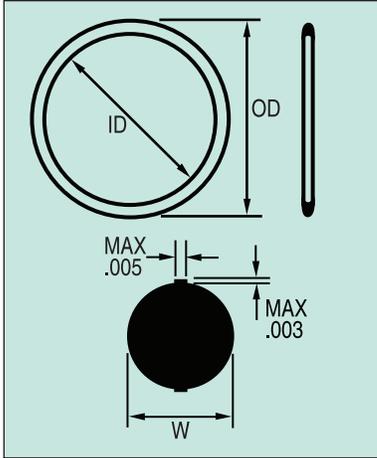


How to size your "O"-Rings

If you don't know the size or number of the "O"-Ring, you will need to determine the I.D. and width (see illustration below); or you may enclose a sample of the size you need with your quote request or order.



Elastomer Characteristics

the largest stock of FDA compliant "O"-Rings in North America ready to serve your requirements whether your needs are small or large. You will find our quality "O"-Rings have the mechanical properties you are seeking, plus the most demanding quality criteria.

Buna-N compound No. 1107 material will handle most food, dairy, and sanitary services. It is the backbone of the food and edibles industries, has excellent resistance to compression set, tear and abrasion. It has good acid and mild alkali resistance and is good for vegetable oil service. Rated at -40° to 225°F.

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"O"-Ring sizes are the same as those established in AS568A, which includes more available sizes than several of the military specifications. These sizes and tolerances were published by SAE and have been approved by the Air Standards Committee (membership by U.S.A., Australia, Canada, New Zealand, and the United Kingdom) July 1974 and are illustrated in the following pages.

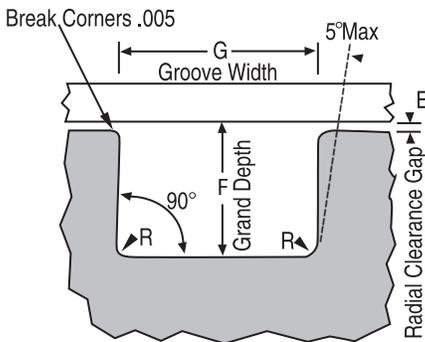
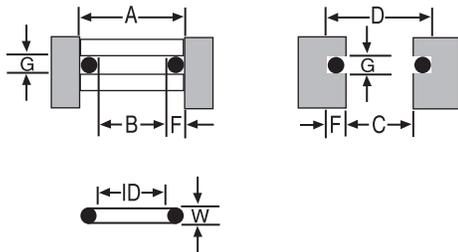


Groove Finish

Straight-sided grooves are best to prevent extrusion or nibbling, but 5° sloping sides are easier to machine and are suitable for pressures up to 1500 psi. Finish sides to 32 RMS with no burrs, nicks, or scratches. Locate in a shaft or rod, if possible, for easier machining and installation.

The rubbing surfaces should be 8 to 16 RMS without longitudinal or circumferential scratches. Best surfaces are honed, burnished, or hard chromeplate. Soft or stringy metals such as aluminum, brass, bronze, monel, or free machining stainless steel should not be used for moving seals. A 63RMS finish may be used for static glands.

Finishes below 5 RMS wipe too clean for good moving seal life. Steel or cast iron cylinder bores are preferred. They should be thick enough not to expand or breathe with pressure, otherwise the radial clearance gap may expand and contract with pressure fluctuations causing nibbling of the ring. Pistons should be softer than cylinder materials to avoid scratching.



(E) Maximum Radial Clearance Gap to Prevent Extrusion

Maximum Pressure PSI	"O"-Ring Hardness (Shore A)				
	50	60	70	80	90
100	.008"	.009"	.010"	.013"	.016"
250	.005"	.008"	.009"	.012"	.014"
500	.003"	.005"	.008"	.010"	.012"
1,000	.001"	.003"	.005"	.008"	.010"
1,500	.000"	.001"	.003"	.005"	.008"
2,000		.000"	.002"	.004"	.005"
3,000			.000"	.002"	.003"
4,000				.000"	.001"
5,000					.000"

Clearances apply to dynamic "O"-Rings with no backup washers for .139 in. (3.53mm) "O"-Ring cross-sections and up. Smaller cross-sections do not give effective moving seal life, are less resistant to extrusion, and may be critical in sealing high frequency dynamic motion.

Static Tolerances

SIZE No.	A ±.000	B ±.000	C ±.000	D ±.000
001-012	+0.001	-.001	-.001	+0.001
013-050	+0.002	-.002	-.002	+0.002
102-178	+0.003	-.003	-.003	+0.003
201-284	+0.004	-.004	-.003	+0.003
309-395	+0.005	-.005	-.003	+0.003
425-475	+0.006	-.006	-.003	+0.003

Dynamic Tolerances

SIZE No.	A ±.000	B ±.000	C ±.000	D ±.000
001-012	+0.001	-.001	-.001	+0.001
012-116	+0.003	-.003	-.003	+0.003
201-222	+0.004	-.004	-.004	+0.004
309-349	+0.005	-.005	-.005	+0.005
425-460	+0.006	-.006	-.006	+0.006

(G) Groove Dimensions

+0.005
-.000

Commercial Applications

"O"-Ring Cross-Section	ROLLING SEALS			NON-ROLLING SEALS *		
	No Backup Washer	One Backup Washer	Two Backup Washer	No Backup Washer	One Backup Washer	Two Backup Washer
.070	.093	.149	.207	.083	.138	.205
.103	.140	.183	.245	.120	.171	.238
.139	.185	.225	.304	.160	.208	.275
.210	.285	.334	.474	.235	.311	.410
.275	.375	.440	.579	.310	.408	.538

* These groove widths are for compounds that free swell less than 15%. Suitable extra allowances should be made for higher swell.

	BUNA-N (1107)
Specific Gravity	1.38
Tensile Strength, psi	2010
Elongation, %	405
300% Modulus, psi	1430
Hardness, Shore A, pts.	70
Compression Set, % (Method B, 22 hrs. @ 100°C)	21.6

These materials meet the criteria of the FDA, Title 21, Paragraph 177.2600, as a direct contact material with food and pharmaceutical products.

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146	$2 \frac{5}{8}$	X	$2 \frac{13}{16}$	X	$3 \frac{3}{32}$	2.612	.020	66.34	0.51
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