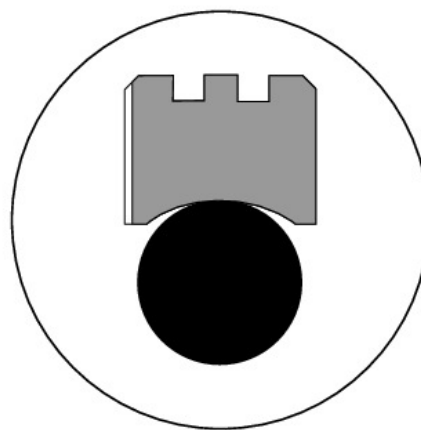




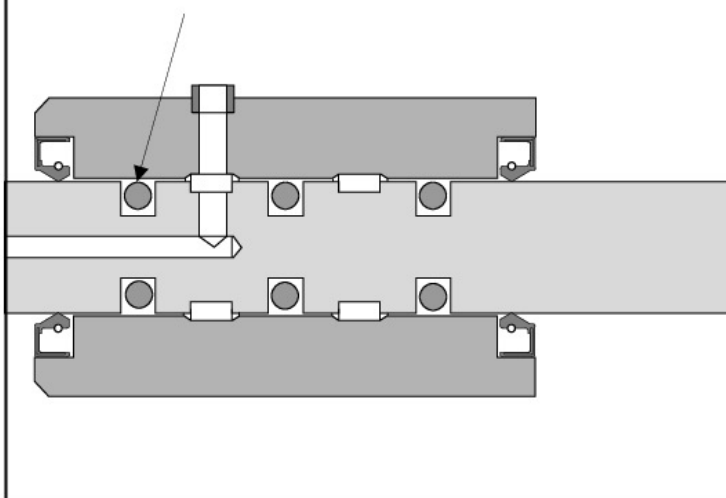
The seal HR 180 has been specially designed for sealing of swivel or rotary transmissions. This double acting sealing system is used in cases of external sealing. It has a particularly versatile range of materials to serve respective applications.

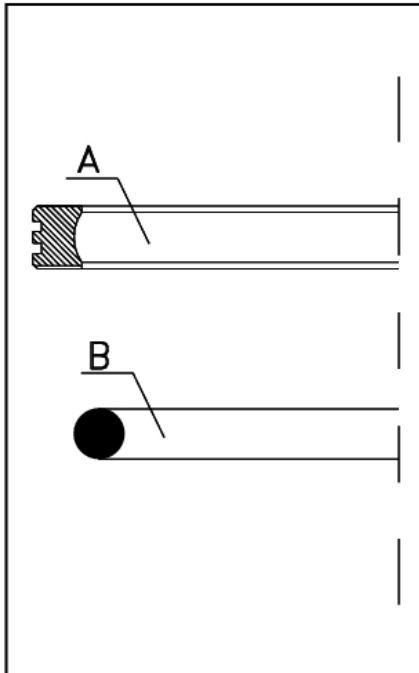
Special Features:

- low friction and very low wear
- reduced stick slip tendency even at low velocity
- high extrusion durability
- very high resistance of temperature
- small assembly dimensions
- suitability to almost all medias concerning the PTFE part and a possibility of variation with O-ring



Material	: PTFE-Compound
Operational pressure	: up to 40 MPa (400 bar)
Velocity	: rotary to 2 m/s
Temperature	: -40 up to +200 °C





Profile Gasket (Part A)

Profile gasket cross section has been specially designed taking into account the turning action. The dynamic side is provided with a small chamfer to simplify assembly. The circumventing / surrounding groove on the dynamic side yields a high specific surface pressure. The radius on the inner diameter ensures a central and secure fit for the pre-stressing element. The expanded frictional area between O-ring and the profile ring also curtails relative movement with respect to each other. Depending on the section of the seal, there may be one or two grooves incorporated on the dynamic side.

The response behavior of the pre-stressing element is improved by providing for grooves on the lateral plane faces as a standard feature.

O-ring (Part B)

O-rings are standard sealing elements with circular cross section. Those used in the present application conform to the series of dimensions as per AS 568 A (American norms). Standard MOC for hydraulics applications is NBR, which guarantees particularly good resistance to hydraulic fluids. For use with profile gaskets O-rings with hardness of 70 Shore A are preferred.

Material overview: Profile Gaskets

25: Modified PTFE + Glass fiber - High abrasion resistance and inherent stability, good chemical resistance, used in various areas of industry and intermediate-stress hydraulic applications.

30: Modified PTFE + Carbon - Good abrasion resistance and inherent stability, good chemical resistance, used in water- and water-oil emulsions with intermediate stress. Also designed for dry runs.

67: Modified PTFE - Very high abrasion resistance and inherent stability, used in hydraulics and abrasive pressure fluid applications.

74: Modified PTFE + Carbon fiber - Very good abrasion resistance and inherent stability. Used in hydraulics and also intended for dry runs.

Material overview: O-Rings

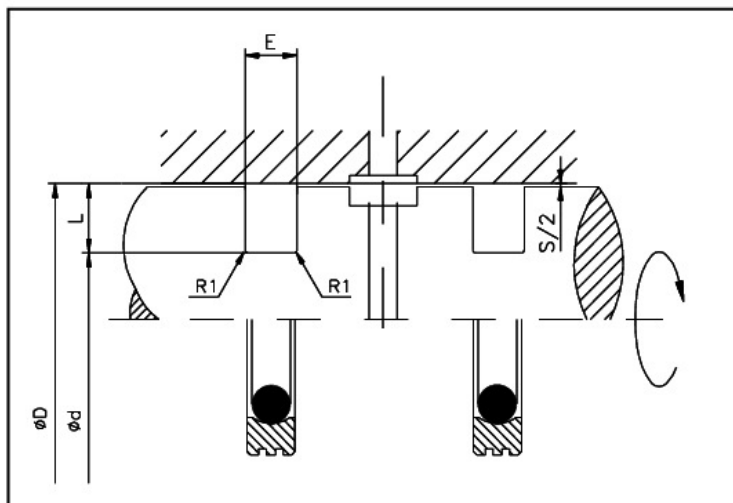
N: Acrylnitrile-Butadiene-Rubber - Used in general machine constructions, hydraulics, pneumatics. Resistant to mineral oil based pressure fluids, HFA, HFB and HFC fluids and water.

F: Fluorine-containing Rubbers - Used at high temperatures and aggressive surrounding media, resistant to mineral based and synthetic pressure fluids, aliphatic, aromatic and chlorated hydrocarbons, phosphate-ester based poorly inflammable fluids.

E: Ethylene-Propylene-Diene Rubbers - Used in valve and pump industry. Resistant to hot water, steam, phosphate-ester based poorly inflammable fluids, but is not resistant to mineral oils.

S: Silicone-Rubbers

C: Chloroprene-Rubbers



Limitations of Use

Operational pressure	: up to 40 MPa (400 bar)
Velocity	: rotary to 2 m/s
Temperature	: -40 up to +200 °C (depending on O-ring material)

Media for Use

Mineral oil based pressure fluids, flame resistant fluids (HFA, HFB, HFC,) bio oils, water, air and other media depending on O-ring material

Surface Finish

Surface	Rmax	Rz	Ra
Faces	2,5 µm	1,6 µm	0,4 µm
Groove root	10,0 µm	6,3 µm	1,6 µm
Groove flanks	16,0 µm	10,0 µm	3,2 µm
Surface hardness	≥ 55 HRC; Depth of hardness ≥ 0,3 mm		

Preferred assembly dimensions

Section	O-Ring Cord-ø mm	Recommend Diameter Standard d mm	Groove Width E mm	Groove Depth L mm	Max.Diameter Clearance S		Radius R1 max. mm
					0 - 150 bar mm	150 - 300 bar mm	
01	1,78	8,0 - 39,9	2,2	2,45	0,4 - 0,2	0,2 - 0,1	0,5
02	2,62	40,0 - 79,9	3,2	3,75	0,6 - 0,3	0,3 - 0,2	0,7
03	3,53	80,0 - 132,9	4,2	5,50	0,8 - 0,4	0,4 - 0,2	1,2
04	5,33	133,0 - 329,9	6,3	7,75	1,0 - 0,5	0,5 - 0,3	1,5
05	7,00	330,0 - 669,9	8,1	10,50	1,0 - 0,5	0,5 - 0,3	1,5
06	8,40	670,0 - 999,9	9,5	14,00	1,0 - 0,5	0,5 - 0,3	2,0

D H9	d h10	E +0,2	O-Ring	Part N°
8,00	3,10	2,20	006	HR180 0080-01-74N
10,00	5,10	2,20	009	HR180 0100-01-74N
12,00	7,10	2,20	011	HR180 0120-01-74N
14,00	9,10	2,20	012	HR180 0140-01-74N
15,00	10,10	2,20	012	HR180 0150-01-74N
16,00	11,10	2,20	013	HR180 0160-01-74N
18,00	13,10	2,20	014	HR180 0180-01-74N
20,00	15,10	2,20	016	HR180 0200-01-74N
22,00	17,10	2,20	017	HR180 0220-01-74N
24,00	19,10	2,20	018	HR180 0240-01-74N
25,00	20,10	2,20	019	HR180 0250-01-74N
28,00	23,10	2,20	021	HR180 0280-01-74N
30,00	25,10	2,20	022	HR180 0300-01-74N
32,00	27,10	2,20	023	HR180 0320-01-74N
35,00	30,10	2,20	025	HR180 0350-01-74N
38,00	33,10	2,20	027	HR180 0380-01-74N
39,00	34,10	2,20	027	HR180 0390-01-74N
40,00	32,50	3,20	125	HR180 0400-02-74N
42,00	34,50	3,20	126	HR180 0420-02-74N
45,00	37,50	3,20	128	HR180 0450-02-74N
48,00	40,50	3,20	130	HR180 0480-02-74N
50,00	42,50	3,20	131	HR180 0500-02-74N
52,00	44,50	3,20	132	HR180 0520-02-74N
55,00	47,50	3,20	134	HR180 0550-02-74N
60,00	52,50	3,20	137	HR180 0600-02-74N

D H9	d h10	E +0,2	O-Ring	Part N°
63,00	55,50	3,20	139	HR180 0630-02-74N
64,00	56,50	3,20	140	HR180 0640-02-74N
65,00	57,50	3,20	140	HR180 0650-02-74N
70,00	62,50	3,20	144	HR180 0700-02-74N
75,00	67,50	3,20	147	HR180 0750-02-74N
80,00	69,00	4,20	232	HR180 0800-03-74N
85,00	74,00	4,20	233	HR180 0850-03-74N
89,00	78,00	4,20	235	HR180 0890-03-74N
90,00	79,00	4,20	235	HR180 0900-03-74N
95,00	84,00	4,20	236	HR180 0950-03-74N
100,00	89,00	4,20	238	HR180 1000-03-74N
105,00	94,00	4,20	240	HR180 1050-03-74N
110,00	99,00	4,20	241	HR180 1100-03-74N
115,00	104,00	4,20	243	HR180 1150-03-74N
120,00	109,00	4,20	244	HR180 1200-03-74N
125,00	114,00	4,20	246	HR180 1250-03-74N
127,00	116,00	4,20	246	HR180 1270-03-74N
130,00	119,00	4,20	247	HR180 1300-03-74N
132,00	121,00	4,20	248	HR180 1320-03-74N
135,00	119,50	6,30	351	HR180 1350-04-74N
140,00	124,50	6,30	352	HR180 1400-04-74N
145,00	129,50	6,30	354	HR180 1450-04-74N
150,00	134,50	6,30	355	HR180 1500-04-74N
154,00	138,50	6,30	356	HR180 1540-04-74N
155,00	139,50	6,30	357	HR180 1550-04-74N



D H9	d h10	E +0,2	O-Ring	Part N°
160,00	144,50	6,30	358	HR180 1600-04-74N
165,00	149,50	6,30	359	HR180 1650-04-74N
170,00	154,50	6,30	361	HR180 1700-04-74N
175,00	159,50	6,30	362	HR180 1750-04-74N
180,00	164,50	6,30	363	HR180 1800-04-74N
190,00	174,50	6,30	364	HR180 1900-04-74N
200,00	184,50	6,30	366	HR180 2000-04-74N
210,00	194,50	6,30	367	HR180 2100-04-74N
220,00	204,50	6,30	369	HR180 2200-04-74N
230,00	214,50	6,30	370	HR180 2300-04-74N
240,00	224,50	6,30	372	HR180 2400-04-74N
250,00	234,50	6,30	374	HR180 2500-04-74N
260,00	244,50	6,30	375	HR180 2600-04-74N
270,00	254,50	6,30	377	HR180 2700-04-74N
280,00	264,50	6,30	377	HR180 2800-04-74N
290,00	274,50	6,30	378	HR180 2900-04-74N
300,00	284,50	6,30	379	HR180 3000-04-74N
310,00	294,50	6,30	380	HR180 3100-04-74N
320,00	304,50	6,30	381	HR180 3200-04-74N
330,00	309,00	8,10	453	HR180 3300-05-74N
340,00	319,00	8,10	454	HR180 3400-05-74N
350,00	329,00	8,10	455	HR180 3500-05-74N
360,00	339,00	8,10	456	HR180 3600-05-74N
370,00	349,00	8,10	456	HR180 3700-05-74N
380,00	359,00	8,10	457	HR180 3800-05-74N
390,00	369,00	8,10	458	HR180 3900-05-74N
400,00	379,00	8,10	458	HR180 4000-05-74N

D H9	d h10	E +0,2	O-Ring	Part N°
410,00	389,00	8,10	459	HR180 4100-05-74N
420,00	399,00	8,10	460	HR180 4200-05-74N
430,00	409,00	8,10	461	HR180 4300-05-74N
440,00	419,00	8,10	462	HR180 4400-05-74N
450,00	429,00	8,10	463	HR180 4500-05-74N
460,00	439,00	8,10	463	HR180 4600-05-74N
470,00	449,00	8,10	464	HR180 4700-05-74N
480,00	459,00	8,10	465	HR180 4800-05-74N
490,00	469,00	8,10	466	HR180 4900-05-74N
500,00	479,00	8,10	467	HR180 5000-05-74N
510,00	489,00	8,10	467	HR180 5100-05-74N
520,00	499,00	8,10	468	HR180 5200-05-74N
530,00	509,00	8,10	469	HR180 5300-05-74N
540,00	519,00	8,10	469	HR180 5400-05-74N
550,00	529,00	8,10	470	HR180 5500-05-74N
560,00	539,00	8,10	470	HR180 5600-05-74N
570,00	549,00	8,10	470	HR180 5700-05-74N
580,00	559,00	8,10	471	HR180 5800-05-74N
590,00	569,00	8,10	471	HR180 5900-05-74N
600,00	579,00	8,10	471	HR180 6000-05-74N
610,00	589,00	8,10	472	HR180 6100-05-74N
620,00	599,00	8,10	472	HR180 6200-05-74N
630,00	609,00	8,10	473	HR180 6300-05-74N
640,00	619,00	8,10	473	HR180 6400-05-74N
650,00	629,00	8,10	473	HR180 6500-05-74N
660,00	639,00	8,10	474	HR180 6600-05-74N

Further and intermediate sizes up to Ø 2500 mm available on request.

Example for ordering:

HR 180 0360 - 03 - 74N - ...
 Profile _____
 Nominal diameter x 10 _____
 Cross section _____
 Standard material profile gasket _____
 Standard material O-Ring _____
 HME internal code _____

Material Key:

Profile gasket

25 - PTFE glass fiber
 30 - PTFE carbon
 67 - modified PTFE
 74 - PTFE carbon fiber

O-Ring

N - NBR
 F - FPM
 E - EPDM
 S - Silicon
 C - Chloroprene

Issue

01 05

WARNING: Limits of application stated herein are standard values. They could be individually transgressed with due consideration to respective service conditions. In the event of a large duty cycle, pulsating operation and other complex operational conditions, simultaneous transgression of these values is not recommended. Due to a large variety of service conditions that may arise in course of actual use, the company does not take responsibility of or guarantee the functional accuracy of the individual components. Rights for changes are reserved.