



The double-acting piston sealing set profile OA consists of a PTFE piston sealing ring and an elastomer O-ring as a preloading element.

Profile OA is particularly suitable for double-acting pneumatic pistons, e.g. in control cylinders, servo-assisted equipment and in quick-acting cylinders.

- Due to application-optimized geometry and compounds suitable for use in oiled as well as in oil-free air (after initial lubrication on assembly).
- Good sealing performance in extremely small assembly conditions.
- Can also be used for single-acting applications.
- Good 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.
- Very good emergency running properties in low-lube conditions.
- Assembly on one-part piston is possible.
- High temperature resistance assured by suitable O-ring compound selection.
- Adaptable to nearly all media thanks to high chemical resistance of the sealing ring and large O-ring compound selection.
- Short axial assembly length.
- Installation in closed and undercut housings.
- Available in diameters from 4 to 3000 mm.
- Machined small-volume series and samples available with short lead times.

## Range of Application

Piston sealing set for pneumatic applications.

Working pressure	≤ 16 bar
Working temperature	-30 °C to +80 °C <sup>1)</sup>
Surface speed	≤ 4 m/s

<sup>1)</sup> With deviation from standard temperature range, please contact our Consultancy Service for adequate O-Ring compound.

## Compounds

Sealing ring: Polon® 033, modified PTFE + 25 % carbon

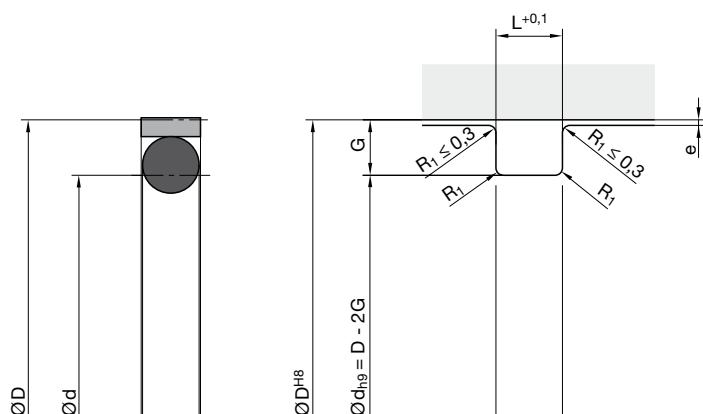
O-ring: N0674, NBR elastomer with approx. 70 Shore A.

## Installation

The grooves must be carefully cleaned and deburred. The cylinder bore must have a lead-in chamfer. When fitting the piston sealing ring there is always a risk that the ring may tilt and be sheared off by normal lead-in chamfers (see chapter "General installation guidelines for piston seals", PTFE seals, fig. 1). We therefore recommend that up to a cylinder diameter of 230 mm a lead-in chamfer according to fig. 2 or detail "A" is considered. In the case of smaller rings which are especially liable to bending we recommend an open-groove design for diameters smaller than 30 mm.

This seal should only be used in combination with guiding elements (e.g. profile F2).

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 suited to your particular application requirements.



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 piston Ø range		Groove width L (mm)	Groove depth G (mm)	Gap max. e (mm)	Radius max. R <sub>1</sub> (mm)
			≥	<				
01800	A	1.78	7	16	2.00	2.00	0.20	0.5
01800	B	2.62	16	27	2.85	3.00	0.25	0.5
01800	C	3.53	27	50	3.80	3.75	0.25	0.5
01800	D	5.33	50	130	5.60	6.25	0.50	0.9
01800	E	6.99	130	180	7.55	7.50	0.50	0.9
01800	F	6.99	180	240	7.55	9.00	0.75	0.9
01800	G	6.99	240	420	7.55	12.00	1.00	0.9

## Ordering example

Piston diameter 40 mm

OA 0400 033 01801 C (40.0 x 32.5 x 3.8)

OA Profile

0400 Piston diameter x 10

033 Compound

01801 Series no. / Compound code O-ring

01800 without O-ring

01801 N0674 (NBR)

01802 V0747 (FKM)

01803 N0304 (NBR)

01804 E0540 (EPDM)

01805 N3578 (NBR)

01806 N3588 (NBR)

70±5 Shore A

75±5 Shore A

75±5 Shore A

80±5 Shore A

75±5 Shore A

90±5 Shore A

-30 / +110 °C

-25 / +200 °C

-50 / +110 °C

-40 / +150 °C

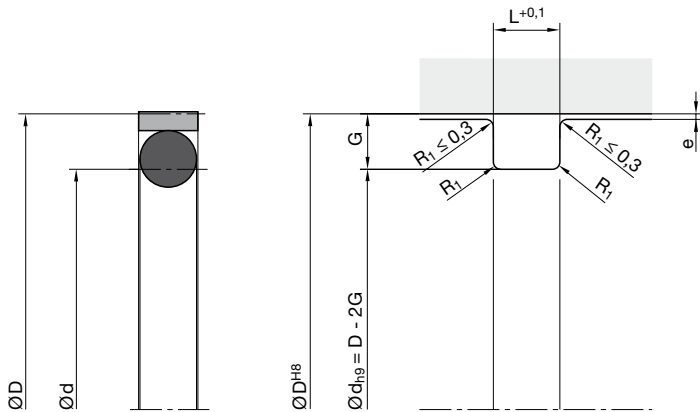
-30 / +110 °C

-20 / +110 °C

C 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: "C") by the one you require (for example "B" or "D").



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

## Standard range

Size	Ø D (mm)	Groove Ø d (mm)	L (mm)	No.	O-ring CS (mm)	ID (mm)	Size	Ø D (mm)	Groove Ø d (mm)	L (mm)	No.	O-ring CS (mm)	ID (mm)
0070	7	3	2	2-006	1.78	2.90	0750	75	62.5	5.6	2-333	5.33	62.87
0080	8	4	2	2-007	1.78	3.68	0800	80	67.5	5.6	2-334	5.33	66.04
0090	9	5	2	2-008	1.78	4.47	0850	85	72.5	5.6	2-336	5.33	72.39
0100	10	6	2	2-010	1.78	6.07	0900	90	77.5	5.6	2-337	5.33	75.57
0110	11	7	2	2-010	1.78	6.07	0920	92	79.5	5.6	2-338	5.33	78.74
0120	12	8	2	2-011	1.78	7.65	1000	100	87.5	5.6	2-340	5.33	85.09
0140	14	10	2	2-012	1.78	9.25	1050	105	92.5	5.6	2-342	5.33	91.44
0160	16	10	2.85	2-110	2.62	9.19	1100	110	97.5	5.6	2-344	5.33	97.79
0180	18	12	2.85	2-112	2.62	12.37	1150	115	102.5	5.6	2-345	5.33	100.97
0190	19	13	2.85	2-112	2.62	12.37	1200	120	107.5	5.6	2-347	5.33	107.32
0200	20	14	2.85	2-113	2.62	13.94	1250	125	112.5	5.6	2-348	5.33	110.49
0220	22	16	2.85	2-114	2.62	15.54	1300	130	115	7.55	2-425	6.99	113.67
0250	25	19	2.85	2-116	2.62	18.72	1400	140	125	7.55	2-428	6.99	123.19
0280	28	20.5	3.8	2-211	3.53	20.22	1500	150	135	7.55	2-431	6.99	132.72
0300	30	22.5	3.8	2-212	3.53	21.82	1600	160	145	7.55	2-435	6.99	142.24
0320	32	24.5	3.8	2-214	3.53	24.99	2000	200	182	7.55	2-441	6.99	177.17
0350	35	27.5	3.8	2-215	3.53	26.57	2200	220	202	7.55	2-444	6.99	196.22
0360	36	28.5	3.8	2-216	3.53	28.17							
0380	38	30.5	3.8	2-217	3.53	29.74							
0400	40	32.5	3.8	2-219	3.53	32.92							
0420	42	34.5	3.8	2-220	3.53	34.52							
0450	45	37.5	3.8	2-221	3.53	37.69							
0480	48	40.5	3.8	2-223	3.53	40.87							
0500	50	37.5	5.6	2-325	5.33	37.47							
0550	55	42.5	5.6	2-326	5.33	40.64							
0600	60	47.5	5.6	2-328	5.33	46.99							
0630	63	50.5	5.6	2-329	5.33	50.17							
0650	65	52.5	5.6	2-329	5.33	50.17							
0700	70	57.5	5.6	2-331	5.33	56.52							
0740	74	61.5	5.6	2-332	5.33	59.69							

Further sizes on request.