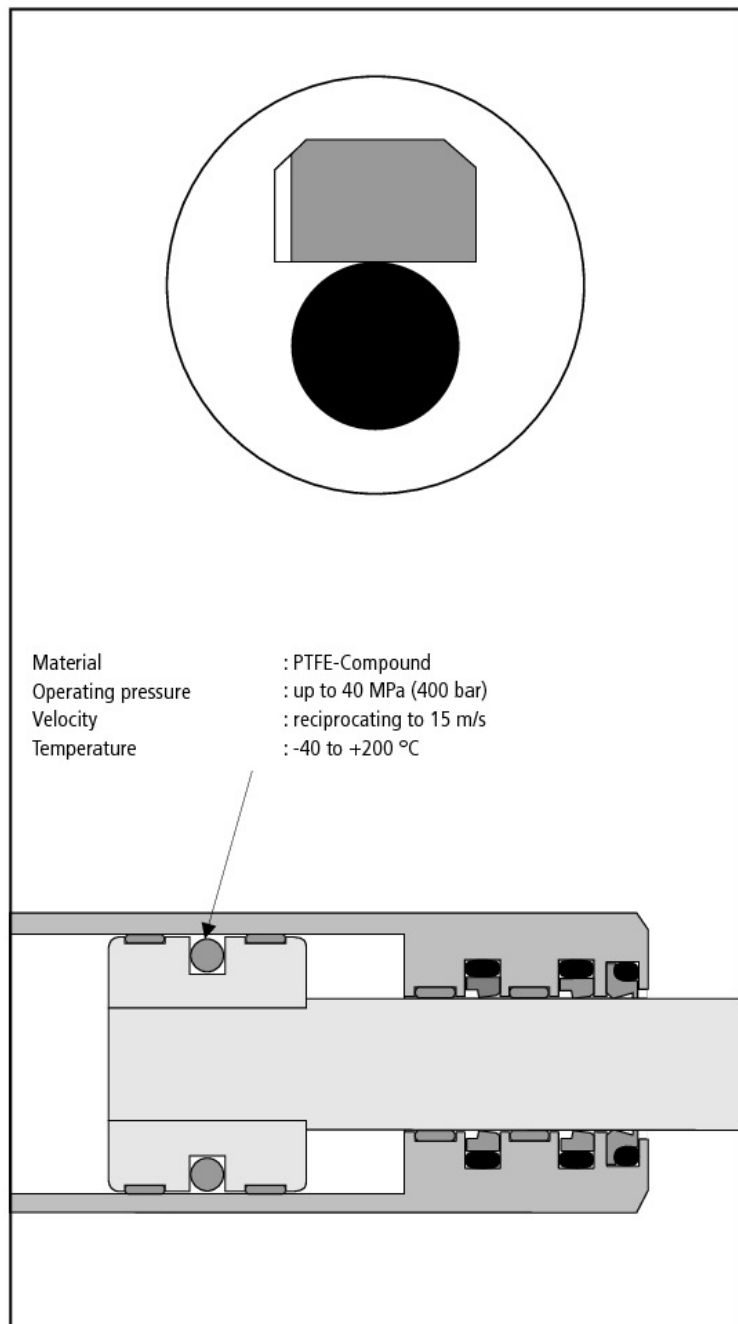
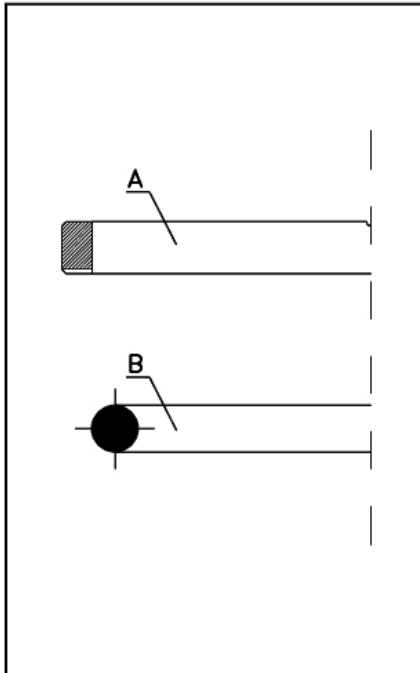
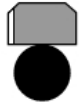


The double acting seal of series HK 150 can be used in most hydraulic applications. Different material combinations assure operational security and long life over the entire pressure and velocity range with low friction, at various temperatures and pressure fluids.

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 of use and better 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. The outer corners have been provided with a chamfer to simplify assembly. Relief rings present on both sides of the ring prevent ramming pressure build up in cases with rapid load variation and also assure direct pressure control on the seal.

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 application.

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

83: Modified Polyurethan - very high abrasion resistance and inherent stability, used primarily in intermediate stress hydraulics 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.

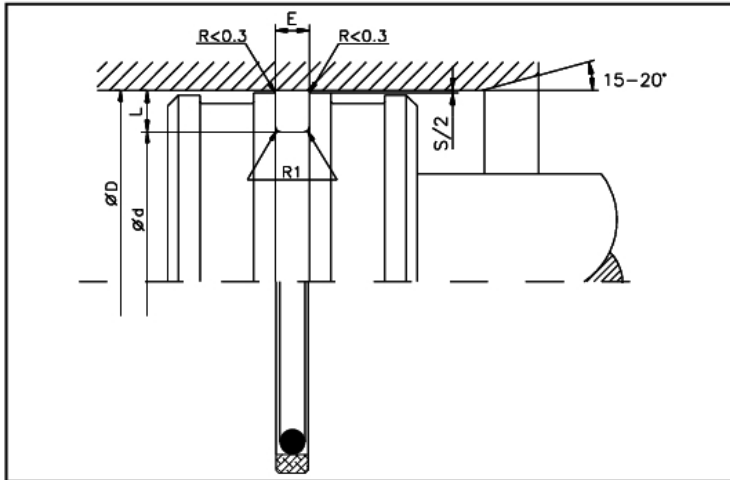
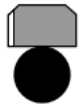
E: Ethylene Propylene Diene Rubbers - used in armature and pump industry. Resistant to hot water, steam, phosphate-ester based poorly inflammable fluids but is not resistant to mineral oils!

S: Silicone Rubbers

C: Chloroprene Rubbers.

Piston seals series HK 150 is being successfully used for many years in hydraulic cylinders.

The seal can be assembled in single or 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)

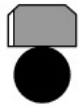
Media for Use	
Mineral oil based pressure fluids, flame resistant fluids (HFA, HFB, HFC), pressure fluids/Bio-Oils, water, air and other media (depending on O-ring material).	

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 Measurements							
Section	O-Ring Lace ø 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 - 14,9	2,2	2,45	0,6 - 0,3	0,4 - 0,2	0,3
02	2,62	15 - 39,9	3,2	3,75	0,8 - 0,4	0,4 - 0,3	0,5
03	3,53	40 - 79,9	4,2	5,50	1,2 - 0,8	0,8 - 0,4	0,7
04	5,33	80 - 132,9	6,3	7,75	1,4 - 1,0	1,0 - 0,4	1,2
05	7,00	133 - 329,9	8,1	10,50	1,8 - 1,2	1,2 - 0,5	1,5
06	7,00	330 - 669,9	8,1	12,25	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	HK150 0080-01-55N
10,00	5,10	2,20	009	HK150 0100-01-55N
12,00	7,10	2,20	011	HK150 0120-01-55N
14,00	9,10	2,20	012	HK150 0140-01-55N
15,00	7,50	3,20	109	HK150 0150-02-55N
16,00	11,10	2,20	013	HK150 0160-01-55N
16,00	8,50	3,20	109	HK150 0160-02-55N
18,00	10,50	3,20	110	HK150 0180-02-55N
20,00	15,10	2,20	015	HK150 0200-01-55N
20,00	12,50	3,20	112	HK150 0200-02-55N
22,00	14,50	3,20	113	HK150 0220-02-55N
24,00	16,50	3,20	114	HK150 0240-02-55N
25,00	17,50	3,20	115	HK150 0250-02-55N
25,00	14,00	4,20	207	HK150 0250-03-55N
28,00	20,50	3,20	117	HK150 0280-02-55N
30,00	22,50	3,20	118	HK150 0300-02-55N
32,00	24,50	3,20	119	HK150 0320-02-55N
32,00	21,00	4,20	211	HK150 0320-03-55N
35,00	27,50	3,20	121	HK150 0350-02-55N
38,00	30,50	3,20	123	HK150 0380-02-55N
39,00	31,50	3,20	124	HK150 0390-02-55N
40,00	32,50	3,20	124	HK150 0400-02-55N
40,00	29,00	4,20	216	HK150 0400-03-55N
42,00	31,00	4,20	217	HK150 0420-03-55N
45,00	34,00	4,20	219	HK150 0450-03-55N
48,00	37,00	4,20	221	HK150 0480-03-55N
50,00	39,00	4,20	222	HK150 0500-03-55N
50,00	34,50	6,30	324	HK150 0500-04-55N

D H9	d h10	E +0,2	O-Ring	Part N°.
52,00	41,00	4,20	223	HK150 0520-03-55N
55,00	44,00	4,20	224	HK150 0550-03-55N
60,00	49,00	4,20	225	HK150 0600-03-55N
63,00	52,00	4,20	226	HK150 0630-03-55N
63,00	47,50	6,30	328	HK150 0630-04-55N
64,00	53,00	4,20	226	HK150 0640-03-55N
65,00	54,00	4,20	227	HK150 0650-03-55N
70,00	59,00	4,20	228	HK150 0700-03-55N
70,00	54,50	6,30	330	HK150 0700-04-55N
75,00	64,00	4,20	230	HK150 0750-03-55N
80,00	69,00	4,20	231	HK150 0800-03-55N
80,00	64,50	6,30	333	HK150 0800-04-55N
80,00	59,00	8,10	58x7	HK150 0800-05-55N
85,00	69,50	6,30	335	HK150 0850-04-55N
85,00	64,00	8,10	64x7	HK150 0850-05-55N
89,00	73,50	6,30	336	HK150 0890-04-55N
90,00	74,50	6,30	336	HK150 0900-04-55N
90,00	69,00	8,10	68x7	HK150 0900-05-55N
95,00	79,50	6,30	338	HK150 0950-04-55N
95,00	74,00	8,10	73x7	HK150 0950-05-55N
100,00	84,50	6,30	339	HK150 1000-04-55N
100,00	79,00	8,10	79x7	HK150 1000-05-55N
105,00	89,50	6,30	341	HK150 1050-04-55N
105,00	84,00	8,10	83x7	HK150 1050-05-55N
110,00	94,50	6,30	343	HK150 1100-04-55N
110,00	89,00	8,10	89x7	HK150 1100-05-55N
115,00	99,50	6,30	344	HK150 1150-04-55N
115,00	94,00	8,10	94x7	HK150 1150-05-55N

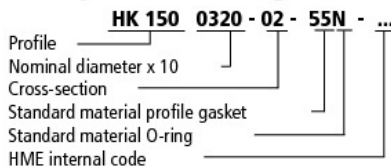


D H9	d h10	E +0,2	O-Ring	Part N°.
120,00	104,50	6,30	346	HK150 1200-04-55N
120,00	99,00	8,10	99x7	HK150 1200-05-55N
125,00	109,50	6,30	347	HK150 1250-04-55N
125,00	104,00	8,10	101x7	HK150 1250-05-55N
127,00	111,50	6,30	348	HK150 1270-04-55N
130,00	114,50	6,30	349	HK150 1300-04-55N
130,00	109,00	8,10	106x7	HK150 1300-05-55N
132,00	116,50	6,30	350	HK150 1320-04-55N
133,00	112,00	8,10	425	HK150 1330-05-55N
135,00	114,00	8,10	425	HK150 1350-05-55N
140,00	119,00	8,10	426	HK150 1400-05-55N
145,00	124,00	8,10	428	HK150 1450-05-55N
150,00	129,00	8,10	430	HK150 1500-05-55N
154,00	133,00	8,10	431	HK150 1540-05-55N
155,00	134,00	8,10	431	HK150 1550-05-55N
160,00	144,50	6,30	358	HK150 1600-04-55N
160,00	139,00	8,10	433	HK150 1600-05-55N
165,00	144,00	8,10	434	HK150 1650-05-55N
170,00	149,00	8,10	436	HK150 1700-05-55N
175,00	154,00	8,10	437	HK150 1750-05-55N
180,00	159,00	8,10	438	HK150 1800-05-55N
190,00	169,00	8,10	439	HK150 1900-05-55N
200,00	184,50	6,30	366	HK150 2000-04-55N
200,00	179,00	8,10	441	HK150 2000-05-55N
210,00	189,00	8,10	443	HK150 2100-05-55N
220,00	199,00	8,10	444	HK150 2200-05-55N
230,00	209,00	8,10	445	HK150 2300-05-55N
240,00	219,00	8,10	446	HK150 2400-05-55N
250,00	229,00	8,10	447	HK150 2500-05-55N
250,00	225,50	8,10	446	HK150 2500-06-55N
260,00	239,00	8,10	447	HK150 2600-05-55N
270,00	249,00	8,10	448	HK150 2700-05-55N
280,00	259,00	8,10	449	HK150 2800-05-55N
290,00	269,00	8,10	450	HK150 2900-05-55N
300,00	279,00	8,10	451	HK150 3000-05-55N
310,00	289,00	8,10	451	HK150 3100-05-55N

D H9	d h10	E +0,2	O-Ring	Part N°.
320,00	299,00	8,10	452	HK150 3200-05-55N
320,00	295,50	8,10	452	HK150 3200-06-55N
330,00	305,50	8,10	453	HK150 3300-06-55N
340,00	315,50	8,10	453	HK150 3400-06-55N
350,00	325,50	8,10	454	HK150 3500-06-55N
360,00	335,50	8,10	455	HK150 3600-06-55N
370,00	345,50	8,10	456	HK150 3700-06-55N
380,00	355,50	8,10	457	HK150 3800-06-55N
390,00	365,50	8,10	457	HK150 3900-06-55N
400,00	375,50	8,10	458	HK150 4000-06-55N
410,00	385,50	8,10	459	HK150 4100-06-55N
420,00	395,50	8,10	460	HK150 4200-06-55N
430,00	405,50	8,10	461	HK150 4300-06-55N
440,00	415,50	8,10	461	HK150 4400-06-55N
450,00	425,50	8,10	462	HK150 4500-06-55N
460,00	435,50	8,10	463	HK150 4600-06-55N
470,00	445,50	8,10	464	HK150 4700-06-55N
480,00	455,50	8,10	464	HK150 4800-06-55N
490,00	465,50	8,10	ASA 93	HK150 4900-06-55N
500,00	475,50	8,10	466	HK150 5000-06-55N
510,00	485,50	8,10	467	HK150 5100-06-55N
520,00	495,50	8,10	468	HK150 5200-06-55N
530,00	505,50	8,10	468	HK150 5300-06-55N
540,00	515,50	8,10	469	HK150 5400-06-55N
550,00	525,50	8,10	469	HK150 5500-06-55N
560,00	535,50	8,10	470	HK150 5600-06-55N
570,00	545,50	8,10	ASA 100	HK150 5700-06-55N
580,00	555,50	8,10	ASA 100	HK150 5800-06-55N
590,00	565,50	8,10	471	HK150 5900-06-55N
600,00	575,50	8,10	471	HK150 6000-06-55N
610,00	585,50	8,10	472	HK150 6100-06-55N
620,00	595,50	8,10	472	HK150 6200-06-55N
630,00	605,50	8,10	ASA 104	HK150 6300-06-55N
640,00	615,50	8,10	473	HK150 6400-06-55N
650,00	625,50	8,10	473	HK150 6500-06-55N
660,00	635,50	8,10	474	HK150 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 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 - Chloropren

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.