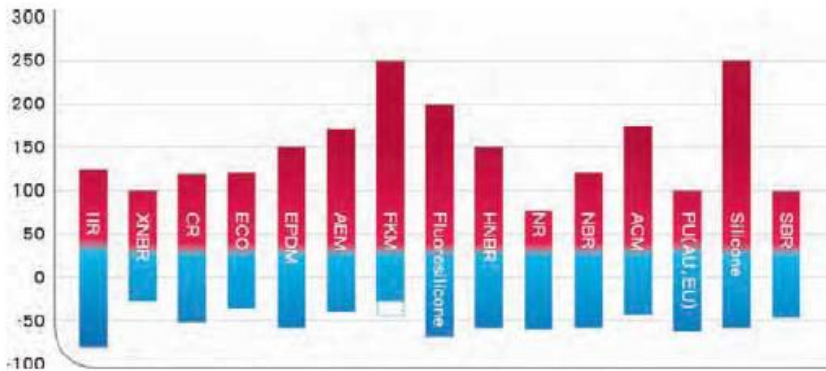


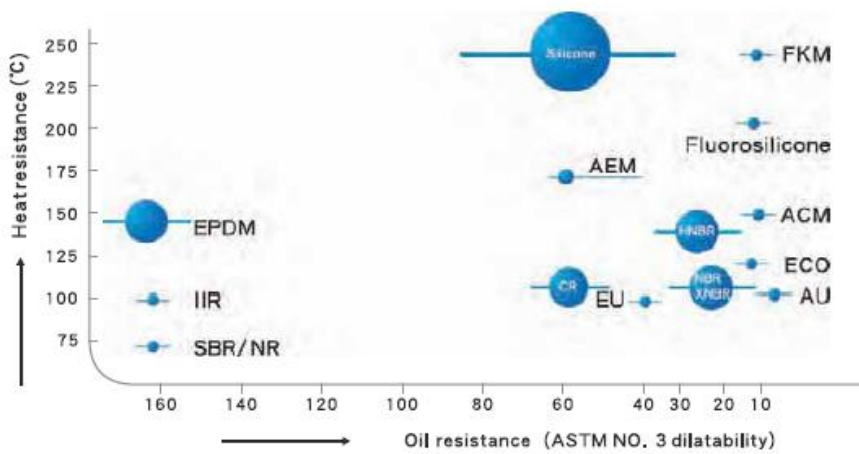
General Properties of Elastomers

Service Temperature Range Chart

This service temperature range is for reference only. In actual service environment, some specific compounds may not reach the maximum temperature as indicated in this chart. However, higher temperature may be attained if exposure is short period or intermittent.



Oil And Heat Resistance Comparison Chart



General Properties of Elastomers



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O-Ring Design Reference

Design Data: Extrusion Limit of O-ring & Clearance Gap

The O-ring is contained in the gland and forced to flow into the surface imperfections of the glands and any clearance gap available to it. So, O-ring can perform sealing by means of squeeze under low-pressure conditions. However, as the pressure mounts, it becomes distorted. The distortion increases the strain, and the increased strain results in more tight sealing. Under high pressure, O-ring would extrude out of the clearance gap. The extrusion will cause seal failure in a standard gland configuration.

An antiextrusion back-up ring, made of a tough, cut-resistant material such as leather, Teflon or hard rubber, is suggested. In static applications it may be possible to modify the gland design to withstand the higher pressure without the addition of a back-up ring. Anyway, care must be taken to make the extrusion as small as possible. The extent of this extrusion depends upon the hardness of O-ring, pressure and clearance gap. Please refer to FIG 1, FIG 2 and TABLE 1.

FIG. 1



FIG.2: EXTRUSION LIMIT OF O-RING

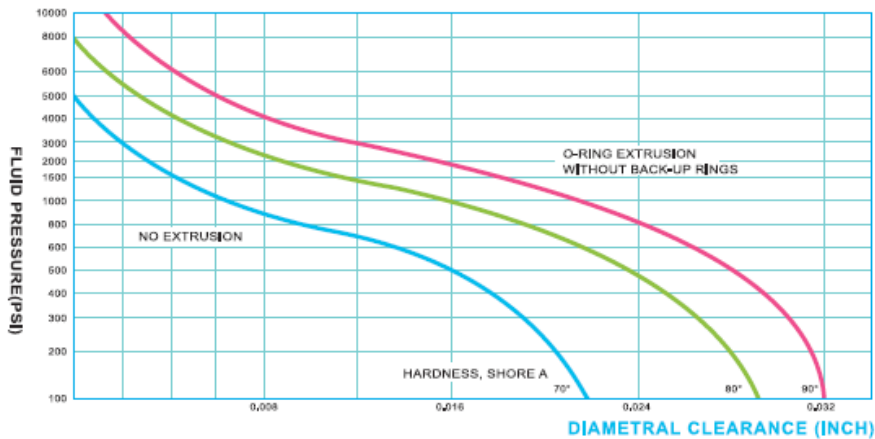


Table 1: Limit of the Diametral Clearance (Unit: Inch) Against Fluid Pressure

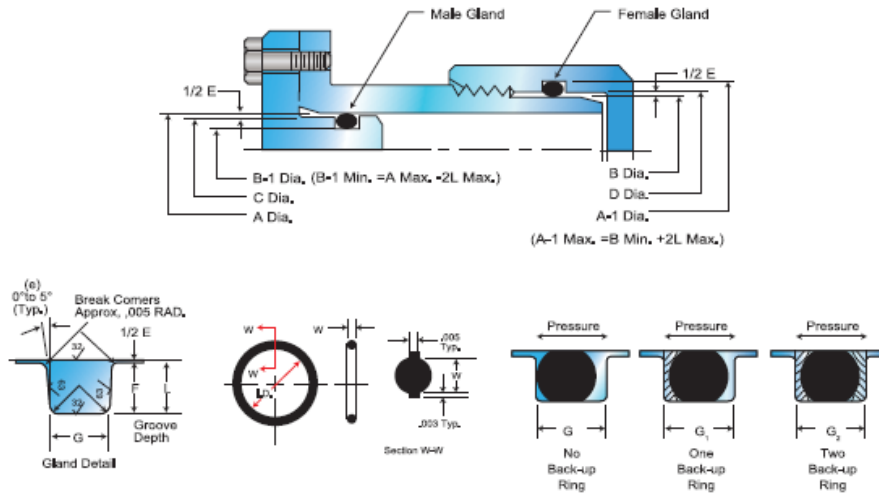
HARDNESS SHORE A	PRESSURE (PSI)				
	UP TO 500	500-1000	1000-1500	1500-2000	2000-3000
70	0.016	0.010	0.006	0.004	0.002
90	0.028	0.024	0.020	0.016	0.010

EXTRUSION HAPPENS BEYOND THE LIMIT OF DIAMETRAL CLEARANCE AGAINST FLUID PRESSURE.



O-Ring Design Reference

Static O-ring Sealing- Industrial Static Seal Glands



Design- For Industrial O-Ring Static Seal Glands

O-Ring Size AS568A-	W Cross-Section		L Gland Depth	Spueeze		E(a) Diametral Clearance	G-Groove Width			R Groove Radius	Max Eccen- tricity(b)
	Nominal	Actual		Actual	%		No Back-up Ring(G)	One Back-up Ring(G ₁)	Two Back-up Ring(G ₂)		
006 through 012	1/16	.070 ±.003	.050	.015	22	.002	.093	.138	.205	.005	.002
			to .052	to .023	32	to .005	to .098	to .143	to .210	to .015	
014 through 116	3/32	.103 ±.003	.081	.017	17	.002	.140	.171	.238	.005	.002
			to .083	to .025	24	to .005	to .145	to .176	to .243	to .015	
201 through 222	1/8	.139 ±.004	.111	.022	16	.003	.187	.208	.275	.010	.003
			to .113	to .032	23	to .006	to .192	to .213	to .280	to .025	
309 through 349	3/16	.210 ±.005	.170	.032	15	.003	.281	.311	.410	.020	.004
			to .173	to .045	21	to .006	to .286	to .316	to .415	to .035	
425 through 460	1/4	.275 ±.006	.226	.040	15	.004	.375	.408	.538	.020	.005
			to .229	to .055	20	to .007	to .380	to .413	to .543	to .035	

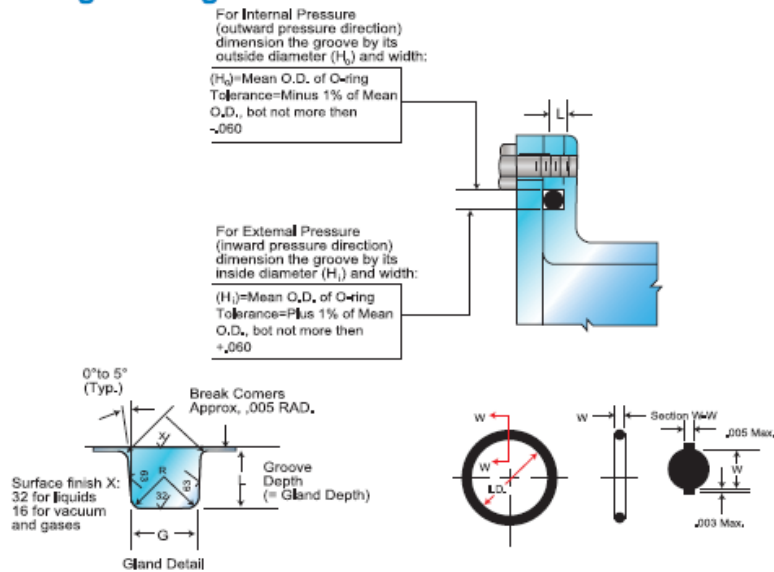
O-Ring Design Reference

- (a) Clearance (extrusion gap) must be held to a minimum consistent with design requirements for temperature range variation.
 (b) Total indicator reading between groove and adjacent bearing surface.
 (c) Reduce maximum diametral clearance 50% when using silicone or fluorosilicone O-rings.
 (d) For ease of assembly, when Back-up Ring are used, gland depth may be increased up to 5%.



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Static O-ring Sealing- Face Seal Glands



Design- For O-Ring Face Seal Glands

These dimensions are intended primarily for face type O-ring seals and low temperature applications

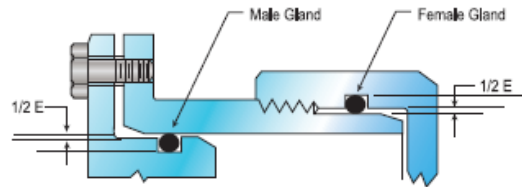
O-Ring Size AS568A-	W Cross-Section		L Gland Depth	Spueeze		G-Groove Width		R Groove Radius
	Nominal	Actual		Actual	%	Liquids	Vacuum and Gases	
004 through 050	1/16	.070 ± .003	.050 to .054	.013 to .023	19 to 32	.101 to .107	.084 to .089	.005 to .015
102 through 178	3/32	.103 ± .003	.074 to .080	.020 to .032	20 to 30	.136 to .142	.120 to .125	.005 to .015
201 through 284	1/8	.139 ± .004	.101 to .107	.028 to .042	20 to 30	.177 to .187	.158 to .164	.010 to .025
309 through 395	3/16	.210 ± .005	.152 to .162	.043 to .063	21 to 30	.270 to .290	.239 to .244	.020 to .035
425 through 475	1/4	.275 ± .006	.201 to .211	.058 to .080	21 to 29	.342 to .362	.309 to .314	.020 to .035
special	3/8	.375 ± .007	.276 to .286	.082 to .108	22 to 28	.475 to .485	.419 to .424	.030 to .045
special	1/2	.500 ± .008	.370 to .380	.112 to .138	22 to 27	.638 to .645	.560 to .565	.030 to .040

O-Ring Design Reference



O-Ring Design Reference

Static O-ring Sealing- Static Vacuum Seal Glands



Design- For Static Vacuum Seal Glands

O-Ring Size AS568A-	W Gross-Section		L Gland Depth	E Spueeze		Diametral Clearance	G Groove Width	R Groove Radius	Max* Eccen- tricity(b)
	Nominal	Actual		Actual	%				
004 through 050	1/16	.070 ±.003	.050 to .052	.015 to .023	22 to 32	.002 to .005	.093 to .098	.005 to .015	.002
102 through 178	3/32	.103 ±.003	.081 to .083	.017 to .025	17 to 24	.002 to .005	.140 to .145	.005 to .015	.002
201 through 284	1/8	.139 ±.004	.111 to .113	.022 to .032	16 to 23	.003 to .006	.187 to .192	.010 to .025	.003
309 through 395	3/16	.210 ±.005	.170 to .173	.032 to .045	15 to 21	.003 to .006	.281 to .286	.020 to .035	.004
425 through 475	1/4	.275 ±.006	.226 to .229	.040 to .055	15 to 20	.004 to .007	.375 to .380	.020 to .035	.005

*Total indicator reading between groove and adjacent bearing surface.