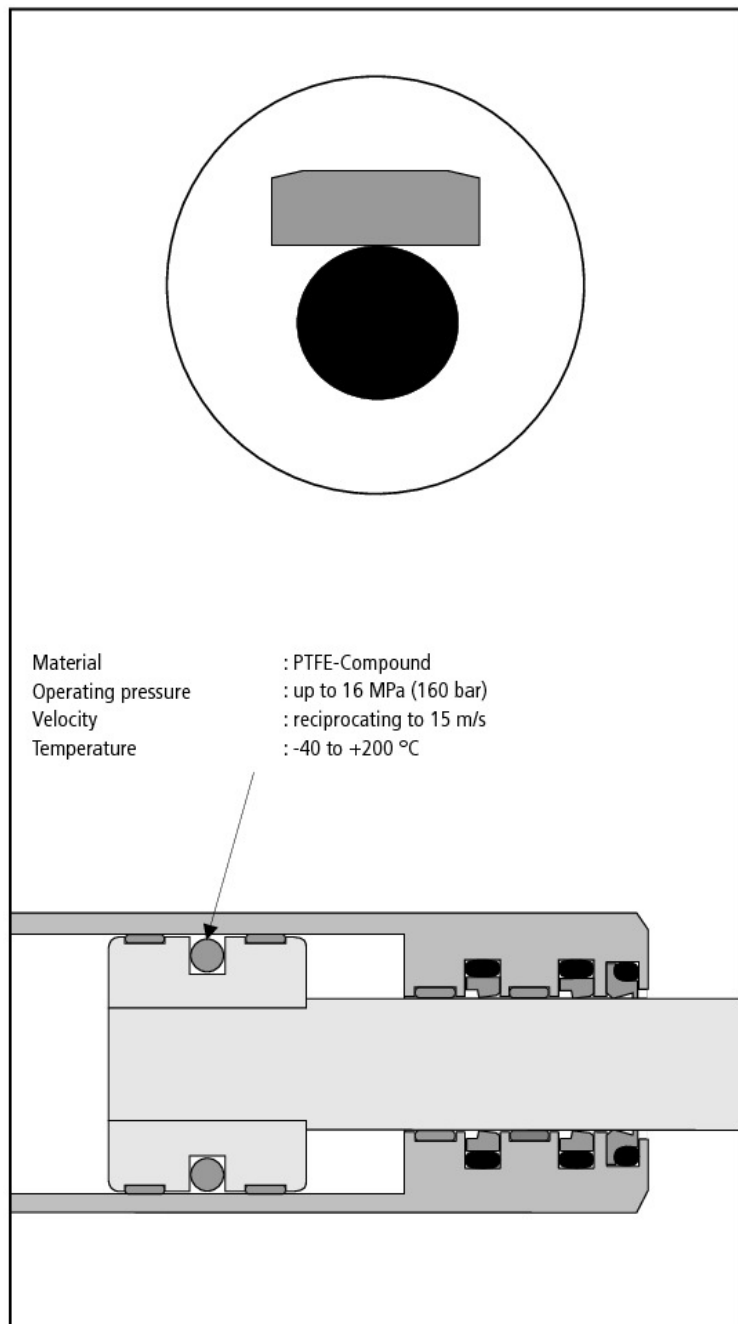


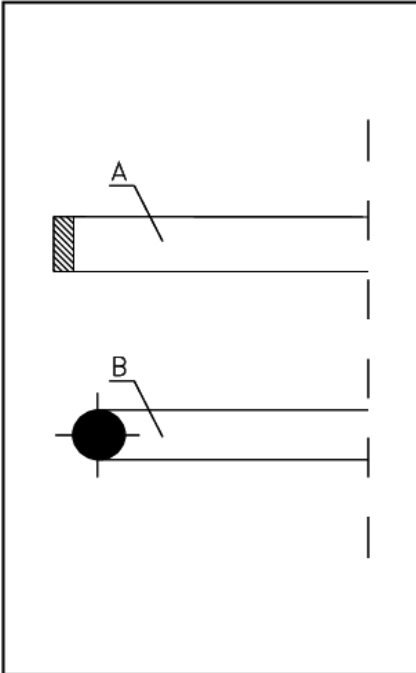
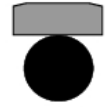
Piston seals from HK 156 and HK 157 series are preferred in low stress hydraulics applications.

On the basis of their good shear characteristics and low friction, they also find use in pneumatic cylinders.

Special Features::

- Two part construction consisting of a profile gas-gasket and an O-ring
- Outstanding shear characteristics, easy action
- Low friction, no stick-slip behaviour
- Broad temperature range of application and high chemical resistance, depending on O-ring material
- Meant for assembly on single part pistons
- Intermediate sizes available anytime.





Profile Gasket (Part A)

Gasket section is rectangular. The outer corners have been provided with a chamfer to simplify assembly.

Profile gaskets are manufactured from specially modified PTFE materials. PTFE/bronze (compound 55) is the standard material of construction (MOC) that is used in hydraulics applications, for pneumatic applications it is PTFE/carbon (compound 30).

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 (Acrylonitrile Butadiene Rubber) with 70 shore A, which guarantees particularly good resistance to hydraulic fluids.

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 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 Polyurethane - 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 fluid 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.

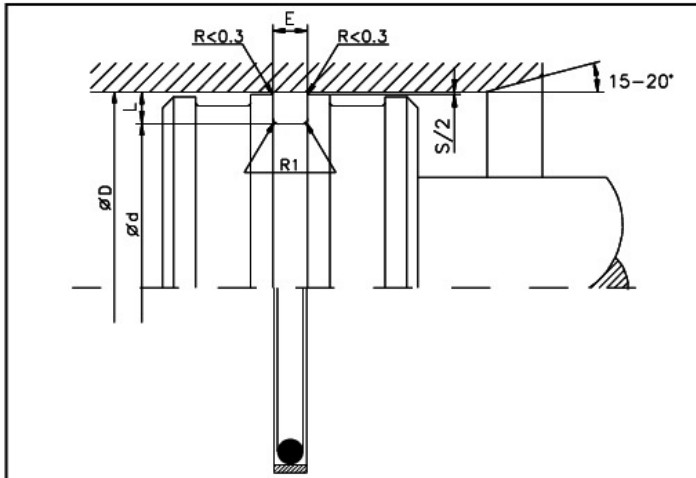
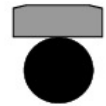
S: Silicone Rubbers.

C: Chloroprene Rubbers.

Piston seals series HK 156 and HK 157 is being successfully used for many years in hydraulic cylinders where ease of motion is essential.

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.

Please refer to our model HK 150 for newer constructions.



Limitations on Use	
Operating pressure	: up to 16 MPa (160 bar)
Velocity	: reciprocating to 4 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

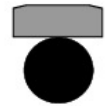
Recommended Assembly Dimensions for HK 156						
Section	O-Ring Lace-ø mm	Recommended Diameter Standard D mm	Groove Width E mm	Groove Depth L mm	Max. Diameter Clearance 0-160 bar S mm	Radius R1 max. mm
01	1,78	7 - 15,9	2,0	2,00	0,10	0,2
02	2,62	16 - 25,9	2,8	3,00	0,10	0,2
03	3,53	26 - 49,9	3,8	3,75	0,15	0,3
04	5,33	50 - 129,9	5,6	6,25	0,15	0,3
05	7,00	130 - 179,9	7,5	7,50	0,20	0,4
06	7,00	180 - 239,9	7,5	9,00	0,20	0,4
07	7,00	240 - 410,0	7,5	12,00	0,20	0,4

Profil HK 156

D H9	d h10	E +0,2	O-Ring	Part N°.
7,00	3,00	2,00	006	HK156 0070-01-55N
8,00	4,00	2,00	007	HK156 0080-01-55N
9,00	5,00	2,00	008	HK156 0090-01-55N
10,00	6,00	2,00	010	HK156 0100-01-55N
11,00	7,00	2,00	010	HK156 0110-01-55N
12,00	8,00	2,00	011	HK156 0120-01-55N
16,00	10,00	2,80	110	HK156 0160-02-55N
18,00	12,00	2,80	112	HK156 0180-02-55N
19,00	13,00	2,80	112	HK156 0190-02-55N
20,00	14,00	2,80	113	HK156 0200-02-55N
22,00	16,00	2,80	114	HK156 0220-02-55N
25,00	19,00	2,80	116	HK156 0250-02-55N
27,00	19,50	3,80	210	HK156 0270-03-55N
28,00	20,50	3,80	211	HK156 0280-03-55N
30,00	22,50	3,80	212	HK156 0300-03-55N
32,00	24,50	3,80	214	HK156 0320-03-55N
34,00	25,50	3,80	214	HK156 0340-03-55N
35,00	27,50	3,80	215	HK156 0350-03-55N
37,00	29,50	3,80	217	HK156 0370-03-55N
38,00	30,50	3,80	217	HK156 0380-03-55N
40,00	32,50	3,80	219	HK156 0400-03-55N
42,00	34,50	3,80	220	HK156 0420-03-55N
43,00	35,50	3,80	221	HK156 0430-03-55N
44,00	36,50	3,80	221	HK156 0440-03-55N
50,00	37,50	5,60	325	HK156 0500-04-55N

Profil HK 156

D H9	d h10	E +0,2	O-Ring	Part N°.
55,00	42,50	5,60	326	HK156 0550-04-55N
58,00	45,50	5,60	327	HK156 0580-04-55N
60,00	47,50	5,60	328	HK156 0600-04-55N
63,00	50,50	5,60	329	HK156 0630-04-55N
67,00	54,50	5,60	330	HK156 0670-04-55N
70,00	57,50	5,60	331	HK156 0700-04-55N
72,00	59,50	5,60	332	HK156 0720-04-55N
75,00	62,50	5,60	333	HK156 0750-04-55N
80,00	67,50	5,60	334	HK156 0800-04-55N
82,00	69,50	5,60	335	HK156 0820-04-55N
85,00	72,50	5,60	336	HK156 0850-04-55N
90,00	77,50	5,60	337	HK156 0900-04-55N
92,00	79,50	5,60	338	HK156 0920-04-55N
95,00	82,50	5,60	339	HK156 0950-04-55N
100,00	87,50	5,60	340	HK156 1000-04-55N
102,00	89,50	5,60	341	HK156 1020-04-55N
105,00	92,50	5,60	342	HK156 1050-04-55N
108,00	95,50	5,60	343	HK156 1080-04-55N
110,00	97,50	5,60	344	HK156 1100-04-55N
115,00	102,50	5,60	345	HK156 1150-04-55N
118,00	105,50	5,60	346	HK156 1180-04-55N
120,00	107,50	5,60	347	HK156 1200-04-55N
125,00	112,50	5,60	348	HK156 1250-04-55N
130,00	115,00	7,50	425	HK156 1300-05-55N
135,00	120,00	7,50	427	HK156 1350-05-55N



Profil HK 156

D H9	d h10	E +0,2	O-Ring	Part N°.
135,00	120,00	7,50	427	HK156 1350-05-55N
137,00	122,00	7,50	427	HK156 1370-05-55N
140,00	125,00	7,50	428	HK156 1400-05-55N
143,00	128,00	7,50	429	HK156 1430-05-55N
145,00	130,00	7,50	430	HK156 1450-05-55N
150,00	135,00	7,50	431	HK156 1500-05-55N
153,00	138,00	7,50	432	HK156 1530-05-55N
155,00	140,00	7,50	433	HK156 1550-05-55N
158,00	143,00	7,50	434	HK156 1580-05-55N
160,00	145,00	7,50	434	HK156 1600-05-55N
165,00	150,00	7,50	436	HK156 1650-05-55N
170,00	155,00	7,50	437	HK156 1700-05-55N
180,00	162,00	7,50	438	HK156 1800-06-55N
185,00	167,00	7,50	439	HK156 1850-06-55N
190,00	172,50	7,50	440	HK156 1900-06-55N
195,00	177,00	7,50	440	HK156 1950-06-55N
200,00	182,00	7,50	441	HK156 2000-06-55N
210,00	192,00	7,50	443	HK156 2100-06-55N
215,00	197,00	7,50	444	HK156 2150-06-55N
220,00	202,00	7,50	444	HK156 2200-06-55N

Profil HK 156

D H9	d h10	E +0,2	O-Ring	Part N°.
230,00	212,00	7,50	445	HK156 2300-06-55N
240,00	216,00	7,50	446	HK156 2400-07-55N
250,00	226,00	7,50	446	HK156 2500-07-55N
260,00	236,00	7,50	447	HK156 2600-07-55N
270,00	246,00	7,50	448	HK156 2700-07-55N
280,00	256,00	7,50	449	HK156 2800-07-55N
290,00	266,00	7,50	450	HK156 2900-07-55N
300,00	276,00	7,50	450	HK156 3000-07-55N
310,00	286,00	7,50	451	HK156 3100-07-55N
320,00	296,00	7,50	452	HK156 3200-07-55N
330,00	306,00	7,50	453	HK156 3300-07-55N
340,00	316,00	7,50	454	HK156 3400-07-55N
350,00	326,00	7,50	454	HK156 3500-07-55N
360,00	336,00	7,50	455	HK156 3600-07-55N
370,00	346,00	7,50	456	HK156 3700-07-55N
380,00	356,00	7,50	457	HK156 3800-07-55N
390,00	366,00	7,50	457	HK156 3900-07-55N
400,00	376,00	7,50	458	HK156 4000-07-55N
410,00	386,00	7,50	459	HK156 4100-07-55N

Profil HK 157

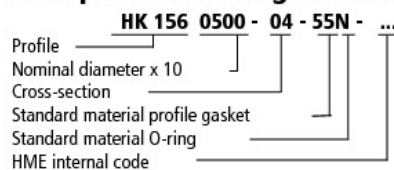
D H8	d h9	E +0,2	O-Ring	Part N°.
10,0	3,9	3,2	3,3 x 2,4	HK157 0100-01-55N
12,0	5,9	3,2	5,3 x 2,4	HK157 0120-01-55N
15,0	8,9	3,2	8,3 x 2,4	HK157 0150-01-55N
16,0	9,9	3,2	9,3 x 2,4	HK157 0160-01-55N
18,0	11,9	3,2	11,3 x 2,4	HK157 0180-01-55N
20,0	13,9	3,2	13,3 x 2,4	HK157 0200-01-55N
22,0	15,9	3,2	15,3 x 2,4	HK157 0220-01-55N
25,0	17,8	4,0	17,2 x 3,0	HK157 0250-01-55N
28,0	20,8	4,0	20,2 x 3,0	HK157 0280-01-55N
30,0	22,8	4,0	22,2 x 3,0	HK157 0300-01-55N
32,0	24,8	4,0	24,2 x 3,0	HK157 0320-01-55N
35,0	27,8	4,0	28,0 x 3,0	HK157 0350-01-55N
38,0	30,8	4,0	30,2 x 3,0	HK157 0380-01-55N
40,0	32,8	4,0	32,2 x 3,0	HK157 0400-01-55N
42,0	34,8	4,0	34,2 x 3,0	HK157 0420-01-55N
45,0	37,8	4,0	38,0 x 3,0	HK157 0450-01-55N
48,0	40,8	4,0	40,2 x 3,0	HK157 0480-01-55N
50,0	42,8	4,0	42,2 x 3,0	HK157 0500-01-55N
52,0	44,8	4,0	44,2 x 3,0	HK157 0520-01-55N
55,0	47,8	4,0	48,0 x 3,0	HK157 0550-01-55N

Profil HK 157

D H8	d h9	E +0,2	O-Ring	Part N°.
60,0	47,8	7,5	47,2 x 5,7	HK157 0600-01-55N
63,0	50,8	7,5	49,2 x 5,7	HK157 0630-01-55N
65,0	52,8	7,5	52,2 x 5,7	HK157 0650-01-55N
70,0	57,8	7,5	57,2 x 5,7	HK157 0700-01-55N
75,0	62,8	7,5	62,2 x 5,7	HK157 0750-01-55N
80,0	67,8	7,5	67,2 x 5,7	HK157 0800-01-55N
85,0	72,8	7,5	72,2 x 5,7	HK157 0850-01-55N
90,0	77,8	7,5	77,2 x 5,7	HK157 0900-01-55N
95,0	82,8	7,5	82,2 x 5,7	HK157 0950-01-55N
100,0	87,8	7,5	87,2 x 5,7	HK157 1000-01-55N
105,0	92,8	7,5	92,2 x 5,7	HK157 1050-01-55N
110,0	97,8	7,5	97,2 x 5,7	HK157 1100-01-55N
115,0	102,8	7,5	103,0 x 6,0	HK157 1150-01-55N
120,0	107,8	7,5	106,0 x 6,0	HK157 1200-01-55N
125,0	112,8	7,5	110,0 x 6,0	HK157 1250-01-55N
130,0	117,8	7,5	114,0 x 6,0	HK157 1300-01-55N
135,0	122,8	7,5	120,0 x 6,0	HK157 1350-01-55N
140,0	127,8	7,5	128,0 x 6,0	HK157 1400-01-55N
150,0	136,8	7,5	135,0 x 6,0	HK157 1500-01-55N

Further dimensions and intermediate sizes available on request.

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.