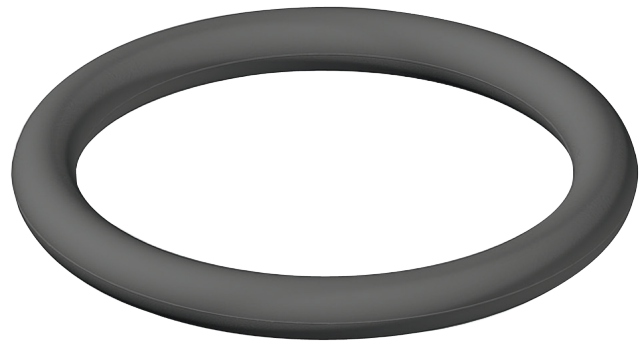
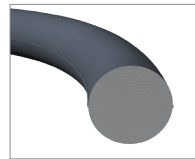


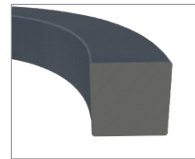
Materials	Temp. Range		
Nitrile	-40°C	to	120°C
Low Temp. Nitrile	-54°C	to	116°C
Hydrogenated Nitrile	-40°C	to	160°C
Viton™/Fluorocarbon	-26°C	to	204°C
PTFE	-268°C	to	232°C
Aflas® FEPM	-9°C	to	232°C
Neoprene	-40°C	to	121°C
EPDM	-54°C	to	150°C
Perfluoroelastomer	-15°C	to	310°C
Silicone	-65°C	to	232°C
Fluorosilicone	-56°C	to	204°C



Material information is not intended for design purposes. Please consult us when designing applications.



O-Ring



Square Cut Ring



Quad Ring

Product Description

The O-ring is the most widely used seal in history due to its simplicity, low cost, ease of installation, and small space requirements. O-rings are designed for both static and dynamic applications. A properly designed O-ring groove allows the O-ring to be squeezed diametrically out-of-round even before the application of pressure. The O-ring seals by distortion of its resilient elastic compound to fill the leakage path. Quad rings have the same diameters and cross sections as an O-ring, only the profile is different. Square cut rings have the same ID as an O-ring, but have different cross sections. See page 4 for actual square ring cross sections.

Part Numbers:



O-Rings

- N70 - Nitrile
- N90 - Nitrile
- LTN - Low Temp. Nitrile
- HS7 - Hydrogenated Nitrile
- HS8 - Hydrogenated Nitrile
- HS9 - Hydrogenated Nitrile
- V75 - Viton™
- V90 - Viton™
- LTV - Low Temp. Viton™

O-Rings

- FK7 - Fluorocarbon
- FK9 - Fluorocarbon
- T - PTFE
- A80 - Aflas® FEPM
- NEO - Neoprene
- E70 - EPDM
- E80 - EPDM
- PF7 - Perfluoroelastomer
- PF9 - Perfluoroelastomer

O-Rings

- KAL - Kalrez®
- S70 - Silicone
- FS7 - Fluorosilicone
- U90 - Urethane

Square Cut Rings

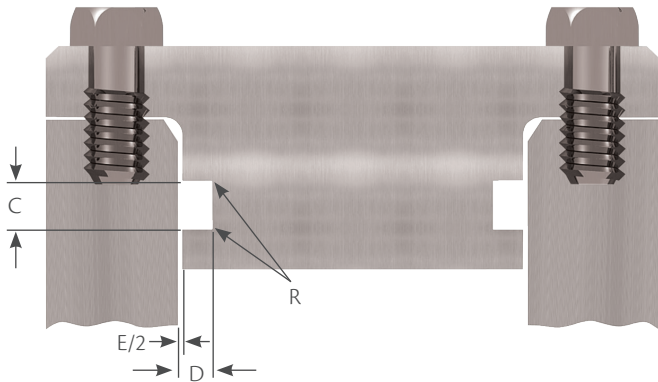
- TS7 - Nitrile
- TS9 - Nitrile

Quad Rings

- QN7 - Nitrile
- QN9 - Nitrile
- QV7 - Viton™
- QE7 - EPDM

Example: HS8 224 - Hydrogenated Nitrile, 80 Durometer, 1 - 3/4" Nom. I.D., 1/8" Nom. C/S

Static Radial Applications

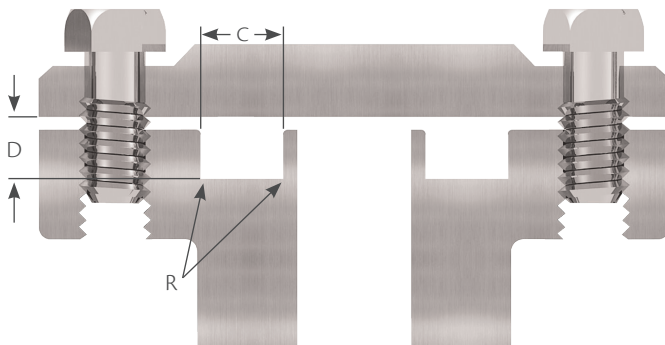


Information is based on ISO 3601

* Pneumatic applications typically do not use a Back-up ring.

O-Ring C/S	D		E	C			R	
	Groove Depth	Squeeze		Groove Width +0.010/-0.000				
		Inches	%	No Back-Up Ring	One Back-Up Ring	Two Back-Up Rings	Groove Radius	
0.070	0.049 - 0.057	0.010 - 0.025	14 - 35	0.004	0.110	0.165	0.220	0.008 - 0.016
0.103	0.075 - 0.087	0.013 - 0.031	13 - 30	0.005	0.150	0.205	0.260	0.008 - 0.016
0.139	0.101 - 0.117	0.018 - 0.042	13 - 30	0.006	0.197	0.252	0.307	0.016 - 0.031
0.210	0.156 - 0.180	0.025 - 0.059	12 - 28	0.006	0.283	0.354	0.429	0.016 - 0.031
0.275	0.212 - 0.242	0.028 - 0.069	10 - 25	0.007	0.374	0.484	0.594	0.031 - 0.047

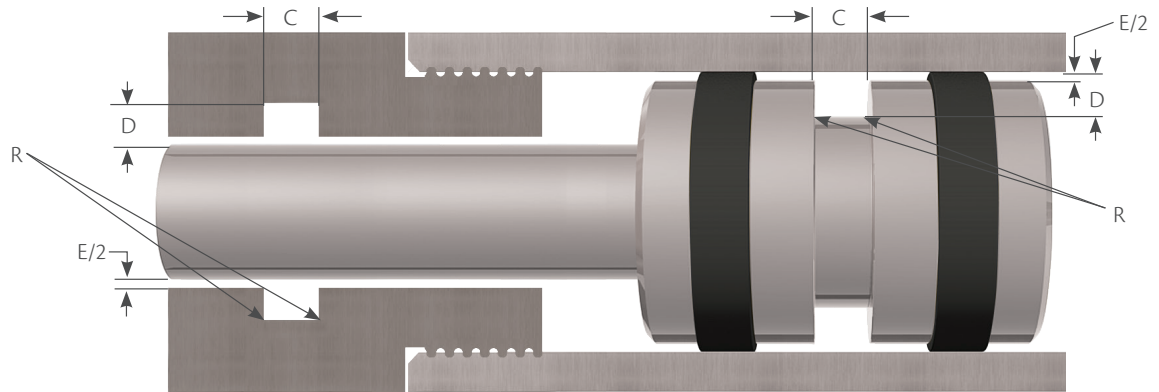
Static Axial (Face) Applications



Information is based on ISO 3601

O-Ring C/S	D		C		R
	Groove Depth +0.004/-0.000	Squeeze %	Groove Width +0.008/-0.000		
			Hydraulic	Pneumatic	Groove Radius
0.070	0.051	21 - 36	0.126	0.114	0.008 - 0.016
0.103	0.079	19 - 30	0.157	0.142	0.008 - 0.016
0.139	0.106	17 - 26	0.209	0.189	0.016 - 0.031
0.210	0.165	15 - 23	0.299	0.276	0.016 - 0.031
0.275	0.224	13 - 20	0.354	0.335	0.031 - 0.047

Reciprocating Applications



Information is based on ISO 3601

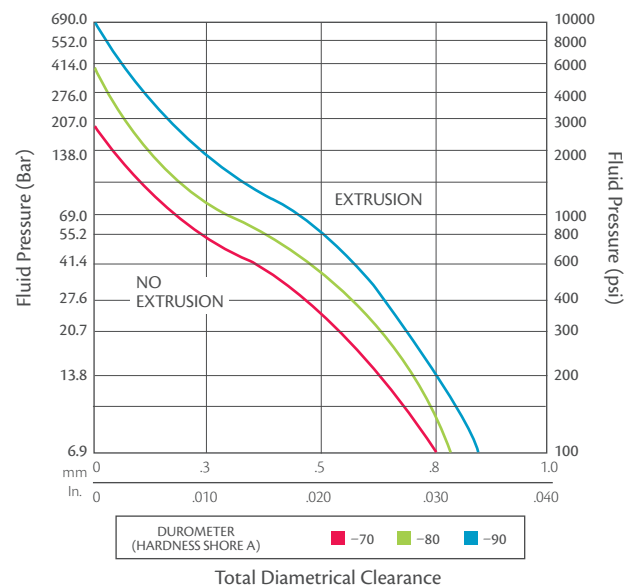
* Pneumatic applications typically do not use a Back-up ring.

O-Ring C/S	D		Squeeze				E	C			R	
	Groove depth		Hydraulic		Pneumatic			Diametrical Clearance Max.	No Back-Up Ring	One Back-Up Ring		Two Back-Up Rings
	Hydraulic	Pneumatic	Inches	%	Inches	%						
0.070	0.054 - 0.058	0.056 - 0.060	0.009 -0.019	13 - 27	0.007 -0.017	10 - 24	0.004	0.110	0.165	0.220	0.008 -0.016	
0.103	0.081 - 0.088	0.083 - 0.092	0.012 -0.025	12 - 24	0.008 -0.023	8 - 22	0.005	0.150	0.205	0.260	0.008 -0.016	
0.139	0.112 - 0.120	0.115 - 0.125	0.015 -0.031	11 - 22	0.010 -0.028	7 - 20	0.006	0.197	0.252	0.307	0.016 -0.031	
0.210	0.173 - 0.182	0.177 - 0.190	0.023 -0.042	11 - 20	0.015 -0.038	7 - 18	0.006	0.283	0.354	0.429	0.016 -0.031	
0.275	0.229 - 0.244	0.234 - 0.253	0.025 -0.052	9 - 19	0.017 -0.047	6 - 17	0.007	0.374	0.484	0.594	0.031 -0.047	

Limits for Extrusion

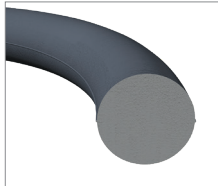
There are different methods to counter O-ring extrusion. One of these methods is to simply increase the durometer rating of the O-ring. However, as the durometer is increased, the O-ring can become less malleable. Another option would be to use anti-extrusion devices. These are thin rings made of hard plastic materials such as PTFE, nylon, and PEEK. Once in place these rings will provide essentially zero clearance.

Reduce the clearance shown by 60% when using silicone or fluoro-silicone elastomers.

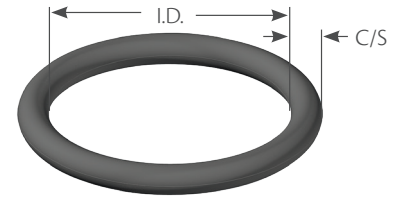


O-Rings

IMPERIAL SEALS



Square Cut Rings	Actual C/S
000 Series	0.066
100 Series	0.099
200 Series	0.134
300 Series	0.205
400 Series	0.266



Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.	C/S		
001	1/32	3/32	1/32	0.029	± 0.004	0.040	± 0.003
002	3/64	9/64	3/64	0.042	± 0.004	0.050	± 0.003
003	1/16	3/16	1/16	0.056	± 0.004	0.060	± 0.003
004	5/64	13/64	5/64	0.070	± 0.005	0.070	± 0.003
005	3/32	7/32	3/32	0.101	± 0.005	0.070	± 0.003
006	1/8	1/4	1/8	0.114	± 0.005	0.070	± 0.003
007	5/32	9/32	5/32	0.145	± 0.005	0.070	± 0.003
008	3/16	5/16	3/16	0.176	± 0.005	0.070	± 0.003
009	7/32	11/32	7/32	0.208	± 0.005	0.070	± 0.003
010	1/4	3/8	1/4	0.239	± 0.005	0.070	± 0.003
011	5/16	7/16	5/16	0.301	± 0.005	0.070	± 0.003
012	3/8	1/2	3/8	0.364	± 0.005	0.070	± 0.003
013	7/16	9/16	7/16	0.426	± 0.005	0.070	± 0.003
014	1/2	5/8	1/2	0.489	± 0.005	0.070	± 0.003
015	9/16	11/16	9/16	0.551	± 0.007	0.070	± 0.003
016	5/8	3/4	5/8	0.614	± 0.009	0.070	± 0.003
017	11/16	13/16	11/16	0.676	± 0.009	0.070	± 0.003
018	3/4	7/8	3/4	0.739	± 0.009	0.070	± 0.003
019	13/16	15/16	13/16	0.801	± 0.009	0.070	± 0.003
020	7/8	1	7/8	0.864	± 0.009	0.070	± 0.003
021	15/16	1 - 1/16	15/16	0.926	± 0.009	0.070	± 0.003
022	1	1 - 1/8	1	0.989	± 0.010	0.070	± 0.003
023	1 - 1/16	1 - 3/16	1 - 1/16	1.051	± 0.010	0.070	± 0.003
024	1 - 1/8	1 - 1/4	1 - 1/8	1.114	± 0.010	0.070	± 0.003
025	1 - 3/16	1 - 5/16	1 - 3/16	1.176	± 0.011	0.070	± 0.003
026	1 - 1/4	1 - 3/8	1 - 1/4	1.239	± 0.011	0.070	± 0.003
027	1 - 5/16	1 - 7/16	1 - 5/16	1.301	± 0.011	0.070	± 0.003
028	1 - 3/8	1 - 1/2	1 - 3/8	1.364	± 0.013	0.070	± 0.003
029	1 - 1/2	1 - 5/8	1 - 1/2	1.489	± 0.013	0.070	± 0.003
030	1 - 5/8	1 - 3/4	1 - 5/8	1.614	± 0.013	0.070	± 0.003
031	1 - 3/4	1 - 7/8	1 - 3/4	1.739	± 0.015	0.070	± 0.003
032	1 - 7/8	2	1 - 7/8	1.864	± 0.015	0.070	± 0.003
033	2	2 - 1/8	2	1.989	± 0.018	0.070	± 0.003
034	2 - 1/8	2 - 1/4	2 - 1/8	2.114	± 0.018	0.070	± 0.003
035	2 - 1/4	2 - 3/8	2 - 1/4	2.239	± 0.018	0.070	± 0.003
036	2 - 3/8	2 - 1/2	2 - 3/8	2.364	± 0.018	0.070	± 0.003
037	2 - 1/2	2 - 5/8	2 - 1/2	2.489	± 0.018	0.070	± 0.003
038	2 - 5/8	2 - 3/4	2 - 5/8	2.614	± 0.020	0.070	± 0.003
039	2 - 3/4	2 - 7/8	2 - 3/4	2.739	± 0.020	0.070	± 0.003
040	2 - 7/8	3	2 - 7/8	2.864	± 0.020	0.070	± 0.003
041	3	3 - 1/8	3	2.989	± 0.024	0.070	± 0.003
042	3 - 1/4	3 - 3/8	3 - 1/4	3.239	± 0.024	0.070	± 0.003
043	3 - 1/2	3 - 5/8	3 - 1/2	3.489	± 0.024	0.070	± 0.003

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.	C/S		
044	3 - 3/4	3 - 7/8	1/16	3.739	± 0.027	0.070	± 0.003
045	4	4 - 1/8	1/16	3.989	± 0.027	0.070	± 0.003
046	4 - 1/4	4 - 3/8	1/16	4.239	± 0.030	0.070	± 0.003
047	4 - 1/2	4 - 5/8	1/16	4.489	± 0.030	0.070	± 0.003
048	4 - 3/4	4 - 7/8	1/16	4.739	± 0.030	0.070	± 0.003
049	5	5 - 1/8	1/16	4.989	± 0.037	0.070	± 0.003
050	5 - 1/4	5 - 3/8	1/16	5.239	± 0.037	0.070	± 0.003
102	1/16	1/4	3/32	0.049	± 0.005	0.103	± 0.003
103	3/32	9/32	3/32	0.081	± 0.005	0.103	± 0.003
104	1/8	5/16	3/32	0.112	± 0.005	0.103	± 0.003
105	5/32	11/32	3/32	0.143	± 0.005	0.103	± 0.003
106	3/16	3/8	3/32	0.174	± 0.005	0.103	± 0.003
107	7/32	13/32	3/32	0.206	± 0.005	0.103	± 0.003
108	1/4	7/16	3/32	0.237	± 0.005	0.103	± 0.003
109	5/16	1/2	3/32	0.299	± 0.005	0.103	± 0.003
110	3/8	9/16	3/32	0.362	± 0.005	0.103	± 0.003
111	7/16	5/8	3/32	0.424	± 0.005	0.103	± 0.003
112	1/2	11/16	3/32	0.487	± 0.005	0.103	± 0.003
113	9/16	3/4	3/32	0.549	± 0.007	0.103	± 0.003
114	5/8	13/16	3/32	0.612	± 0.009	0.103	± 0.003
115	11/16	7/8	3/32	0.674	± 0.009	0.103	± 0.003
116	3/4	15/16	3/32	0.737	± 0.009	0.103	± 0.003
117	13/16	1	3/32	0.799	± 0.010	0.103	± 0.003
118	7/8	1 - 1/16	3/32	0.862	± 0.010	0.103	± 0.003
119	15/16	1 - 1/8	3/32	0.924	± 0.010	0.103	± 0.003
120	1	1 - 3/16	3/32	0.987	± 0.010	0.103	± 0.003
121	1 - 1/16	1 - 1/4	3/32	1.049	± 0.010	0.103	± 0.003
122	1 - 1/8	1 - 5/16	3/32	1.112	± 0.010	0.103	± 0.003
123	1 - 3/16	1 - 3/8	3/32	1.174	± 0.012	0.103	± 0.003
124	1 - 1/4	1 - 7/16	3/32	1.237	± 0.012	0.103	± 0.003
125	1 - 5/16	1 - 1/2	3/32	1.299	± 0.012	0.103	± 0.003
126	1 - 3/8	1 - 9/16	3/32	1.362	± 0.012	0.103	± 0.003
127	1 - 7/16	1 - 5/8	3/32	1.424	± 0.012	0.103	± 0.003
128	1 - 1/2	1 - 11/16	3/32	1.487	± 0.012	0.103	± 0.003
129	1 - 9/16	1 - 3/4	3/32	1.549	± 0.015	0.103	± 0.003
130	1 - 5/8	1 - 13/16	3/32	1.612	± 0.015	0.103	± 0.003
131	1 - 11/16	1 - 7/8	3/32	1.674	± 0.015	0.103	± 0.003
132	1 - 3/4	1 - 15/16	3/32	1.737	± 0.015	0.103	± 0.003
133	1 - 13/16	2	3/32	1.799	± 0.015	0.103	± 0.003
134	1 - 7/8	2 - 1/16	3/32	1.862	± 0.015	0.103	± 0.003
135	1 - 15/16	2 - 1/8	3/32	1.925	± 0.017	0.103	± 0.003
136	2	2 - 3/16	3/32	1.987	± 0.017	0.103	± 0.003

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.	C/S	I.D.	C/S
137	2 - 1/16	2 - 1/4	3/32	2.050	± 0.017	0.103	± 0.003
138	2 - 1/8	2 - 5/16	3/32	2.112	± 0.017	0.103	± 0.003
139	2 - 3/16	2 - 3/8	3/32	2.175	± 0.017	0.103	± 0.003
140	2 - 1/4	2 - 7/16	3/32	2.237	± 0.017	0.103	± 0.003
141	2 - 5/16	2 - 1/2	3/32	2.300	± 0.020	0.103	± 0.003
142	2 - 3/8	2 - 9/16	3/32	2.362	± 0.020	0.103	± 0.003
143	2 - 7/16	2 - 5/8	3/32	2.425	± 0.020	0.103	± 0.003
144	2 - 1/2	2 - 11/16	3/32	2.487	± 0.020	0.103	± 0.003
145	2 - 9/16	2 - 3/4	3/32	2.550	± 0.020	0.103	± 0.003
146	2 - 5/8	2 - 13/16	3/32	2.612	± 0.020	0.103	± 0.003
147	2 - 11/16	2 - 7/8	3/32	2.675	± 0.022	0.103	± 0.003
148	2 - 3/4	2 - 15/16	3/32	2.737	± 0.022	0.103	± 0.003
149	2 - 13/16	3	3/32	2.800	± 0.022	0.103	± 0.003
150	2 - 7/8	3 - 1/16	3/32	2.862	± 0.022	0.103	± 0.003
151	3	3 - 3/16	3/32	2.987	± 0.024	0.103	± 0.003
152	3 - 1/4	3 - 7/16	3/32	3.237	± 0.024	0.103	± 0.003
153	3 - 1/2	3 - 11/16	3/32	3.487	± 0.024	0.103	± 0.003
154	3 - 3/4	2 - 15/16	3/32	3.737	± 0.028	0.103	± 0.003
155	4	4 - 3/16	3/32	3.987	± 0.028	0.103	± 0.003
156	4 - 1/4	4 - 7/16	3/32	4.237	± 0.030	0.103	± 0.003
157	4 - 1/2	4 - 11/16	3/32	4.487	± 0.030	0.103	± 0.003
158	4 - 3/4	4 - 15/16	3/32	4.737	± 0.030	0.103	± 0.003
159	5	5 - 3/16	3/32	4.987	± 0.035	0.103	± 0.003
160	5 - 1/4	5 - 7/16	3/32	5.237	± 0.035	0.103	± 0.003
161	5 - 1/2	5 - 11/16	3/32	5.487	± 0.035	0.103	± 0.003
162	5 - 3/4	5 - 15/16	3/32	5.737	± 0.035	0.103	± 0.003
163	6	6 - 3/16	3/32	5.987	± 0.035	0.103	± 0.003
164	6 - 1/4	6 - 7/16	3/32	6.237	± 0.040	0.103	± 0.003
165	6 - 1/2	6 - 11/16	3/32	6.487	± 0.040	0.103	± 0.003
166	6 - 3/4	6 - 15/16	3/32	6.737	± 0.040	0.103	± 0.003
167	7	7 - 3/16	3/32	6.987	± 0.040	0.103	± 0.003
168	7 - 1/4	7 - 7/16	3/32	7.237	± 0.045	0.103	± 0.003
169	7 - 1/2	7 - 11/16	3/32	7.487	± 0.045	0.103	± 0.003
170	7 - 3/4	7 - 15/16	3/32	7.737	± 0.045	0.103	± 0.003
171	8	8 - 3/16	3/32	7.987	± 0.045	0.103	± 0.003
172	8 - 1/4	8 - 7/16	3/32	8.237	± 0.050	0.103	± 0.003
173	8 - 1/2	8 - 11/16	3/32	8.487	± 0.050	0.103	± 0.003
174	8 - 3/4	8 - 15/16	3/32	8.737	± 0.050	0.103	± 0.003
175	9	9 - 3/16	3/32	8.987	± 0.050	0.103	± 0.003
176	9 - 1/4	9 - 7/16	3/32	9.237	± 0.055	0.103	± 0.003
177	9 - 1/2	9 - 11/16	3/32	9.487	± 0.055	0.103	± 0.003
178	9 - 3/4	9 - 15/16	3/32	9.737	± 0.055	0.103	± 0.003
201	3/16	7/16	1/8	0.171	± 0.005	0.139	± 0.004
202	1/4	1/2	1/8	0.234	± 0.005	0.139	± 0.004
203	5/16	9/16	1/8	0.296	± 0.005	0.139	± 0.004
204	3/8	5/8	1/8	0.359	± 0.005	0.139	± 0.004
205	7/16	11/16	1/8	0.421	± 0.005	0.139	± 0.004
206	1/2	3/4	1/8	0.484	± 0.005	0.139	± 0.004
207	9/16	13/16	1/8	0.546	± 0.007	0.139	± 0.004

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.	C/S	I.D.	C/S
208	5/8	7/8	1/8	0.609	± 0.009	0.139	± 0.004
209	11/16	15/16	1/8	0.671	± 0.009	0.139	± 0.004
210	3/4	1	1/8	0.734	± 0.010	0.139	± 0.004
211	13/16	1 - 1/16	1/8	0.796	± 0.010	0.139	± 0.004
212	7/8	1 - 1/8	1/8	0.859	± 0.010	0.139	± 0.004
213	15/16	1 - 3/16	1/8	0.921	± 0.010	0.139	± 0.004
214	1	1 - 1/4	1/8	0.984	± 0.010	0.139	± 0.004
215	1 - 1/16	1 - 5/16	1/8	1.046	± 0.010	0.139	± 0.004
216	1 - 1/8	1 - 3/8	1/8	1.109	± 0.012	0.139	± 0.004
217	1 - 3/16	1 - 7/16	1/8	1.171	± 0.012	0.139	± 0.004
218	1 - 1/4	1 - 1/2	1/8	1.234	± 0.012	0.139	± 0.004
219	1 - 5/16	1 - 9/16	1/8	1.296	± 0.012	0.139	± 0.004
220	1 - 3/8	1 - 5/8	1/8	1.359	± 0.012	0.139	± 0.004
221	1 - 7/16	1 - 11/16	1/8	1.421	± 0.012	0.139	± 0.004
222	1 - 1/2	1 - 3/4	1/8	1.484	± 0.015	0.139	± 0.004
223	1 - 5/8	1 - 7/8	1/8	1.609	± 0.015	0.139	± 0.004
224	1 - 3/4	2	1/8	1.734	± 0.015	0.139	± 0.004
225	1 - 7/8	2 - 1/8	1/8	1.859	± 0.018	0.139	± 0.004
226	2	2 - 1/4	1/8	1.984	± 0.018	0.139	± 0.004
227	2 - 1/8	2 - 3/8	1/8	2.109	± 0.018	0.139	± 0.004
228	2 - 1/4	2 - 1/2	1/8	2.234	± 0.020	0.139	± 0.004
229	2 - 3/8	2 - 5/8	1/8	2.359	± 0.020	0.139	± 0.004
230	2 - 1/2	2 - 3/4	1/8	2.484	± 0.020	0.139	± 0.004
231	2 - 5/8	2 - 7/8	1/8	2.609	± 0.020	0.139	± 0.004
232	2 - 3/4	3	1/8	2.734	± 0.024	0.139	± 0.004
233	2 - 7/8	3 - 1/8	1/8	2.859	± 0.024	0.139	± 0.004
234	3	3 - 1/4	1/8	2.984	± 0.024	0.139	± 0.004
235	3 - 1/8	3 - 3/8	1/8	3.109	± 0.024	0.139	± 0.004
236	3 - 1/4	3 - 1/2	1/8	3.234	± 0.024	0.139	± 0.004
237	3 - 3/8	3 - 5/8	1/8	3.359	± 0.024	0.139	± 0.004
238	3 - 1/2	3 - 3/4	1/8	3.484	± 0.024	0.139	± 0.004
239	3 - 5/8	3 - 7/8	1/8	3.609	± 0.028	0.139	± 0.004
240	3 - 3/4	4	1/8	3.734	± 0.028	0.139	± 0.004
241	3 - 7/8	4 - 1/8	1/8	3.859	± 0.028	0.139	± 0.004
242	4	4 - 1/4	1/8	3.984	± 0.028	0.139	± 0.004
243	4 - 1/8	4 - 3/8	1/8	4.109	± 0.028	0.139	± 0.004
244	4 - 1/4	4 - 1/2	1/8	4.234	± 0.030	0.139	± 0.004
245	4 - 3/8	4 - 5/8	1/8	4.359	± 0.030	0.139	± 0.004
246	4 - 1/2	4 - 3/4	1/8	4.484	± 0.030	0.139	± 0.004
247	4 - 5/8	4 - 7/8	1/8	4.609	± 0.030	0.139	± 0.004
248	4 - 3/4	5	1/8	4.734	± 0.030	0.139	± 0.004
249	4 - 7/8	5 - 1/8	1/8	4.859	± 0.035	0.139	± 0.004
250	5	5 - 1/4	1/8	4.984	± 0.035	0.139	± 0.004
251	5 - 1/8	5 - 3/8	1/8	5.109	± 0.035	0.139	± 0.004
252	5 - 1/4	5 - 1/2	1/8	5.234	± 0.035	0.139	± 0.004
253	5 - 3/8	5 - 5/8	1/8	5.359	± 0.035	0.139	± 0.004
254	5 - 1/2	5 - 3/4	1/8	5.484	± 0.035	0.139	± 0.004
255	5 - 5/8	5 - 7/8	1/8	5.609	± 0.035	0.139	± 0.004
256	5 - 3/4	6	1/8	5.734	± 0.035	0.139	± 0.004
257	5 - 7/8	6 - 1/8	1/8	5.859	± 0.035	0.139	± 0.004

O-Rings

IMPERIAL SEALS

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.	C/S	I.D.	C/S
258	6	6 - 1/4	1/8	5.984	± 0.035	0.139	± 0.004
259	6 - 1/4	6 - 1/2	1/8	6.234	± 0.040	0.139	± 0.004
260	6 - 1/2	6 - 3/4	1/8	6.484	± 0.040	0.139	± 0.004
261	6 - 3/4	7	1/8	6.734	± 0.040	0.139	± 0.004
262	7	7 - 1/4	1/8	6.984	± 0.040	0.139	± 0.004
263	7 - 1/4	7 - 1/2	1/8	7.234	± 0.045	0.139	± 0.004
264	7 - 1/2	7 - 3/4	1/8	7.484	± 0.045	0.139	± 0.004
265	7 - 3/4	8	1/8	7.734	± 0.045	0.139	± 0.004
266	8	8 - 1/4	1/8	7.984	± 0.045	0.139	± 0.004
267	8 - 1/4	8 - 1/2	1/8	8.234	± 0.050	0.139	± 0.004
268	8 - 1/2	8 - 3/4	1/8	8.484	± 0.050	0.139	± 0.004
269	8 - 3/4	9	1/8	8.734	± 0.050	0.139	± 0.004
270	9	9 - 1/4	1/8	8.984	± 0.050	0.139	± 0.004
271	9 - 1/4	9 - 1/2	1/8	9.234	± 0.055	0.139	± 0.004
272	9 - 1/2	9 - 3/4	1/8	9.484	± 0.055	0.139	± 0.004
273	9 - 3/4	10	1/8	9.734	± 0.055	0.139	± 0.004
274	10	10 - 1/4	1/8	9.984	± 0.055	0.139	± 0.004
275	10 - 1/2	10 - 3/4	1/8	10.484	± 0.055	0.139	± 0.004
276	11	11 - 1/4	1/8	10.984	± 0.065	0.139	± 0.004
277	11 - 1/2	11 - 3/4	1/8	11.484	± 0.065	0.139	± 0.004
278	12	12 - 1/4	1/8	11.984	± 0.065	0.139	± 0.004
279	13	13 - 1/4	1/8	12.984	± 0.065	0.139	± 0.004
280	14	14 - 1/4	1/8	13.984	± 0.065	0.139	± 0.004
281	15	15 - 1/4	1/8	14.984	± 0.065	0.139	± 0.004
282	16	16 - 1/4	1/8	15.955	± 0.075	0.139	± 0.004
283	17	17 - 1/4	1/8	16.956	± 0.080	0.139	± 0.004
284	18	18 - 1/4	1/8	17.955	± 0.085	0.139	± 0.004
309	7/16	13/16	3/16	0.412	± 0.005	0.210	± 0.005
310	1/2	7/8	3/16	0.475	± 0.005	0.210	± 0.005
311	9/16	15/16	3/16	0.537	± 0.007	0.210	± 0.005
312	5/8	1	3/16	0.600	± 0.009	0.210	± 0.005
313	11/16	1 - 1/16	3/16	0.662	± 0.009	0.210	± 0.005
314	3/4	1 - 1/8	3/16	0.725	± 0.010	0.210	± 0.005
315	13/16	1 - 3/16	3/16	0.787	± 0.010	0.210	± 0.005
316	7/8	1 - 1/4	3/16	0.850	± 0.010	0.210	± 0.005
317	15/16	1 - 5/16	3/16	0.912	± 0.010	0.210	± 0.005
318	1	1 - 3/8	3/16	0.975	± 0.010	0.210	± 0.005
319	1 - 1/16	1 - 7/16	3/16	1.037	± 0.010	0.210	± 0.005
320	1 - 1/8	1 - 1/2	3/16	1.100	± 0.012	0.210	± 0.005
321	1 - 3/16	1 - 9/16	3/16	1.162	± 0.012	0.210	± 0.005
322	1 - 1/4	1 - 5/8	3/16	1.225	± 0.012	0.210	± 0.005
323	1 - 5/16	1 - 11/16	3/16	1.287	± 0.012	0.210	± 0.005
324	1 - 3/8	1 - 3/4	3/16	1.350	± 0.012	0.210	± 0.005
325	1 - 1/2	1 - 7/8	3/16	1.475	± 0.015	0.210	± 0.005
326	1 - 5/8	2	3/16	1.600	± 0.015	0.210	± 0.005
327	1 - 3/4	2 - 1/8	3/16	1.725	± 0.015	0.210	± 0.005
328	1 - 7/8	2 - 1/4	3/16	1.850	± 0.015	0.210	± 0.005
329	2	2 - 3/8	3/16	1.975	± 0.018	0.210	± 0.005
330	2 - 1/8	2 - 1/2	3/16	2.100	± 0.018	0.210	± 0.005

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.	C/S	I.D.	C/S
331	2 - 1/4	2 - 5/8	3/16	2.225	± 0.018	0.210	± 0.005
332	2 - 3/8	2 - 3/4	3/16	2.350	± 0.018	0.210	± 0.005
333	2 - 1/2	2 - 7/8	3/16	2.475	± 0.020	0.210	± 0.005
334	2 - 5/8	3	3/16	2.600	± 0.020	0.210	± 0.005
335	2 - 3/4	3 - 1/8	3/16	2.725	± 0.020	0.210	± 0.005
336	2 - 7/8	3 - 1/4	3/16	2.850	± 0.020	0.210	± 0.005
337	3	3 - 3/8	3/16	2.975	± 0.024	0.210	± 0.005
338	3 - 1/8	3 - 1/2	3/16	3.100	± 0.024	0.210	± 0.005
339	3 - 1/4	3 - 5/8	3/16	3.225	± 0.024	0.210	± 0.005
340	3 - 3/8	3 - 3/4	3/16	3.350	± 0.024	0.210	± 0.005
341	3 - 1/2	3 - 7/8	3/16	3.475	± 0.024	0.210	± 0.005
342	3 - 5/8	4	3/16	3.600	± 0.028	0.210	± 0.005
343	3 - 3/4	4 - 1/8	3/16	3.725	± 0.028	0.210	± 0.005
344	3 - 7/8	4 - 1/4	3/16	3.850	± 0.028	0.210	± 0.005
345	4	4 - 3/8	3/16	3.975	± 0.028	0.210	± 0.005
346	4 - 1/8	4 - 1/2	3/16	4.100	± 0.028	0.210	± 0.005
347	4 - 1/4	4 - 5/8	3/16	4.225	± 0.030	0.210	± 0.005
348	4 - 3/8	4 - 3/4	3/16	4.350	± 0.030	0.210	± 0.005
349	4 - 1/2	4 - 7/8	3/16	4.475	± 0.030	0.210	± 0.005
350	4 - 5/8	5	3/16	4.600	± 0.030	0.210	± 0.005
351	4 - 3/4	5 - 1/8	3/16	4.725	± 0.030	0.210	± 0.005
352	4 - 7/8	5 - 1/4	3/16	4.850	± 0.030	0.210	± 0.005
353	5	5 - 3/8	3/16	4.975	± 0.037	0.210	± 0.005
354	5 - 1/8	5 - 1/2	3/16	5.100	± 0.037	0.210	± 0.005
355	5 - 1/4	5 - 5/8	3/16	5.225	± 0.037	0.210	± 0.005
356	5 - 3/8	5 - 3/4	3/16	5.350	± 0.037	0.210	± 0.005
357	5 - 1/2	5 - 7/8	3/16	5.475	± 0.037	0.210	± 0.005
358	5 - 5/8	6	3/16	5.600	± 0.037	0.210	± 0.005
359	5 - 3/4	6 - 1/8	3/16	5.725	± 0.037	0.210	± 0.005
360	5 - 7/8	6 - 1/4	3/16	5.850	± 0.037	0.210	± 0.005
361	6	6 - 3/8	3/16	5.975	± 0.037	0.210	± 0.005
362	6 - 1/4	6 - 5/8	3/16	6.225	± 0.040	0.210	± 0.005
363	6 - 1/2	6 - 7/8	3/16	6.475	± 0.040	0.210	± 0.005
364	6 - 3/4	7 - 1/8	3/16	6.725	± 0.040	0.210	± 0.005
365	7	7 - 3/8	3/16	6.975	± 0.040	0.210	± 0.005
366	7 - 1/4	7 - 5/8	3/16	7.225	± 0.045	0.210	± 0.005
367	7 - 1/2	7 - 7/8	3/16	7.475	± 0.045	0.210	± 0.005
368	7 - 3/4	8 - 1/8	3/16	7.725	± 0.045	0.210	± 0.005
369	8	8 - 3/8	3/16	7.975	± 0.045	0.210	± 0.005
370	8 - 1/4	8 - 5/8	3/16	8.225	± 0.050	0.210	± 0.005
371	8 - 1/2	8 - 7/8	3/16	8.475	± 0.050	0.210	± 0.005
372	8 - 3/4	9 - 1/8	3/16	8.725	± 0.050	0.210	± 0.005
373	9	9 - 3/8	3/16	8.975	± 0.050	0.210	± 0.005
374	9 - 1/4	9 - 5/8	3/16	9.225	± 0.055	0.210	± 0.005
375	9 - 1/2	9 - 7/8	3/16	9.475	± 0.055	0.210	± 0.005
376	9 - 3/4	10 - 1/8	3/16	9.725	± 0.055	0.210	± 0.005
377	10	10 - 3/8	3/16	9.975	± 0.055	0.210	± 0.005
378	10 - 1/2	10 - 7/8	3/16	10.475	± 0.060	0.210	± 0.005
379	11	11 - 3/8	3/16	10.975	± 0.060	0.210	± 0.005
380	11 - 1/2	11 - 7/8	3/16	11.475	± 0.065	0.210	± 0.005

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.		C/S	
381	12	12 - 3/8	3/16	11.975	± 0.065	0.210	± 0.005
382	13	13 - 3/8	3/16	12.975	± 0.065	0.210	± 0.005
383	14	14 - 3/8	3/16	13.975	± 0.070	0.210	± 0.005
384	15	15 - 3/8	3/16	14.975	± 0.070	0.210	± 0.005
385	16	16 - 3/8	3/16	15.955	± 0.075	0.210	± 0.005
386	17	17 - 3/8	3/16	16.955	± 0.080	0.210	± 0.005
387	18	18 - 3/8	3/16	17.955	± 0.085	0.210	± 0.005
388	19	19 - 3/8	3/16	18.952	± 0.090	0.210	± 0.005
389	20	20 - 3/8	3/16	19.952	± 0.095	0.210	± 0.005
390	21	21 - 3/8	3/16	20.952	± 0.095	0.210	± 0.005
391	22	22 - 3/8	3/16	21.952	± 0.100	0.210	± 0.005
392	23	23 - 3/8	3/16	22.940	± 0.105	0.210	± 0.005
393	24	24 - 3/8	3/16	23.940	± 0.110	0.210	± 0.005
394	25	25 - 3/8	3/16	24.940	± 0.115	0.210	± 0.005
395	26	26 - 3/8	3/16	25.940	± 0.120	0.210	± 0.005
425	4 - 1/2	5	1/4	4.475	± 0.033	0.275	± 0.006
426	4 - 5/8	5 - 1/8	1/4	4.600	± 0.033	0.275	± 0.006
427	4 - 3/4	5 - 1/4	1/4	4.725	± 0.033	0.275	± 0.006
428	4 - 7/8	5 - 3/8	1/4	4.850	± 0.033	0.275	± 0.006
429	5	5 - 1/2	1/4	4.975	± 0.037	0.275	± 0.006
430	5 - 1/8	5 - 5/8	1/4	5.100	± 0.037	0.275	± 0.006
431	5 - 1/4	5 - 3/4	1/4	5.225	± 0.037	0.275	± 0.006
432	5 - 3/8	5 - 7/8	1/4	5.350	± 0.037	0.275	± 0.006
433	5 - 1/2	6	1/4	5.475	± 0.037	0.275	± 0.006
434	5 - 5/8	6 - 1/8	1/4	5.600	± 0.037	0.275	± 0.006
435	5 - 3/4	6 - 1/4	1/4	5.725	± 0.037	0.275	± 0.006
436	5 - 7/8	6 - 3/8	1/4	5.850	± 0.037	0.275	± 0.006
437	6	6 - 1/2	1/4	5.975	± 0.037	0.275	± 0.006
438	6 - 1/4	6 - 3/4	1/4	6.225	± 0.040	0.275	± 0.006
439	6 - 1/2	7	1/4	6.475	± 0.040	0.275	± 0.006
440	6 - 3/4	7 - 1/4	1/4	6.725	± 0.040	0.275	± 0.006
441	7	7 - 1/2	1/4	6.975	± 0.040	0.275	± 0.006
442	7 - 1/4	7 - 3/4	1/4	7.225	± 0.045	0.275	± 0.006
443	7 - 1/2	8	1/4	7.475	± 0.045	0.275	± 0.006
444	7 - 3/4	8 - 1/4	1/4	7.725	± 0.045	0.275	± 0.006
445	8	8 - 1/2	1/4	7.975	± 0.045	0.275	± 0.006
446	8 - 1/2	9	1/4	8.475	± 0.055	0.275	± 0.006
447	9	9 - 1/2	1/4	8.975	± 0.055	0.275	± 0.006
448	9 - 1/2	10	1/4	9.475	± 0.055	0.275	± 0.006
449	10	10 - 1/2	1/4	9.975	± 0.055	0.275	± 0.006
450	10 - 1/2	11	1/4	10.475	± 0.060	0.275	± 0.006
451	11	11 - 1/2	1/4	10.975	± 0.060	0.275	± 0.006
452	11 - 1/2	12	1/4	11.475	± 0.060	0.275	± 0.006
453	12	12 - 1/2	1/4	11.975	± 0.060	0.275	± 0.006
454	12 - 1/2	13	1/4	12.475	± 0.060	0.275	± 0.006
455	13	13 - 1/2	1/4	12.975	± 0.060	0.275	± 0.006
456	13 - 1/2	14	1/4	13.475	± 0.070	0.275	± 0.006
457	14	14 - 1/2	1/4	13.975	± 0.070	0.275	± 0.006
458	14 - 1/2	15	1/4	14.475	± 0.070	0.275	± 0.006

Dash #	Nominal			Actual Sizing			
	I.D.	O.D.	C/S	I.D.		C/S	
459	15	15 - 1/2	1/4	14.975	± 0.070	0.275	± 0.006
460	15 - 1/2	16	1/4	15.475	± 0.070	0.275	± 0.006
461	16	16 - 1/2	1/4	15.955	± 0.075	0.275	± 0.006
462	16 - 1/2	17	1/4	16.455	± 0.075	0.275	± 0.006
463	17	17 - 1/2	1/4	16.955	± 0.080	0.275	± 0.006
464	17 - 1/2	18	1/4	17.455	± 0.085	0.275	± 0.006
465	18	18 - 1/2	1/4	17.955	± 0.085	0.275	± 0.006
466	18 - 1/2	19	1/4	18.455	± 0.085	0.275	± 0.006
467	19	19 - 1/2	1/4	18.955	± 0.090	0.275	± 0.006
468	19 - 1/2	20	1/4	19.455	± 0.090	0.275	± 0.006
469	20	20 - 1/2	1/4	19.955	± 0.095	0.275	± 0.006
470	21	21 - 1/2	1/4	20.955	± 0.095	0.275	± 0.006
471	22	22 - 1/2	1/4	21.955	± 0.100	0.275	± 0.006
472	23	23 - 1/2	1/4	22.940	± 0.105	0.275	± 0.006
473	24	24 - 1/2	1/4	23.940	± 0.110	0.275	± 0.006
474	25	25 - 1/2	1/4	24.940	± 0.115	0.275	± 0.006
475	26	26 - 1/2	1/4	25.940	± 0.120	0.275	± 0.006

We offer O-rings in sizes ranging from 400-424. These O-ring size dimensions and tolerances are unassigned under ISO 3601. In addition, We stock specific non-standard cross-section O-rings such as 3/8", 1/2" and 3/4".

O-Rings for Tube Fitting Bosses

Dash #	Tube Size OD Inch	Hydraulic MIL-P-5570 MS28778	O-ring Size (Actual)			
			ID		CS	
901	3/32		0.185	± 0.005	0.056	± 0.003
902	1/8	2	0.239	± 0.005	0.064	± 0.003
903	3/16	3	0.301	± 0.005	0.064	± 0.003
904	1/4	4	0.351	± 0.005	0.072	± 0.003
905	5/16	5	0.414	± 0.005	0.072	± 0.003
906	3/8	6	0.468	± 0.005	0.078	± 0.003
907	7/16		0.530	± 0.005	0.082	± 0.003
908	1/2	8	0.644	± 0.009	0.087	± 0.003
909	9/16		0.706	± 0.009	0.097	± 0.003
910	5/8	10	0.755	± 0.009	0.097	± 0.003
911	11/16		0.863	± 0.009	0.116	± 0.004
912	3/4	12	0.924	± 0.009	0.116	± 0.004
913	13/16		0.986	± 0.010	0.116	± 0.004
914	7/8	14	1.048	± 0.010	0.116	± 0.004
916	1	16	1.171	± 0.010	0.116	± 0.004
918	1-1/8		1.355	± 0.012	0.116	± 0.004
920	1-1/4	20	1.475	± 0.014	0.118	± 0.004
924	1-1/2	24	1.720	± 0.014	0.118	± 0.004
928	1-3/4	28	2.090	± 0.018	0.118	± 0.004
932	2	32	2.337	± 0.018	0.118	± 0.004