



Content

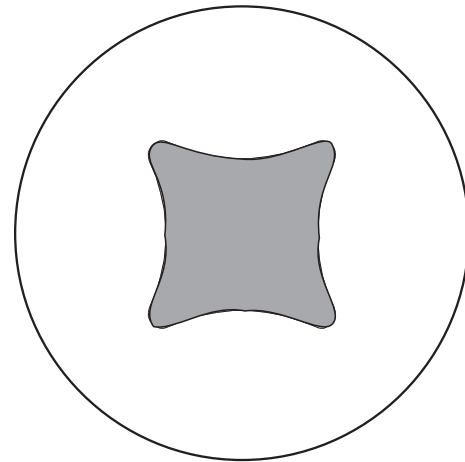
Mainly types of X-seal material / Tolerances
 Surface finish
 Fit tolerances for static and dynamic application
 Methodes of Mounting
 Groove sizes
 Standard sizes

Groove sizes-dynamic external sealing
 Groove sizes-dynamic internal sealing

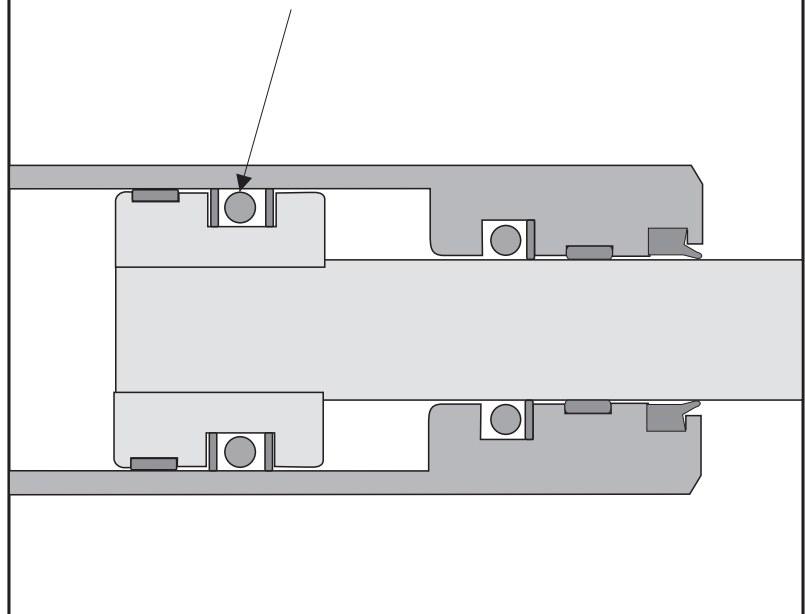
X-seal as a further development on the O-ring has a quadratic cross section and is provided with sealing lips on the corners. The X-seal sealing effect result through the 4 sealing lips and not due to deformation of the total cross section. The wide range of differencing quality of materials is will possible to unse different gas and fluids.

Special Features:

- Safe for twisting during mounting and operation
- Barr-free sealing lips
- Cost convenient groove geometry
- Economic constructions
- Double activ
- High temperature and pressure range
- Low on space requirement
- Extensive series of sizes



Pressure of operation	:static	to 20 Mpa (200 bar) without back ring
		to 40 Mpa (400 bar) with back ring
	dynamic	to 200 Mpa (2000 bar) with special back ring off 5 Mpa (50 bar) with back ring
Speed	: dynamic	0,5 m/s max.
	rotaric	1,0 m/s max.
Temperature	: depending of material	-50° C bis +240° C





X-SEAL materials / Main types

Due to the wide range of synthetic elastomers that are available on the market, X-seal material can be made to withstand temperatures from minus 50 C up to plus 240 C. to serve a wide range on fluid environments.

Nevertheless all combinations of material do not behave alike. Therefore, we include a table to provide an overview of standard materials and the proper diameter datas with reference to relevant applications.

It is not unusual to develop non standard material to cater the influence of some factors that might affect conditions of use.

Material HME	Hardness Shore A	Temperature °C	Standard material and relevant application
N70 N80	70 ± 5 80 ± 5	-30 - +130 -30 - +130	Standardmaterial in pneumatic and hydraulic Resistant to mineral oils, native and animal origin, water up to plus 70 C, flame resistant fluids - HFA (Oil in water- emulsion) - HFB (water in Oil-emulsion) - HFC (aqueous solution of polyalkylenglykols)
E80	80 ± 5	-50 - +150	Outstanding resistance to atmospheric effective substances, hot water steam up to 150° C. Good resistane to ozone, phosphae ester bases and brake fluids Not resistant to petrolean production.
F75	75 ± 5	-30 - +240	For static and dynamic sealing in combination with aliphatic and aromatic hydrocarbons, except entones and ozone at higher temperature.

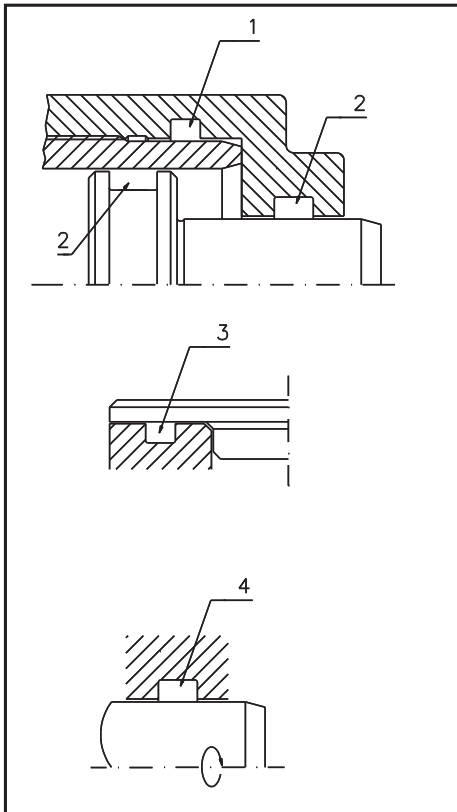
A multitude of other mixtures is available for special purpose applications.

Surface finish:

Applications	Surface	R max m	Rz m	Ra m
radial dynamic	Face	1,0-2,5	0,63-1,60	0,10-0,40
rotary	groove root	≤10,00	≤6,30	≤1,60
	groove flank	≤10,00	≤6,30	≤1,60
radial static	Face	≤10,00	≤6,30	≤1,60
axial static	groove root	≤16,00	≤10,00	≤1,60
	groove flank	≤16,00	≤10,00	≤3,20
Pulsatic pressure				
	Face	≤6,30	≤4,00	≤0,80
	groove root	≤10,00	≤6,30	≤1,60
	groove flank	≤10,00	≤6,30	≤1,60

Fit Tolerances for static and dynamic applications:

Pressure	X-SEAL-Hardness	Fit tolerance
≤ 2 Mpa (20 bar)	min. 70 SH A	H8/f7
≤ 7 Mpa (70 bar)	min. 70 SH A	H8/f7
≤ 10 Mpa (100 bar)	min. 70 SH A + back ring	H8/f7
≤ 10 Mpa (100 bar)	min. 70 SH A	H7/g6
≤ 35 Mpa (350 bar)	min. 70 SH A + Stützring	H7/g6



Mounting methods:

1. Radial static

2. Radial dynamic

In this method, take care that the internal diameter of X-seal nearly corresponding to the rod diameter (internally sealing) or the groove root diameter (externally sealing) as the case may be.

3. Axial static

Please notice that the direction of pressure is important. If the pressure acts from the inside, the X-seal must fit in with the outer-diameter of the groove, or may need to be compressed by 1 - 3 %. If pressure acts from the outside, the X-seal is to fit in with the internal diameter of the groove, or X-seal may need dilation by 6 %.

4. Rotary Internal Sealing

To reduce centrifugal forces, the X-seal is to be incorporated in the resting static parts of the housing. Then the internal diameter must be 2 - 5 % larger than the shaft and should be arranged as near as possible to the medium to be sealed. (heat purgation)

Pre stressing of X-SEAL:

dynamic 8% - 20%, static 10% - 30 %

Min. value in hydraulics 8%.

These values are dependent on respective cord strength for larger sealing splits.

We recommend the use of thrust rings if are more than 5 Mpa (50 Bar) pressure of operation dynamic or in the case of great Seal splits.

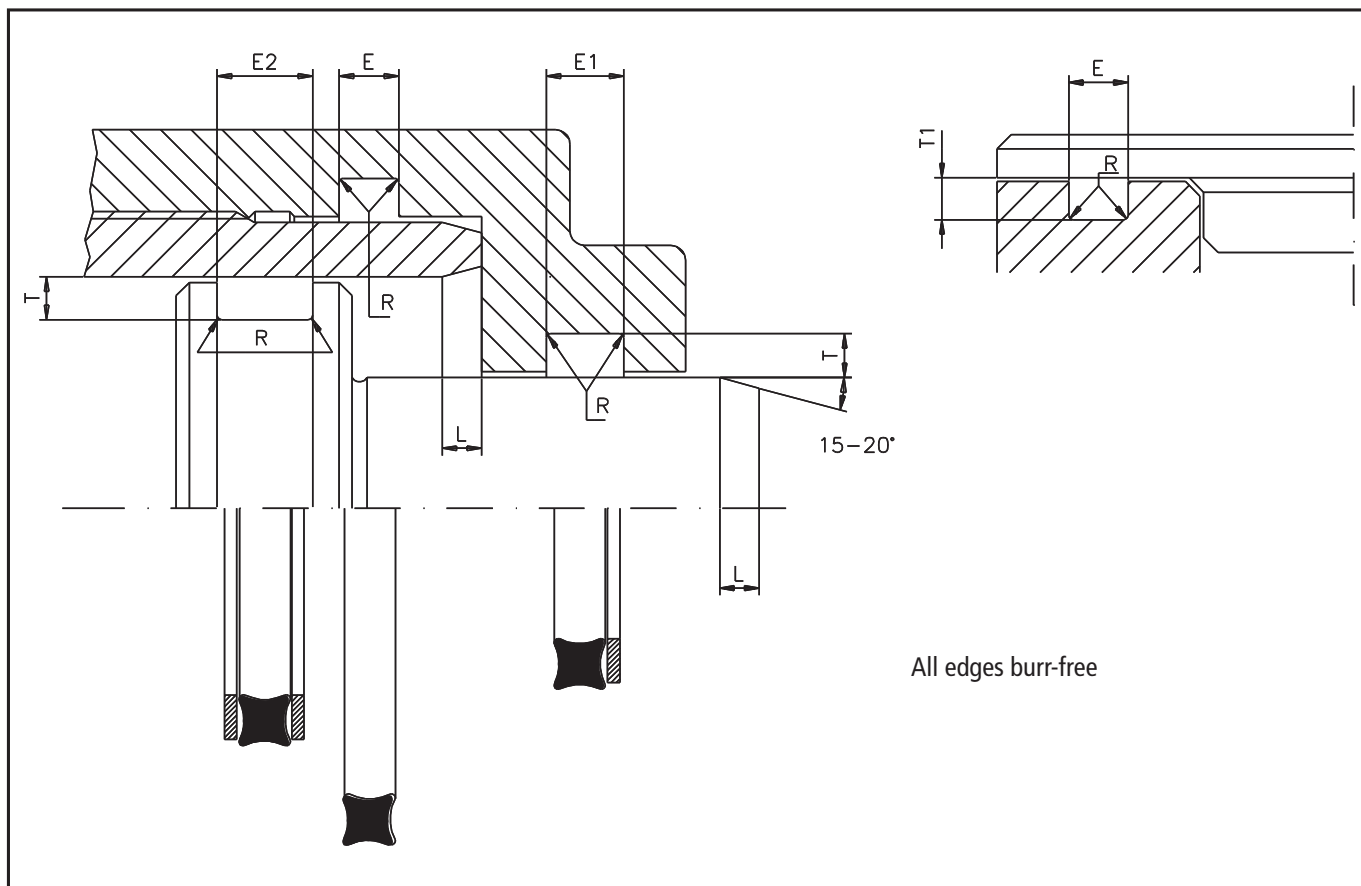


Table of Groove Sizes

	dynamic	static	without Thrust ring	1 Thrust ring	2 Thrust ring	Radius	Slide in bevel
S	T ±0,05	T1 ±0,05	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)	L (min)
1,78	1,50	1,40	2,15	3,65	5,15	0,20	1,50
2,62	2,25	2,10	3,15	4,65	6,15	0,20	1,50
3,50/3,53	3,20	3,00	4,10	5,60	7,10	0,40	1,80
5,33	4,80	4,60	6,40	8,20	10,00	0,50	2,70
6,99/7,00	6,40	6,00	8,40	10,90	13,40	0,60	3,60



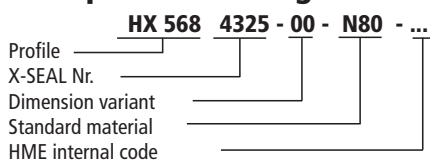
Standard Sizes

di	s	Part N°.	di	s	Part N°.
2,90	1,78	HX568 4006-00-N80	40,87	3,53	HX568 4223-00-N80
3,68	1,78	HX568 4007-00-N80	44,04	3,53	HX568 4224-00-N80
4,48	1,78	HX568 4008-00-N80	47,22	3,53	HX568 4225-00-N80
4,62	1,78	HX568 4008-01-N80	50,39	3,53	HX568 4226-00-N80
5,28	1,78	HX568 4009-00-N80	53,57	3,53	HX568 4227-00-N80
5,70	1,78	HX568 4009-01-N80	56,75	3,53	HX568 4228-00-N80
6,07	1,78	HX568 4010-00-N80	59,92	3,53	HX568 4229-00-N80
6,65	1,78	HX568 4010-01-N80	63,09	3,53	HX568 4230-00-N80
7,66	1,78	HX568 4011-00-N80	37,47	5,33	HX568 4325-00-N80
8,70	1,78	HX568 4011-01-N80	39,64	5,33	HX568 4325-01-N80
9,25	1,78	HX568 4012-00-N80	40,64	5,33	HX568 4326-00-N80
9,70	1,78	HX568 4012-01-N80	41,80	5,33	HX568 4326-01-N80
12,42	1,78	HX568 4014-00-N80	43,82	5,33	HX568 4327-00-N80
14,00	1,78	HX568 4015-00-N80	45,04	5,33	HX568 4327-01-N80
15,60	1,78	HX568 4016-00-N80	45,84	5,33	HX568 4327-02-N80
17,17	1,78	HX568 4017-00-N80	46,99	5,33	HX568 4328-00-N80
18,77	1,78	HX568 4018-00-N80	47,80	5,33	HX568 4328-01-N80
20,35	1,78	HX568 4019-00-N80	50,17	5,33	HX568 4329-00-N80
21,95	1,78	HX568 4020-00-N80	52,00	5,33	HX568 4329-01-N80
9,19	2,62	HX568 4110-00-N80	53,34	5,33	HX568 4330-00-N80
9,80	2,62	HX568 4110-01-N80	54,50	5,33	HX568 4330-01-N80
10,78	2,62	HX568 4111-00-N80	56,52	5,33	HX568 4331-00-N80
11,70	2,62	HX568 4111-01-N80	57,52	5,33	HX568 4331-01-N80
12,37	2,62	HX568 4112-00-N80	59,69	5,33	HX568 4332-00-N80
12,80	2,62	HX568 4112-01-N80	61,54	5,33	HX568 4332-01-N80
13,70	2,62	HX568 4112-02-N80	62,87	5,33	HX568 4333-00-N80
13,95	2,62	HX568 4113-00-N80	64,59	5,33	HX568 4333-01-N80
14,80	2,62	HX568 4114-01-N80	66,04	5,33	HX568 4334-00-N80
15,54	2,62	HX568 4114-00-N80	67,64	5,33	HX568 4334-01-N80
17,13	2,62	HX568 4115-00-N80	69,22	5,33	HX568 4335-00-N80
17,75	2,62	HX568 4115-01-N80	70,64	5,33	HX568 4335-01-N80
18,72	2,62	HX568 4116-00-N80	72,40	5,33	HX568 4336-00-N80
19,60	2,62	HX568 4116-01-N80	73,84	5,33	HX568 4336-01-N80
20,29	2,62	HX568 4117-00-N80	75,57	5,33	HX568 4336-02-N80
21,89	2,62	HX568 4118-00-N80	78,74	5,33	HX568 4338-00-N80
23,47	2,62	HX568 4119-00-N80	80,09	5,33	HX568 4338-01-N80
25,07	2,62	HX568 4120-00-N80	81,92	5,33	HX568 4339-00-N80
26,64	2,62	HX568 4121-00-N80	83,39	5,33	HX568 4339-02-N80
28,24	2,62	HX568 4122-00-N80	85,09	5,33	HX568 4340-00-N80
66,34	2,62	HX568 4146-00-N80	86,64	5,33	HX568 4340-01-N80
18,64	3,53	HX568 4210-00-N80	88,27	5,33	HX568 4341-00-N80
20,22	3,53	HX568 4211-00-N80	89,59	5,33	HX568 4341-01-N80
20,90	3,53	HX568 4211-01-N80	91,44	5,33	HX568 4342-00-N80
21,82	3,53	HX568 4212-00-N80	94,62	5,33	HX568 4343-00-N80
23,39	3,53	HX568 4213-00-N80	97,99	5,33	HX568 4343-01-N80
23,99	3,53	HX568 4213-01-N80	100,97	5,33	HX568 4345-00-N80
24,99	3,53	HX568 4214-00-N80	102,34	5,33	HX568 4345-01-N80
25,90	3,53	HX568 4214-01-N80	104,14	5,33	HX568 4346-00-N80
26,58	3,53	HX568 4215-00-N80	105,80	5,33	HX568 4346-01-N80
27,57	3,53	HX568 4215-01-N80	107,32	5,33	HX568 4347-00-N80
28,17	3,53	HX568 4216-00-N80	110,49	5,33	HX568 4348-00-N80
29,75	3,53	HX568 4217-00-N80	113,67	5,33	HX568 4349-00-N80
31,34	3,53	HX568 4218-00-N80	113,67	6,99	HX568 4425-00-N80
32,04	3,53	HX568 4218-01-N80	115,84	6,99	HX568 4425-01-N80
32,92	3,53	HX568 4219-00-N80	116,84	6,99	HX568 4426-00-N80
33,80	3,53	HX568 4219-01-N80	120,02	6,99	HX568 4427-00-N80
34,52	3,53	HX568 4220-00-N80	123,19	6,99	HX568 4428-00-N80
36,10	3,53	HX568 4221-00-N80	126,37	6,99	HX568 4429-00-N80
37,70	3,53	HX568 4222-00-N80	129,54	6,99	HX568 4430-00-N80



di	s	Part N°.	di	s	Part N°.
132,72	6,99	HX568 4431-00-N80	235,00	6,99	HX568 4447-02-N80
135,89	6,99	HX568 4432-00-N80	240,67	6,99	HX568 4448-00-N80
139,07	6,99	HX568 4433-00-N80	243,02	6,99	HX568 4448-01-N80
142,24	6,99	HX568 4434-00-N80	248,00	6,99	HX568 4448-02-N80
145,42	6,99	HX568 4435-00-N80	253,57	6,99	HX568 4449-00-N80
148,59	6,99	HX568 4436-00-N80	259,00	6,99	HX568 4449-01-N80
151,77	6,99	HX568 4437-00-N80	266,07	6,99	HX568 4450-00-N80
155,02	6,99	HX568 4437-01-N80	273,10	6,99	HX568 4450-01-N80
158,12	6,99	HX568 4438-00-N80	278,77	6,99	HX568 4451-00-N80
161,02	6,99	HX568 4438-01-N80	284,00	6,99	HX568 4451-01-N80
164,47	6,99	HX568 4439-00-N80	287,50	6,99	HX568 4451-02-N80
167,02	6,99	HX568 4439-01-N80	291,47	6,99	HX568 4452-00-N80
170,82	6,99	HX568 4440-00-N80	298,00	6,99	HX568 4452-01-N80
173,52	6,99	HX568 4440-01-N80	304,17	6,99	HX568 4453-00-N80
177,17	6,99	HX568 4441-00-N80	310,00	6,99	HX568 4453-01-N80
180,52	6,99	HX568 4441-01-N80	316,87	6,99	HX568 4454-00-N80
183,52	6,99	HX568 4442-00-N80	323,50	6,99	HX568 4454-01-N80
186,02	6,99	HX568 4442-01-N80	329,57	6,99	HX568 4455-00-N80
189,87	6,99	HX568 4443-00-N80	336,50	6,99	HX568 4455-01-N80
192,02	6,99	HX568 4443-01-N80	342,27	6,99	HX568 4456-00-N80
196,22	6,99	HX568 4444-00-N80	348,50	6,99	HX568 4456-01-N80
199,02	6,99	HX568 4444-01-N80	354,97	6,99	HX568 4457-00-N80
202,57	6,99	HX568 4445-00-N80	362,50	6,99	HX568 4457-01-N80
206,80	6,99	HX568 4445-01-N80	367,67	6,99	HX568 4458-00-N80
211,02	6,99	HX568 4445-02-N80	374,00	6,99	HX568 4458-01-N80
215,27	6,99	HX568 4446-00-N80	380,37	6,99	HX568 4459-00-N80
219,02	6,99	HX568 4446-01-N80	387,50	6,99	HX568 4459-01-N80
223,50	6,99	HX568 4446-02-N80	393,07	6,99	HX568 4460-00-N80
227,97	6,99	HX568 4447-00-N80	401,00	6,99	HX568 4460-01-N80
231,02	6,99	HX568 4447-01-N80			

Example for ordering X-Seal:



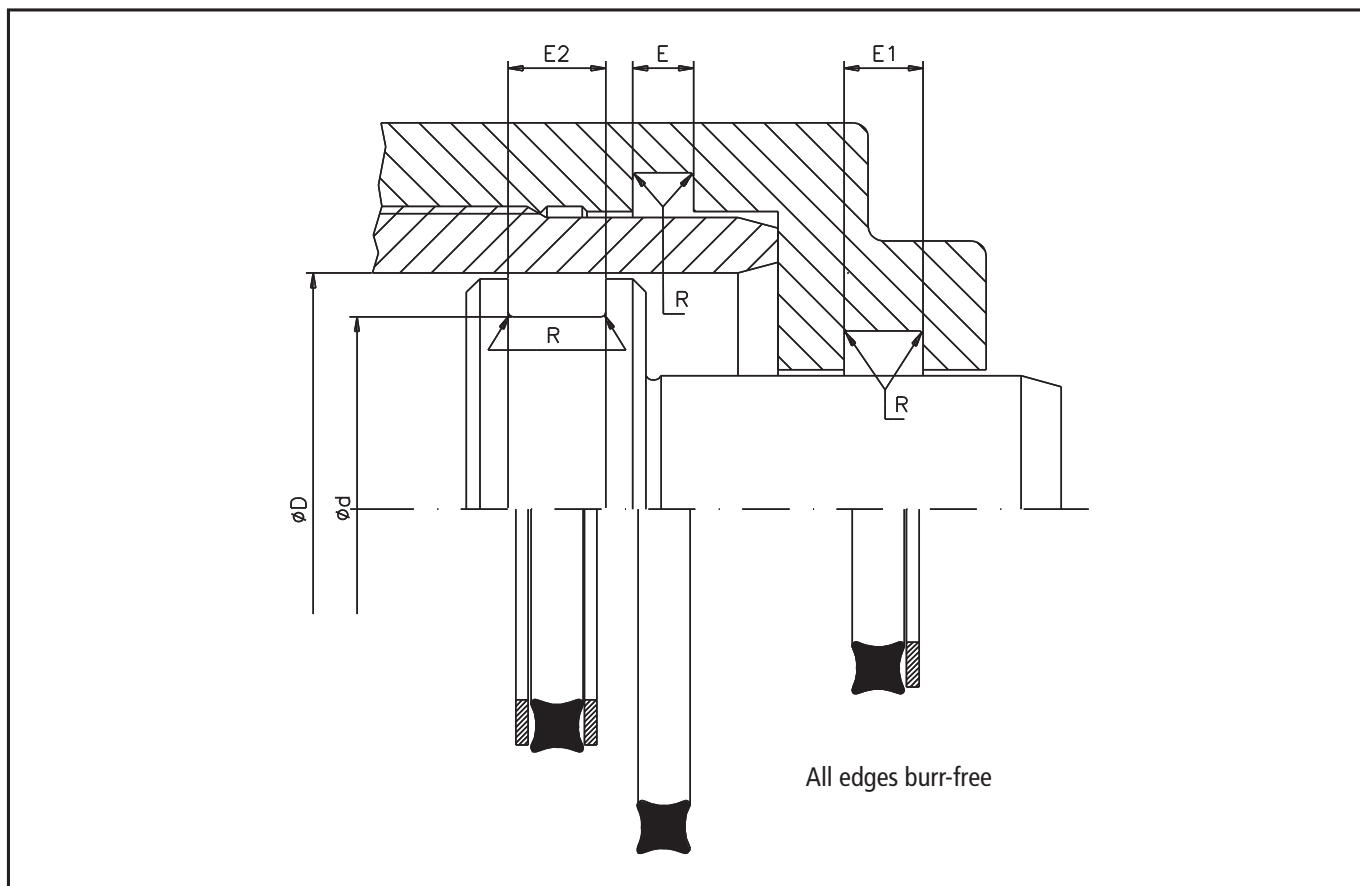
Material Key:

X-SEAL
 N80 - NBR 80 Shore A
 F75 - FPM 75 Shore A
 E80 - EPDM 80 Shore A

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.



Groove sizes for dynamic external sealing applications

Groove size						Part N.º		
D H8	d h9	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)	di x S	X-SEAL Part N.º	Thrust ring Part N.º
7,00	4,00	2,15	3,65	5,15	0,20	3,68 x 1,78	HX568 4007-00-N80	HY655 0007-00-01P
8,00	5,00	2,15	3,65	5,15	0,20	4,48 x 1,78	HX568 4008-00-N80	HY655 0008-00-01P
10,00	7,00	2,15	3,65	5,15	0,20	6,07 x 1,78	HX568 4010-00-N80	HY603 0010-00-300
12,00	9,00	2,15	3,65	5,15	0,20	8,70 x 1,78	HX568 4011-01-N80	HY603 0611-00-300
14,00	9,50	3,15	4,65	6,15	0,20	9,19 x 2,62	HX568 4110-00-N80	HY603 0110-00-300
15,00	10,50	3,15	4,65	6,15	0,20	9,80 x 2,62	HX568 4110-01-N80	HY603 0613-00-300
18,00	13,50	3,15	4,65	6,15	0,20	12,80 x 2,62	HX568 4112-01-N80	HY655 0112-01-01P
19,00	14,50	3,15	4,65	6,15	0,20	13,95 x 2,62	HX568 4113-00-N80	HY603 0113-00-300
20,00	15,50	3,15	4,65	6,15	0,20	14,70 x 2,62	HX568 4113-01-N80	HY655 0113-01-01P
22,00	17,50	3,15	4,65	6,15	0,20	17,13 x 2,62	HX568 4115-00-N80	HY603 0115-00-300
24,00	19,50	3,15	4,65	6,15	0,20	18,72 x 2,62	HX568 4116-00-N80	HY603 0116-00-300
25,00	20,50	3,15	4,65	6,15	0,20	19,60 x 2,62	HX568 4116-01-N80	HY655 0116-01-01P
26,00	19,60	4,10	5,60	7,10	0,40	18,64 x 3,53	HX568 4210-00-N80	HY655 0210-00-01P
28,00	21,60	4,10	5,60	7,10	0,40	20,90 x 3,53	HX568 4211-01-N80	HY655 0211-01-01P
30,00	23,60	4,10	5,60	7,10	0,40	23,39 x 3,53	HX568 4213-00-N80	HY655 0213-00-01P
32,00	25,60	4,10	5,60	7,10	0,40	24,99 x 3,53	HX568 4214-00-N80	HY655 0214-00-01P
35,00	28,60	4,10	5,60	7,10	0,40	28,17 x 3,53	HX568 4216-00-N80	HY655 0216-00-01P
40,00	33,60	4,10	5,60	7,10	0,40	32,92 x 3,53	HX568 4219-00-N80	HY655 0219-00-01P
42,00	35,60	4,10	5,60	7,10	0,40	34,52 x 3,53	HX568 4220-00-N80	HY655 0220-00-01P
45,00	38,60	4,10	5,60	7,10	0,40	37,70 x 3,53	HX568 4222-00-N80	HY655 0222-00-01P
48,00	38,40	6,40	8,20	10,00	0,50	37,47 x 3,53	HX568 4325-00-N80	HY603 0325-00-300

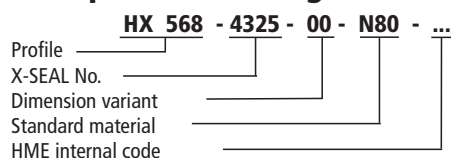


Groove size						di x S	Part N.º	
D H8	d h9	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)		X-SEAL Part N.º	Thrust ring Part N.º
50,00	40,40	6,40	8,20	10,00	0,50	39,64 x 5,33	HX568 4325-01-N80	HY655 0325-01-01P
52,00	42,40	6,40	8,20	10,00	0,50	40,64 x 5,33	HX568 4326-00-N80	HY603 0326-00-300
55,00	45,40	6,40	8,20	10,00	0,50	43,82 x 5,33	HX568 4327-00-N80	HY603 0327-00-300
56,00	46,40	6,40	8,20	10,00	0,50	45,04 x 5,33	HX568 4327-01-N80	HY655 0327-01-01P
58,00	48,40	6,40	8,20	10,00	0,50	46,99 x 5,33	HX568 4328-00-N80	HY603 0328-00-300
60,00	50,40	6,40	8,20	10,00	0,50	47,80 x 5,33	HX568 4328-01-N80	HY655 0328-01-01P
62,00	52,40	6,40	8,20	10,00	0,50	50,17 x 5,33	HX568 4329-00-N80	HY603 0329-00-300
63,00	53,40	6,40	8,20	10,00	0,50	52,00 x 5,33	HX568 4329-01-N80	HY655 0329-01-01P
65,00	55,40	6,40	8,20	10,00	0,50	53,34 x 5,33	HX568 4330-00-N80	HY603 0330-00-300
68,00	58,40	6,40	8,20	10,00	0,50	56,52 x 5,33	HX568 4331-00-N80	HY603 0331-00-300
70,00	60,40	6,40	8,20	10,00	0,50	59,69 x 5,33	HX568 4332-00-N80	HY603 0332-00-300
72,00	62,40	6,40	8,20	10,00	0,50	61,54 x 5,33	HX568 4332-01-N80	HY655 0332-01-01P
75,00	65,40	6,40	8,20	10,00	0,50	64,59 x 5,33	HX568 4333-01-N80	HY655 0333-01-01P
78,00	68,40	6,40	8,20	10,00	0,50	67,64 x 5,33	HX568 4334-01-N80	HY655 0334-01-01P
80,00	70,40	6,40	8,20	10,00	0,50	69,22 x 5,33	HX568 4335-00-N80	HY603 0335-00-300
82,00	72,40	6,40	8,20	10,00	0,50	70,64 x 5,33	HX568 4335-01-N80	HY655 0335-01-01P
85,00	75,40	6,40	8,20	10,00	0,50	73,84 x 5,33	HX568 4336-01-N80	HY655 0336-01-01P
88,00	78,40	6,40	8,20	10,00	0,50	75,57 x 5,33	HX568 4336-02-N80	HY655 0336-02-01P
90,00	80,40	6,40	8,20	10,00	0,50	78,74 x 5,33	HX568 4338-00-N80	HY603 0338-00-300
92,00	82,40	6,40	8,20	10,00	0,50	80,09 x 5,33	HX568 4338-01-N80	HY655 0338-01-01P
95,00	85,40	6,40	8,20	10,00	0,50	85,09 x 5,33	HX568 4340-00-N80	HY603 0340-00-300
98,00	88,40	6,40	8,20	10,00	0,50	86,64 x 5,33	HX568 4340-01-N80	HY655 0340-01-01P
100,00	90,40	6,40	8,20	10,00	0,50	88,27 x 5,33	HX568 4341-00-N80	HY603 0341-00-300
102,00	92,40	6,40	8,20	10,00	0,50	91,44 x 5,33	HX568 4342-00-N80	HY603 0342-00-300
105,00	95,40	6,40	8,20	10,00	0,50	94,62 x 5,33	HX568 4343-00-N80	HY603 0343-00-300
110,00	100,40	6,40	8,20	10,00	0,50	97,99 x 5,33	HX568 4343-01-N80	HY655 0343-01-01P
112,00	102,40	6,40	8,20	10,00	0,50	100,97 x 5,33	HX568 4345-00-N80	HY603 0345-00-300
115,00	105,40	6,40	8,20	10,00	0,50	104,14 x 5,33	HX568 4346-00-N80	HY603 0346-00-300
118,00	108,40	6,40	8,20	10,00	0,50	105,80 x 5,33	HX568 4346-01-N80	HY655 0346-01-01P
120,00	110,40	6,40	8,20	10,00	0,50	107,32 x 5,33	HX568 4347-00-N80	HY603 0623-00-300
122,00	112,40	6,40	8,20	10,00	0,50	110,49 x 5,33	HX568 4348-00-N80	HY603 0348-00-300
125,00	115,40	6,40	8,20	10,00	0,50	113,67 x 5,33	HX568 4349-00-N80	HY603 0349-00-300
128,00	115,20	8,40	10,90	13,40	0,60	113,67 x 6,99	HX568 4425-00-N80	HY655 0425-00-01P
130,00	117,20	8,40	10,90	13,40	0,60	116,84 x 6,99	HX568 4426-00-N80	HY655 0426-00-01P
135,00	122,20	8,40	10,90	13,40	0,60	120,02 x 6,99	HX568 4427-00-N80	HY655 0427-00-01P
138,00	125,20	8,40	10,90	13,40	0,60	123,19 x 6,99	HX568 4428-00-N80	HY655 0428-00-01P
140,00	127,20	8,40	10,90	13,40	0,60	126,37 x 6,99	HX568 4429-00-N80	HY655 0429-00-01P
145,00	132,20	8,40	10,90	13,40	0,60	129,54 x 6,99	HX568 4430-00-N80	HY655 0430-00-01P
148,00	135,20	8,40	10,90	13,40	0,60	132,72 x 6,99	HX568 4431-00-N80	HY655 0431-00-01P
150,00	137,20	8,40	10,90	13,40	0,60	135,89 x 6,99	HX568 4432-00-N80	HY655 0432-00-01P
155,00	142,20	8,40	10,90	13,40	0,60	139,07 x 6,99	HX568 4433-00-N80	HY655 0433-00-01P
160,00	147,20	8,40	10,90	13,40	0,60	145,42 x 6,99	HX568 4435-00-N80	HY655 0435-00-01P
165,00	152,20	8,40	10,90	13,40	0,60	148,59 x 6,99	HX568 4436-00-N80	HY655 0436-00-01P
170,00	157,20	8,40	10,90	13,40	0,60	155,02 x 6,99	HX568 4437-01-N80	HY655 0437-01-01P
175,00	162,20	8,40	10,90	13,40	0,60	158,12 x 6,99	HX568 4438-01-N80	HY655 0438-01-01P
180,00	167,20	8,40	10,90	13,40	0,60	164,47 x 6,99	HX568 4439-00-N80	HY655 0439-00-01P
185,00	172,20	8,40	10,90	13,40	0,60	167,02 x 6,99	HX568 4439-01-N80	HY655 0439-01-01P
190,00	177,20	8,40	10,90	13,40	0,60	173,52 x 6,99	HX568 4440-01-N80	HY655 0440-01-01P
195,00	182,20	8,40	10,90	13,40	0,60	180,52 x 6,99	HX568 4441-01-N80	HY655 0441-01-01P
200,00	187,20	8,40	10,90	13,40	0,60	183,52 x 6,99	HX568 4442-00-N80	HY655 0442-00-01P
205,00	192,20	8,40	10,90	13,40	0,60	189,87 x 6,99	HX568 4443-00-N80	HY655 0443-00-01P
210,00	197,20	8,40	10,90	13,40	0,60	196,22 x 6,99	HX568 4444-00-N80	HY655 0444-00-01P
215,00	202,20	8,40	10,90	13,40	0,60	199,02 x 6,99	HX568 4444-01-N80	HY655 0444-01-01P
220,00	207,20	8,40	10,90	13,40	0,60	202,57 x 6,99	HX568 4445-00-N80	HY655 0445-00-01P
225,00	212,20	8,40	10,90	13,40	0,60	206,80 x 6,99	HX568 4445-01-N80	HY655 0445-01-01P
230,00	217,20	8,40	10,90	13,40	0,60	215,27 x 6,99	HX568 4446-00-N80	HY655 0446-00-01P
235,00	222,20	8,40	10,90	13,40	0,60	219,02 x 6,99	HX568 4446-01-N80	HY655 0446-01-01P
240,00	227,20	8,40	10,90	13,40	0,60	223,50 x 6,99	HX568 4446-02-N80	HY655 0446-02-01P
245,00	232,20	8,40	10,90	13,40	0,60	227,97 x 6,99	HX568 4447-00-N80	HY655 0447-00-01P



Nutmaße							Part N.º	
D H8	d h9	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)	di x S	X-SEAL Part N.º	Thrust ring Part N.º
250,00	237,20	8,40	10,90	13,40	0,60	235,00 x 6,99	HX568 4447-02-N80	HY655 0447-02-01P
255,00	242,20	8,40	10,90	13,40	0,60	240,67 x 6,99	HX568 4448-00-N80	HY655 0448-00-01P
260,00	247,20	8,40	10,90	13,40	0,60	243,02 x 6,99	HX568 4448-01-N80	HY655 0448-01-01P
265,00	252,20	8,40	10,90	13,40	0,60	248,00 x 6,99	HX568 4448-02-N80	HY655 0448-02-01P
270,00	257,20	8,40	10,90	13,40	0,60	253,57 x 6,99	HX568 4449-00-N80	HY655 0449-00-01P
280,00	267,20	8,40	10,90	13,40	0,60	266,07 x 6,99	HX568 4450-00-N80	HY655 0450-00-01P
290,00	277,20	8,40	10,90	13,40	0,60	273,10 x 6,99	HX568 4450-01-N80	HY655 0450-01-01P
300,00	287,20	8,40	10,90	13,40	0,60	284,00 x 6,99	HX568 4451-01-N80	HY655 0451-01-01P
310,00	297,20	8,40	10,90	13,40	0,60	291,47 x 6,99	HX568 4452-00-N80	HY655 0452-00-01P
320,00	307,20	8,40	10,90	13,40	0,60	304,17 x 6,99	HX568 4453-00-N80	HY655 0453-00-01P
330,00	317,20	8,40	10,90	13,40	0,60	316,87 x 6,99	HX568 4454-00-N80	HY655 0454-00-01P
340,00	327,20	8,40	10,90	13,40	0,60	323,50 x 6,99	HX568 4454-01-N80	HY655 0454-01-01P
350,00	337,20	8,40	10,90	13,40	0,60	329,57 x 6,99	HX568 4455-00-N80	HY655 0455-00-01P
360,00	347,20	8,40	10,90	13,40	0,60	342,27 x 6,99	HX568 4456-00-N80	HY655 0456-00-01P
370,00	357,20	8,40	10,90	13,40	0,60	354,97 x 6,99	HX568 4457-00-N80	HY655 0457-00-01P
380,00	367,20	8,40	10,90	13,40	0,60	362,50 x 6,99	HX568 4457-01-N80	HY655 0457-01-01P
390,00	377,20	8,40	10,90	13,40	0,60	374,00 x 6,99	HX568 4458-01-N80	HY655 0458-01-01P
400,00	387,20	8,40	10,90	13,40	0,60	380,37 x 6,99	HX568 4459-00-N80	HY655 0459-00-01P

Example for ordering X-SEAL:

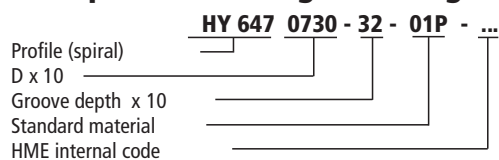


Material Key:

X-SEAL

N80 - NBR 80 Shore A
F75 - FPM 75 Shore A
E80 - EPDM 80 Shore A

Example for ordering Back Ring:



Material Key:

Thrust ring construction

HY603 (endless)

HY647 (spiral)

Thrust ring construction

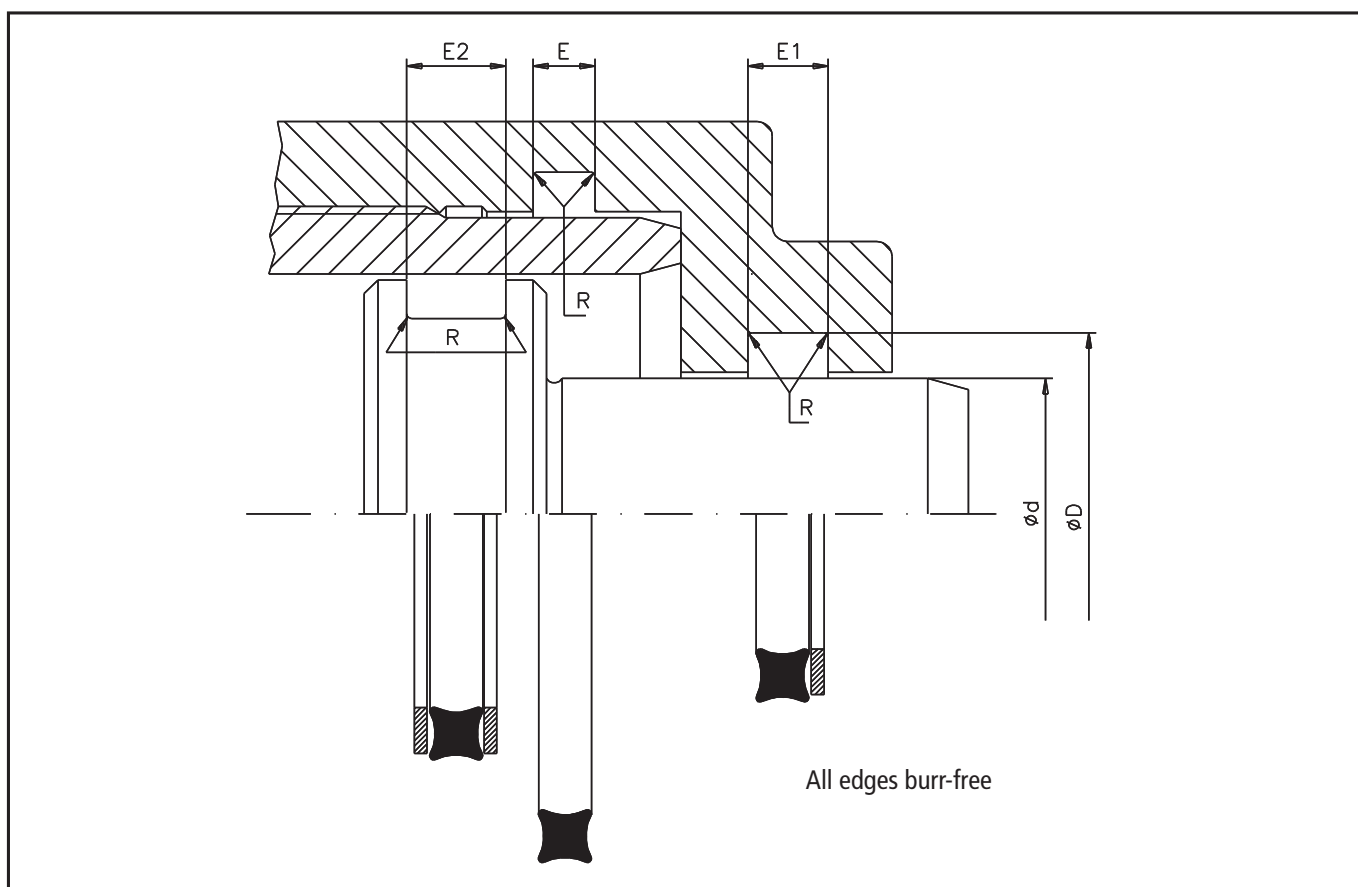
300 - Polyesterelastomer

01P - PTFE pure
25P - PTFE glass filled
30P - PTFE carbon
55P - PTFE bronze

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.



Groove sizes for dynamic internal sealing applications

Groove size						Part N.º		
d f7	D H9	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)	di x S	X-SEAL Part N.º	Thrust ring Part N.º
3,00	6,00	2,15	3,65	5,15	0,20	2,90 x 1,78	HX568 4006-00-N80	HY650 0006-00-01P
5,00	8,00	2,15	3,65	5,15	0,20	5,28 x 1,78	HX568 4009-00-N80	HY650 0009-00-01P
6,00	9,00	2,15	3,65	5,15	0,20	6,07 x 1,78	HX568 4010-00-N80	HY603 0010-00-300
8,00	11,00	2,15	3,65	5,15	0,20	7,66 x 1,78	HX568 4011-00-N80	HY603 0011-00-300
9,00	12,00	2,15	3,65	5,15	0,20	9,25 x 1,78	HX568 4012-00-N80	HY603 0012-00-300
9,00	13,50	3,15	4,65	6,15	0,20	9,19 x 2,62	HX568 4110-00-N80	HY603 0110-00-300
10,00	14,50	3,15	4,65	6,15	0,20	9,80 x 2,62	HX568 4110-01-N80	HY603 0110-00-300
12,00	16,50	3,15	4,65	6,15	0,20	12,37 x 2,62	HX568 4112-00-N80	HY603 0112-00-300
14,00	18,50	3,15	4,65	6,15	0,20	13,95 x 2,62	HX568 4113-00-N80	HY603 0113-00-300
15,00	19,50	3,15	4,65	6,15	0,20	14,70 x 2,62	HX568 4113-01-N80	HY603 0616-00-300
16,00	19,00	2,15	3,65	5,15	0,20	15,60 x 1,78	HX568 4016-00-N80	HY603 0016-00-300
17,00	21,50	3,15	4,65	6,15	0,20	17,13 x 2,62	HX568 4115-00-N80	HY603 0115-00-300
18,00	22,50	3,15	4,65	6,15	0,20	17,75 x 2,62	HX568 4115-01-N80	HY603 0617-00-300
20,00	24,50	3,15	4,65	6,15	0,20	20,29 x 2,62	HX568 4117-00-N80	HY603 0117-00-300
22,00	26,50	3,15	4,65	6,15	0,20	21,89 x 2,62	HX568 4118-00-N80	HY603 0118-00-300
23,00	27,50	3,15	4,65	6,15	0,20	23,47 x 2,62	HX568 4119-00-N80	HY603 0119-00-300
25,00	29,50	3,15	4,65	6,15	0,20	25,07 x 2,62	HX568 4120-00-N80	HY603 0120-00-300
25,00	31,40	4,10	5,60	7,10	0,40	24,99 x 3,53	HX568 4214-00-N80	HY650 0214-00-01P
26,00	32,40	4,10	5,60	7,10	0,40	25,90 x 3,53	HX568 4214-01-N80	HY650 0214-01-01P
27,00	31,50	3,15	4,65	6,15	0,20	26,64 x 2,62	HX568 4121-00-N80	HY603 0121-00-300
28,00	32,50	3,15	4,65	6,15	0,20	28,24 x 2,62	HX568 4122-00-N80	HY603 0122-00-300

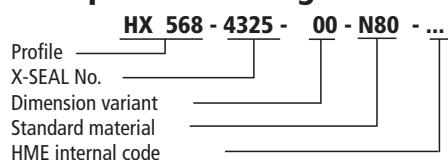


Nutmaße							Part N.°	
d f7	D H9	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)	di x S	X-SEAL Part N.°	Thrust ring Part N.°
30,00	36,40	4,10	5,60	7,10	0,40	29,75 x 3,53	HX568 4217-00-N80	HY650 0217-00-01P
32,00	38,40	4,10	5,60	7,10	0,40	32,04 x 3,53	HX568 4218-01-N80	HY650 0218-01-01P
34,00	40,40	4,10	5,60	7,10	0,40	33,80 x 3,53	HX568 4219-01-N80	HY650 0219-01-01P
35,00	41,40	4,10	5,60	7,10	0,40	34,52 x 3,53	HX568 4220-00-N80	HY650 0220-00-01P
36,00	42,40	4,10	5,60	7,10	0,40	36,10 x 3,53	HX568 4221-00-N80	HY650 0221-00-01P
38,00	44,40	4,10	5,60	7,10	0,40	37,70 x 3,53	HX568 4222-00-N80	HY650 0222-00-01P
40,00	46,40	4,10	5,60	7,10	0,40	40,87 x 3,53	HX568 4223-00-N80	HY650 0223-00-01P
40,00	49,60	6,40	8,20	10,00	0,50	40,64 x 5,33	HX568 4326-00-N80	HY603 0326-00-300
42,00	51,60	6,40	8,20	10,00	0,50	41,80 x 5,33	HX568 4326-01-N80	HY650 0326-01-01P
45,00	54,60	6,40	8,20	10,00	0,50	45,04 x 5,33	HX568 4327-01-N80	HY650 0327-01-01P
46,00	55,60	6,40	8,20	10,00	0,50	45,84 x 5,33	HX568 4327-02-N80	HY650 0327-02-01P
47,00	56,60	6,40	8,20	10,00	0,50	46,99 x 5,33	HX568 4328-00-N80	HY603 0328-00-300
48,00	57,60	6,40	8,20	10,00	0,50	47,80 x 5,33	HX568 4328-01-N80	HY650 0328-01-01P
50,00	59,60	6,40	8,20	10,00	0,50	50,17 x 5,33	HX568 4329-00-N80	HY603 0329-00-300
52,00	61,60	6,40	8,20	10,00	0,50	52,00 x 5,33	HX568 4329-01-N80	HY650 0329-01-01P
55,00	64,60	6,40	8,20	10,00	0,50	54,50 x 5,33	HX568 4330-01-N80	HY603 0330-00-300
56,00	65,60	6,40	8,20	10,00	0,50	56,52 x 5,33	HX568 4331-00-N80	HY603 0331-00-300
58,00	67,60	6,40	8,20	10,00	0,50	57,52 x 5,33	HX568 4331-01-N80	HY650 0331-01-01P
60,00	69,60	6,40	8,20	10,00	0,50	59,69 x 5,33	HX568 4332-00-N80	HY603 0332-00-300
63,00	72,60	6,40	8,20	10,00	0,50	62,87 x 5,33	HX568 4333-00-N80	HY603 0333-00-300
65,00	74,60	6,40	8,20	10,00	0,50	64,59 x 5,33	HX568 4333-01-N80	HY650 0333-01-01P
70,00	79,60	6,40	8,20	10,00	0,50	69,22 x 5,33	HX568 4335-00-N80	HY603 0335-00-300
75,00	84,60	6,40	8,20	10,00	0,50	75,57 x 5,33	HX568 4336-02-N80	HY650 0336-02-01P
80,00	89,60	6,40	8,20	10,00	0,50	80,09 x 5,33	HX568 4338-01-N80	HY603 0338-00-300
85,00	94,60	6,40	8,20	10,00	0,50	85,09 x 5,33	HX568 4340-00-N80	HY603 0340-00-300
90,00	99,60	6,40	8,20	10,00	0,50	89,59 x 5,33	HX568 4341-01-N80	HY603 0621-00-300
95,00	104,60	6,40	8,20	10,00	0,50	94,62 x 5,33	HX568 4343-00-N80	HY603 0343-00-300
100,00	109,60	6,40	8,20	10,00	0,50	100,97 x 5,33	HX568 4345-00-N80	HY603 0622-00-300
105,00	114,60	6,40	8,20	10,00	0,50	105,80 x 5,33	HX568 4346-01-N80	HY603 0346-00-300
110,00	119,60	6,40	8,20	10,00	0,50	110,49 x 5,33	HX568 4348-00-N80	HY603 0623-00-300
115,00	127,80	8,40	10,90	13,40	0,60	115,84 x 6,99	HX568 4425-01-N80	HY650 0425-01-01P
120,00	132,80	8,40	10,90	13,40	0,60	120,02 x 6,99	HX568 4427-00-N80	HY650 0427-00-01P
125,00	137,80	8,40	10,90	13,40	0,60	126,37 x 6,99	HX568 4429-00-N80	HY650 0429-00-01P
130,00	142,80	8,40	10,90	13,40	0,60	129,54 x 6,99	HX568 4430-00-N80	HY650 0430-00-01P
135,00	147,80	8,40	10,90	13,40	0,60	135,89 x 6,99	HX568 4432-00-N80	HY650 0432-00-01P
140,00	152,80	8,40	10,90	13,40	0,60	139,07 x 6,99	HX568 4433-00-N80	HY650 0433-00-01P
145,00	157,80	8,40	10,90	13,40	0,60	145,42 x 6,99	HX568 4435-00-N80	HY650 0435-00-01P
150,00	162,80	8,40	10,90	13,40	0,60	151,77 x 6,99	HX568 4437-00-N80	HY650 0437-00-01P
155,00	167,80	8,40	10,90	13,40	0,60	155,02 x 6,99	HX568 4437-01-N80	HY650 0437-01-01P
158,00	170,80	8,40	10,90	13,40	0,60	158,12 x 6,99	HX568 4438-00-N80	HY650 0438-00-01P
160,00	172,80	8,40	10,90	13,40	0,60	161,02 x 6,99	HX568 4438-01-N80	HY650 0438-01-01P
165,00	177,80	8,40	10,90	13,40	0,60	164,47 x 6,99	HX568 4439-00-N80	HY650 0439-00-01P
170,00	182,80	8,40	10,90	13,40	0,60	170,82 x 6,99	HX568 4440-00-N80	HY650 0440-00-01P
175,00	187,80	8,40	10,90	13,40	0,60	173,52 x 6,99	HX568 4440-01-N80	HY650 0440-01-01P
180,00	192,80	8,40	10,90	13,40	0,60	180,52 x 6,99	HX568 4441-01-N80	HY650 0441-01-01P
185,00	197,80	8,40	10,90	13,40	0,60	186,02 x 6,99	HX568 4442-01-N80	HY650 0442-01-01P
190,00	202,80	8,40	10,90	13,40	0,60	189,87 x 6,99	HX568 4443-00-N80	HY650 0443-00-01P
195,00	207,80	8,40	10,90	13,40	0,60	196,22 x 6,99	HX568 4444-00-N80	HY650 0444-00-01P
200,00	212,80	8,40	10,90	13,40	0,60	199,02 x 6,99	HX568 4444-01-N80	HY650 0444-01-01P
205,00	217,80	8,40	10,90	13,40	0,60	206,80 x 6,99	HX568 4445-01-N80	HY650 0445-01-01P
210,00	222,80	8,40	10,90	13,40	0,60	211,02 x 6,99	HX568 4445-02-N80	HY650 0445-02-01P
215,00	227,80	8,40	10,90	13,40	0,60	215,27 x 6,99	HX568 4446-00-N80	HY650 0446-00-01P
220,00	232,80	8,40	10,90	13,40	0,60	219,02 x 6,99	HX568 4446-01-N80	HY650 0446-01-01P
230,00	242,80	8,40	10,90	13,40	0,60	227,97 x 6,99	HX568 4447-00-N80	HY650 0447-00-01P
240,00	252,80	8,40	10,90	13,40	0,60	240,67 x 6,99	HX568 4448-00-N80	HY650 0448-00-01P
250,00	262,80	8,40	10,90	13,40	0,60	248,00 x 6,99	HX568 4448-02-N80	HY650 0448-02-01P
260,00	272,80	8,40	10,90	13,40	0,60	259,00 x 6,99	HX568 4449-01-N80	HY650 0449-01-01P
270,00	282,80	8,40	10,90	13,40	0,60	266,07 x 6,99	HX568 4450-00-N80	HY650 0450-00-01P
280,00	292,80	8,40	10,90	13,40	0,60	278,77 x 6,99	HX568 4451-00-N80	HY650 0451-00-01P



Nutmaße						di x S	Part N.º	
d f7	D H9	E ±0,2	E1 ±0,2	E2 ±0,2	R (max)		X-SEAL Part N.º	Thrust ring Part N.º
290,00	302,80	8,40	10,90	13,40	0,60	291,47 x 6,99	HX568 4452-00-N80	HY650 0452-00-01P
300,00	312,80	8,40	10,90	13,40	0,60	298,00 x 6,99	HX568 4452-01-N80	HY650 0452-01-01P
310,00	322,80	8,40	10,90	13,40	0,60	310,00 x 6,99	HX568 4453-01-N80	HY650 0453-01-01P
320,00	332,80	8,40	10,90	13,40	0,60	316,87 x 6,99	HX568 4454-00-N80	HY650 0454-00-01P
330,00	342,80	8,40	10,90	13,40	0,60	329,57 x 6,99	HX568 4455-00-N80	HY650 0455-00-01P
340,00	352,80	8,40	10,90	13,40	0,60	336,50 x 6,99	HX568 4455-01-N80	HY650 0455-01-01P
350,00	362,80	8,40	10,90	13,40	0,60	348,50 x 6,99	HX568 4456-01-N80	HY650 0456-01-01P
360,00	372,80	8,40	10,90	13,40	0,60	362,50 x 6,99	HX568 4457-01-N80	HY650 0457-01-01P
370,00	382,80	8,40	10,90	13,40	0,60	367,67 x 6,99	HX568 4458-00-N80	HY650 0458-00-01P
380,00	392,80	8,40	10,90	13,40	0,60	380,37 x 6,99	HX568 4459-00-N80	HY650 0459-00-01P
390,00	402,80	8,40	10,90	13,40	0,60	393,07 x 6,99	HX568 4460-00-N80	HY650 0460-00-01P
400,00	412,80	8,40	10,90	13,40	0,60	401,00 x 6,99	HX568 4460-01-N80	HY650 0460-01-01P

Example for ordering X-SEAL:

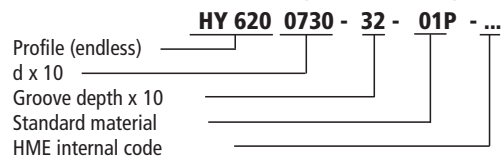


Material Key:

X-SEAL

N80 - NBR 80 Shore A
F75 - FPM 75 Shore A
E80 - EPDM 80 Shore A

Example for ordering Back Ring:



Material Key:

Back ring construction

HY603 (endless)

HY620 (endless)

HY625 (splitted)

Standard material Back Ring

300 - Polyester elastomer

01P - PTFE pure

25P - PTFE glass filled

30P - PTFE carbon

55P - PTFE bronze

Issue

01	05
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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.