200	20	30.70	4.20	2-214	3.53	24.99	
0200	20	31	4.20	2-214	3.53	24.99	•
0220	22	29.50	3.20	2-120	2.62	25.07	•
0220	22	32.70	4.20	2-215	3.53	26.57	
0220	22	33	4.20	2-215	3.53	26.57	•
0250	25	32.50	3.20	2-122	2.62	26.24	•
0250	25	35.70	4.20	2-217	3.53	29.32	
0250	25	36	4.20	2-217	3.53	29.32	•
0260	26	36.70	4.20	2-218	3.53	31.34	
0280	28	38.70	4.20	2-219	3.53	32.92	
0280	28	39	4.20	2-219	3.53	32.92	•
0300	30	40.70	4.20	2-220	3.53	34.52	

Size	Groove			O-ring			ISO[1)]
	Ø d (mm)	Ø D (mm)	L (mm)	No.	CS (mm)	ID (mm)	
0320	32	42.70	4.20	2-221	3.53	36.09	
0320	32	43	4.20	2-221	3.53	36.09	•
0350	35	45.70	4.20	2-222	3.53	37.69	
0360	36	47	4.20	2-223	3.53	40.87	•
0380	38	53.10	6.30	2-327	5.33	43.82	
0400	40	51	4.20	2-224	3.53	44.04	•
0400	40	55.10	6.30	2-328	5.33	46.99	
0420	42	57.10	6.30	2-328	5.33	46.99	
0450	45	56	4.20	2-226	3.53	50.39	•
0450	45	60.10	6.30	2-329	5.33	50.17	
0480	48	63.10	6.30	2-330	5.33	53.34	
0500	50	61	4.20	2-227	3.53	53.57	•
0500	50	65.10	6.30	2-331	5.33	56.52	
0520	52	67.10	6.30	2-331	5.33	56.52	
0550	55	70.10	6.30	2-332	5.33	59.69	
0560	56	67	4.20	2-229	3.53	59.92	•
0560	56	71.50	6.30	2-332	5.33	59.69	•
0580	58	73.10	6.30	2-333	5.33	62.87	
0600	60	75.10	6.30	2-334	5.33	66.04	
0630	63	74	4.20	2-231	3.53	66.27	•
0630	63	78.50	6.30	2-335	5.33	69.22	•
0650	65	80.10	6.30	2-335	5.33	69.22	
0700	70	85.10	6.30	2-337	5.33	75.57	
0700	70	85.50	6.30	2-337	5.33	75.57	•
0750	75	90.10	6.30	2-339	5.33	81.92	
0800	80	95.10	6.30	2-340	5.33	85.09	
0800	80	95.50	6.30	2-340	5.33	85.09	•
0850	85	100.10	6.30	2-342	5.33	91.44	
0900	90	105.10	6.30	2-343	5.33	94.62	
0900	90	105.50	6.30	2-343	5.33	94.62	•

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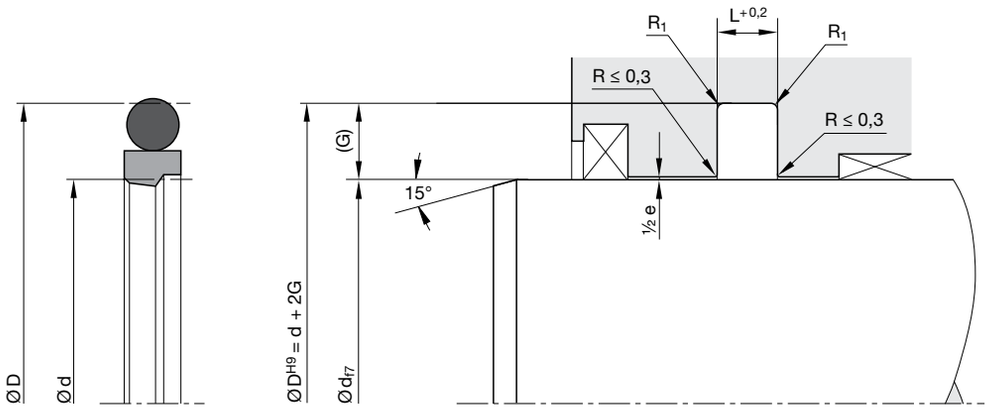

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Size	Groove				O-ring		ISO[1]
	Ø d (mm)	Ø D (mm)	L (mm)	No.	CS (mm)	ID (mm)	
0950	95	110.10	6.30	2-345	5.33	100.97	
1000	100	115.10	6.30	2-346	5.33	104.14	
1000	100	115.50	6.30	2-346	5.33	104.14	•
1100	110	125.10	6.30	2-350	5.33	116.84	
1100	110	125.50	6.30	2-350	5.33	116.84	•
1200	120	135.10	6.30	2-353	5.33	126.37	
1250	125	140.10	6.30	2-354	5.33	129.54	
1250	125	140.50	6.30	2-354	5.33	129.54	•
1300	130	145.10	6.30	2-356	5.33	135.89	
1400	140	155.10	6.30	2-359	5.33	145.42	
1400	140	155.50	6.30	2-359	5.33	145.42	•
1500	150	165.10	6.30	2-361	5.33	151.77	
1600	160	175.10	6.30	2-363	5.33	164.47	
1600	160	175.50	6.30	2-363	5.33	164.47	•
1600	160	181	8.10	2-439	6.99	164.47	•
1700	170	185.10	6.30	2-365	5.33	177.17	
1750	175	190.10	6.30	2-365	5.33	177.17	
1800	180	195.10	6.30	2-366	5.33	183.52	
1800	180	195.50	6.30	2-366	5.33	183.52	•
1800	180	201	8.10	2-442	6.99	183.52	•
1850	185	200.10	6.30	2-367	5.33	189.87	
1900	190	205.10	6.30	2-368	5.33	196.22	
1950	195	210.10	6.30	2-368	5.33	196.22	
2000	200	220.50	8.10	2-445	6.99	202.57	
2000	200	221	8.10	2-445	6.99	202.57	•
2100	210	230.50	8.10	2-446	6.99	215.27	
2200	220	240.50	8.10	2-447	6.99	227.97	
2200	220	241	8.10	2-447	6.99	227.97	•
2300	230	250.50	8.10	2-448	6.99	240.67	
2400	240	260.50	8.10	2-449	6.99	240.67	

Size	Groove				O-ring		ISO[1]
	Ø d (mm)	Ø D (mm)	L (mm)	No.	CS (mm)	ID (mm)	
2500	250	270.50	8.10	2-449	6.99	253.37	
2500	250	271	8.10	2-449	6.99	253.37	•
2600	260	284	8.10	2-450	6.99	266.07	
2700	270	294	8.10	2-451	6.99	278.77	
2800	280	304	8.10	2-452	6.99	291.47	
2800	280	304.50	8.10	2-452	6.99	291.47	•
2900	290	314	8.10	2-453	6.99	304.17	
3000	300	324	8.10	2-453	6.99	304.17	
3100	310	334	8.10	2-454	6.99	316.87	
3200	320	344	8.10	2-455	6.99	329.57	
3200	320	344.50	8.10	2-455	6.99	329.57	•
3300	330	354	8.10	2-456	6.99	342.27	
3400	340	364	8.10	2-457	6.99	354.97	
3500	350	374	8.10	2-457	6.99	354.97	
3600	360	384	8.10	2-458	6.99	367.67	
3600	360	384.50	8.10	2-458	6.99	367.67	•
3700	370	394	8.10	2-459	6.99	380.37	
3800	380	404	8.10	2-460	6.99	393.07	
3900	390	414	8.10	2-461	6.99	405.26	
4000	400	424	8.10	2-461	6.99	405.26	
4100	410	434	8.10	2-462	6.99	417.96	
4200	420	444	8.10	2-463	6.99	430.66	
4300	430	454	8.10	2-464	6.99	443.36	
4400	440	464	8.10	2-464	6.99	443.36	
4500	450	474	8.10	2-465	6.99	456.06	
4600	460	484	8.10	2-466	6.99	468.76	
4700	470	494	8.10	2-467	6.99	481.46	
4800	480	504	8.10	2-468	6.99	494.16	
4900	490	514	8.10	2-469	6.99	506.86	
5000	500	524	8.10	2-469	6.99	506.86	

1) ISO 7425-2

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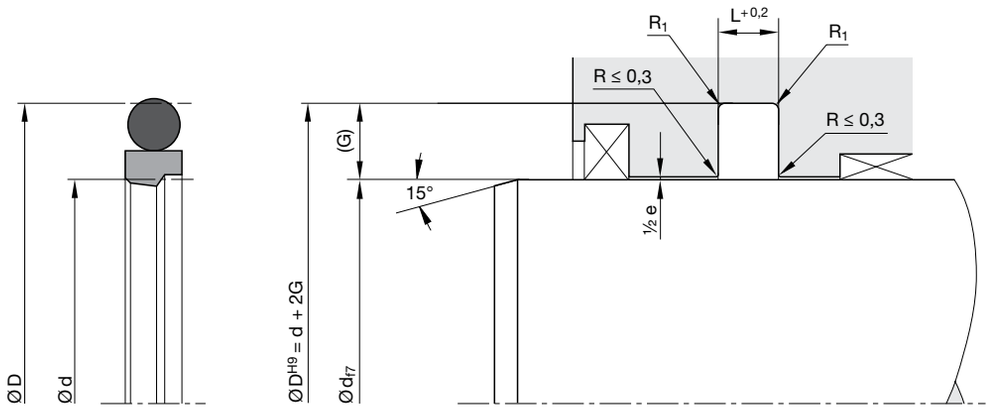

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	Ø d (mm)	Ø D (mm)	L (mm)	No.	CS (mm)	ID (mm)	
5200	520	544	8.10	2-470	6.99	532.26	
5500	550	574	8.10	2-471	6.99	557.66	
5700	570	594	8.10	2-472	6.99	582.68	
6000	600	624	8.10	2-473	6.99	608.08	
6200	620	644	8.10	2-474	6.99	633.48	
6400	640	664	8.10	2-475	6.99	658.88	
6500	650	677.30	9.50	-	8.40	660.00	
7000	700	727.30	9.50	-	8.40	695.00	
8000	800	827.30	9.50	-	8.40	810.00	
9000	900	927.30	9.50	-	8.40	910.00	

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