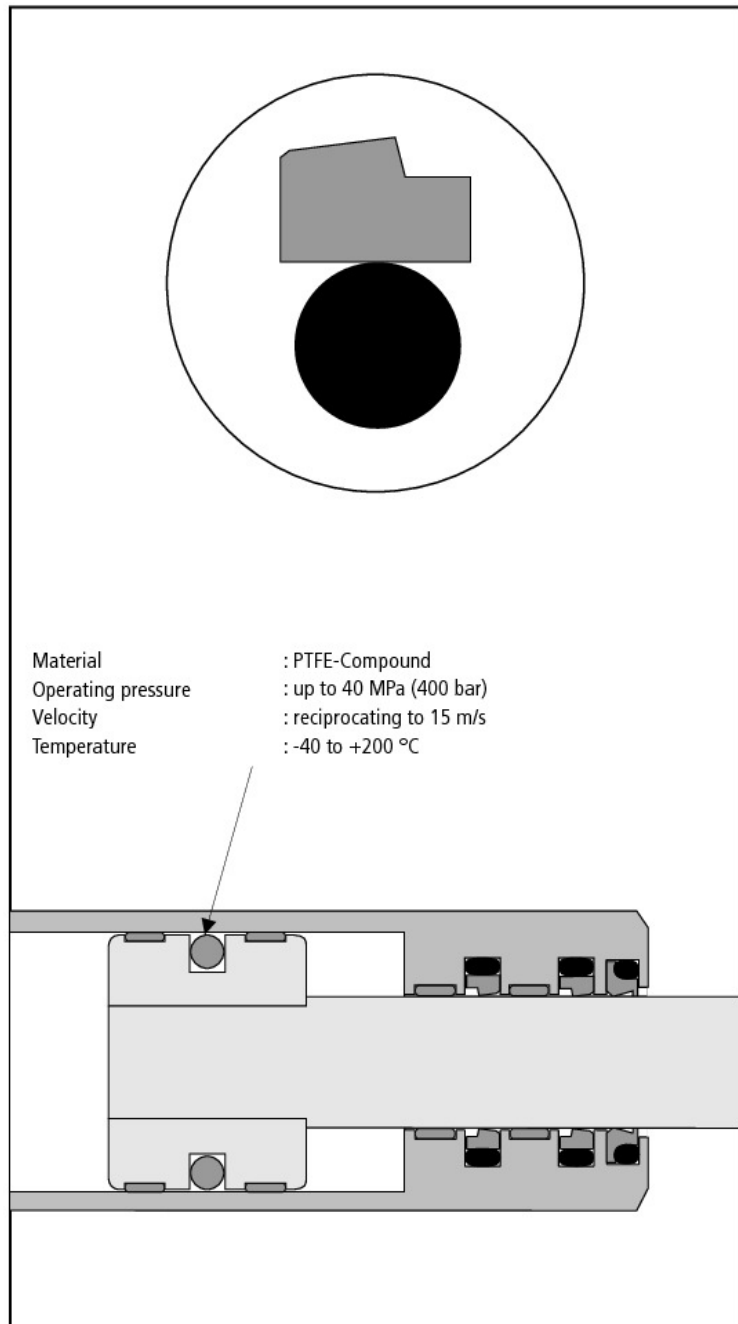
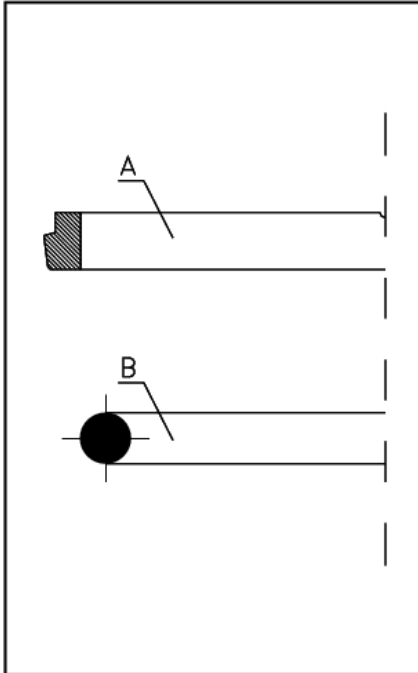
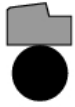


Single acting piston seals of the HK 155 series are preferentially used in hydraulic cylinders with unilateral pressure application. Various material combinations ensure high functional reliability and long life over the entire range of pressures and velocities with minimal friction, with various temperatures and pressure fluids.

Special Features::

- Two part composition consisting of profile gasket and O-ring
- Outstanding shear characteristics, no stick-slip effect
- Good dynamic and static sealing
- Large abrasion resistance, long life
- Wide temperature range for application and high chemical resistance depending on O-ring material
- Designed for assembly on single part piston
- Available for all cylinder diameters up to 2500 mm.





Profile Gasket (Part A)

Gasket section is rectangular and is provided with a stepped sealing edge on the pressure side. On the opposite side, the profile travels under a flat wedge/angle. This special form of sealing profile helps to achieve a recovery effect. This means that the persistent oil film present on the cylinder wall during motion is conveyed back to the surge chamber.

Profile gaskets are manufactured from specially modified PTFE materials. Compound 55 is the standard material of construction (MOC) that is used in hydraulics applications. This material is particularly superior in respect of very high abrasion resistance, inherent stability, very good shearing characteristics and very good thermal and chemical resistance.

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.

Materials Overview: Scraper/Wiper Ring

01: Pure PTFE - Outstanding chemical resistance - used in chemical, foodstuffs and pharmaceutical industry with light mechanical stress.

12: Modified PTFE - Very good chemical resistance, outstanding shear characteristics, special purpose and intermediate stress applications.

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.

55: Modified PTFE + bronze - High abrasion resistance and inherent stability, very good shear characteristics, good chemical resistance, used in intermediate to high stress hydraulics applications.

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

83: Modified Polyurethane - Very high abrasion resistance and inherent stability, used primarily in intermediate stress hydraulic applications.

Materials Overview: O-Rings

N: Acrylonitrile-Butadiene-Rubber - Used in general machine construction, 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.

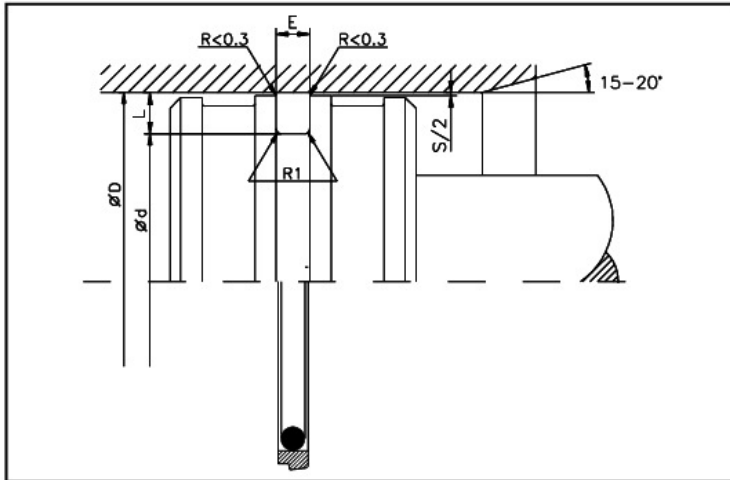
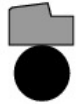
E: Ethylene Propylene Diene Rubbers - Used in armature and pump industry. Resistant to hot water, steam, phosphate-ester based poorly inflammable fluids but is not resistant to mineral oils!

S: Silicone-Rubbers

C: Chloroprene Rubbers

Piston seals series HK 155 is being successfully used in hydraulic cylinders for many years. It can only be used in cases of unilateral pressure applications on pistons.

The seal can be assembled in split and un-split/single and multiple piece pistons. For use in an undivided groove, profile ring must be carefully pried apart and subsequently calibrated in the cylinder bore.



Limitations on Use	
Operating pressure	: up to 40 MPa (400 bar)
Velocity	: reciprocating to 15 m/s
Temperature	: -40 to +200 °C (depending on O-ring material)

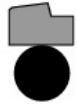
Media for Use	
Mineral oil based pressure fluids, flame resistant fluids (HFA, HFB, HFC), non-polluting pressure fluids (Bio-Oils), water, air and other media (depending on O-ring material).	

Surface Finish			
Surfaces	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

Recommended Assembly Dimensions							
Section	O-Ring mm	Recommended Diameter Standard D mm	Groove Width E mm	Groove Depth L mm	Max. Diameter Clearance S		Radius R1 max. mm
					0 - 200 bar mm	200 - 400 bar mm	
01	1,78	8 - 16,9	2,2	2,45	0,6 - 0,3	0,4 - 0,2	0,3
02	2,62	17 - 26,9	3,2	3,65	0,8 - 0,4	0,4 - 0,3	0,5
03	3,53	27 - 59,9	4,2	5,35	1,2 - 0,8	0,8 - 0,4	0,7
04	5,33	60 - 199,9	6,3	7,55	1,4 - 1,0	1,0 - 0,4	1,2
05	7,00	200 - 255,9	8,1	10,25	1,8 - 1,2	1,2 - 0,5	1,5
06	7,00	256 - 669,9	8,1	12,00	2,0 - 1,2	1,2 - 0,5	1,5

D H9	d h10	E +0,2	O-Ring	Part N°.
8,00	3,10	2,20	006	HK155 0080-01-55N
10,00	5,10	2,20	009	HK155 0100-01-55N
12,00	7,10	2,20	011	HK155 0120-01-55N
15,00	10,10	2,20	012	HK155 0150-01-55N
16,00	11,10	2,20	013	HK155 0160-01-55N
18,00	10,70	3,20	111	HK155 0180-02-55N
20,00	12,70	3,20	112	HK155 0200-02-55N
20,00	15,10	2,20	015	HK155 0200-01-55N
22,00	14,70	3,20	113	HK155 0220-02-55N
25,00	14,30	4,20	207	HK155 0250-03-55N
25,00	17,70	3,20	115	HK155 0250-02-55N
25,40	18,10	3,20	115	HK155 0254-02-55N
28,00	17,30	4,20	209	HK155 0280-03-55N
28,50	17,80	4,20	209	HK155 0285-03-55N
30,00	19,30	4,20	210	HK155 0300-03-55N
31,70	21,00	4,20	211	HK155 0317-03-55N
32,00	21,30	4,20	211	HK155 0320-03-55N
32,00	24,70	3,20	119	HK155 0320-02-55N
35,00	24,30	4,20	213	HK155 0350-03-55N
38,00	27,30	4,20	215	HK155 0380-03-55N
39,00	28,30	4,20	215	HK155 0390-03-55N
40,00	29,30	4,20	216	HK155 0400-03-55N
40,00	32,70	3,20	124	HK155 0400-02-55N
42,00	31,30	4,20	217	HK155 0420-03-55N
44,50	33,80	4,20	219	HK155 0445-03-55N
45,00	34,30	4,20	219	HK155 0450-03-55N
48,00	37,30	4,20	221	HK155 0480-03-55N
50,00	34,90	6,30	324	HK155 0500-04-55N

D H9	d h10	E +0,2	O-Ring	Part N°.
50,00	39,30	4,20	222	HK155 0500-03-55N
50,80	40,10	4,20	222	HK155 0508-03-55N
52,00	41,30	4,20	223	HK155 0520-03-55N
55,00	44,30	4,20	224	HK155 0550-03-55N
57,10	46,40	4,20	224	HK155 0571-03-55N
60,00	44,90	6,30	327	HK155 0600-04-55N
63,00	47,90	6,30	328	HK155 0630-04-55N
63,00	52,30	4,20	226	HK155 0630-03-55N
63,50	48,40	6,30	328	HK155 0635-04-55N
64,00	48,90	6,30	328	HK155 0640-04-55N
65,00	49,90	6,30	328	HK155 0650-04-55N
69,80	54,70	6,30	330	HK155 0698-04-55N
70,00	54,90	6,30	330	HK155 0700-04-55N
75,00	59,90	6,30	332	HK155 0750-04-55N
76,20	61,10	6,30	332	HK155 0762-04-55N
80,00	59,50	8,10	58x7	HK155 0800-05-55N
80,00	64,90	6,30	333	HK155 0800-04-55N
82,50	67,40	6,30	334	HK155 0825-04-55N
85,00	69,90	6,30	335	HK155 0850-04-55N
89,00	73,90	6,30	336	HK155 0890-04-55N
90,00	74,90	6,30	336	HK155 0900-04-55N
95,00	79,90	6,30	337	HK155 0950-04-55N
100,00	79,50	8,10	79x7	HK155 1000-05-55N
100,00	84,90	6,30	340	HK155 1000-04-55N
101,60	86,50	6,30	340	HK155 1016-04-55N
105,00	89,90	6,30	341	HK155 1050-04-55N
110,00	94,90	6,30	343	HK155 1100-04-55N
114,30	99,20	6,30	344	HK155 1143-04-55N

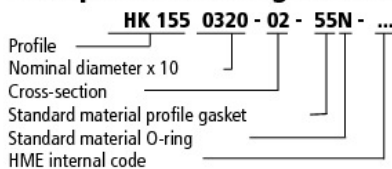


D H9	d h10	E + 0,2	O-Ring	Part N°.
115,00	99,90	6,30	344	HK155 1150-04-55N
120,00	104,90	6,30	346	HK155 1200-04-55N
125,00	104,50	8,10	101x7	HK155 1250-05-55N
125,00	109,90	6,30	347	HK155 1250-04-55N
127,00	111,90	6,30	348	HK155 1270-04-55N
130,00	114,90	6,30	349	HK155 1300-04-55N
132,00	116,90	6,30	349	HK155 1320-04-55N
133,00	117,90	6,30	350	HK155 1330-04-55N
135,00	119,90	6,30	351	HK155 1350-04-55N
140,00	124,90	6,30	352	HK155 1400-04-55N
145,00	129,90	6,30	353	HK155 1450-04-55N
150,00	134,90	6,30	355	HK155 1500-04-55N
154,00	138,90	6,30	356	HK155 1540-04-55N
155,00	139,90	6,30	356	HK155 1550-04-55N
160,00	139,50	8,10	443	HK155 1600-05-55N
160,00	144,90	6,30	358	HK155 1600-04-55N
165,00	149,90	6,30	360	HK155 1650-04-55N
170,00	154,90	6,30	361	HK155 1700-04-55N
175,00	159,90	6,30	362	HK155 1750-04-55N
180,00	164,90	6,30	363	HK155 1800-04-55N
190,00	174,90	6,30	364	HK155 1900-04-55N
200,00	179,50	8,10	441	HK155 2000-05-55N
200,00	184,90	6,30	366	HK155 2000-04-55N
210,00	189,50	8,10	443	HK155 2100-05-55N
220,00	199,50	8,10	444	HK155 2200-05-55N
230,00	209,50	8,10	445	HK155 2300-05-55N
240,00	219,50	8,10	446	HK155 2400-05-55N
250,00	226,00	8,10	446A	HK155 2500-06-55N
250,00	229,50	8,10	447	HK155 2500-05-55N
260,00	236,00	8,10	447	HK155 2600-06-55N
270,00	246,00	8,10	448	HK155 2700-06-55N
280,00	256,00	8,10	449	HK155 2800-06-55N
290,00	266,00	8,10	449	HK155 2900-06-55N
300,00	276,00	8,10	451	HK155 3000-06-55N
310,00	286,00	8,10	451	HK155 3100-06-55N
320,00	296,00	8,10	452	HK155 3200-06-55N

D H9	d h10	E + 0,2	O-Ring	Part N°.
320,00	299,50	8,10	452	HK155 3200-05-55N
330,00	306,00	8,10	453	HK155 3300-06-55N
340,00	316,00	8,10	453	HK155 3400-06-55N
350,00	326,00	8,10	454	HK155 3500-06-55N
360,00	336,00	8,10	455	HK155 3600-06-55N
370,00	346,00	8,10	456	HK155 3700-06-55N
380,00	356,00	8,10	457	HK155 3800-06-55N
390,00	366,00	8,10	457	HK155 3900-06-55N
400,00	376,00	8,10	458	HK155 4000-06-55N
410,00	386,00	8,10	459	HK155 4100-06-55N
420,00	396,00	8,10	460	HK155 4200-06-55N
430,00	406,00	8,10	461	HK155 4300-06-55N
440,00	416,00	8,10	461	HK155 4400-06-55N
450,00	426,00	8,10	462	HK155 4500-06-55N
460,00	436,00	8,10	463	HK155 4600-06-55N
470,00	446,00	8,10	464	HK155 4700-06-55N
480,00	456,00	8,10	464	HK155 4800-06-55N
490,00	466,00	8,10	ASA 93	HK155 4900-06-55N
500,00	476,00	8,10	466	HK155 5000-06-55N
510,00	486,00	8,10	467	HK155 5100-06-55N
520,00	496,00	8,10	468	HK155 5200-06-55N
530,00	506,00	8,10	468	HK155 5300-06-55N
540,00	516,00	8,10	469	HK155 5400-06-55N
550,00	526,00	8,10	469	HK155 5500-06-55N
560,00	536,00	8,10	470	HK155 5600-06-55N
570,00	546,00	8,10	ASA 100	HK155 5700-06-55N
580,00	556,00	8,10	ASA 100	HK155 5800-06-55N
590,00	566,00	8,10	471	HK155 5900-06-55N
600,00	576,00	8,10	471	HK155 6000-06-55N
610,00	586,00	8,10	472	HK155 6100-06-55N
620,00	596,00	8,10	472	HK155 6200-06-55N
630,00	606,00	8,10	ASA 104	HK155 6300-06-55N
640,00	616,00	8,10	473	HK155 6400-06-55N
650,00	626,00	8,10	473	HK155 6500-06-55N
660,00	636,00	8,10	474	HK155 6600-06-55N

Further dimensions and intermediate sizes available up to diameter 2500 mm on request.
Dimensions in bold face comply with DIN ISO 7425/1 for mounting spaces.

Example for ordering Piston Seal:



Material Key:

Profile gasket

- 01 - pure PTFE
- 12 - modified PTFE
- 25 - PTFE glass fiber
- 30 - PTFE carbon
- 55 - PTFE bronze

- 67 - modified PTFE
- 83 - modified PU

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.