O-Ring Materials

Definition of an Encapsulated O-ring

A circular shaped seal with a round cross section, consisting of two components, a Teflon@ jacket, and an internal (core) energizer which Imparts memory to the seal. The o-ring is intended to close off potential leak paths between mating surfaces in both static and dynamic applications.

PSI's encapsulated o-rings are offered in two Teflon@ grades, FEP and PFA with a selection of three different energizers which give the user a choice depending on temperature and operating environment.

Encapsulation

FEP

The most versatile when considering overall corrosion resistance, sealing capability and temperature. Temperature range -450 to + 400 degrees F. (-267 to *205* degrees *C)*

PFA

A fluorocarbon copolymer similar to FEP but it also offers greatly improved mechanical and creep properties at elevated operating temperatures. Temperature range -450 to +500 degrees F. (-267 to *+260 degrees C).*

FEATURES

When considering the encapsulated concept, one should take into account the many features which FEP and PFA Teflon@ have to offer:

- *Corrosion resistance*
- *Ultra low moisture absorption*
- *Uniformity*
- *Low cold flow*
- *Broad temperature range*
- *Good dialectic properties*
- *Flexibility*
- *Low coefficient of friction*
- *Permeation resistance*
- *Abrasion resistance*
- *Non-flammable*
- *Good impact strength*
- *Excellent resilience*
- *Lubricity*
- *No swelling*
- *Reusable*

FDA APPROVAL

The United States Federal Food and Drug Adrninistration has published amendment 21 CFR 177.1550 which permits the use of FEP and PFA as articles or components of articles intended for use in contact with food. There is no general approval for use of these grades in medical applications.

Core Materials

The core material is the component which imparts "life" or "memory" to the encapsalated o-ring when it is subjected to compressive force.

VITON®

A fluoroelastomer compound with a combination of exceptional mechanical properties and compression set resistance. This particular energizer gives an o-ring excellent memory and the ability to recover rapidly from deformation. This core has a Shore A hardness of 75 with a suggested operating temperature range of -10 to 300 degrees Fahrenheit (-23 to + 150 *degrees C)* in encapsulated applications.

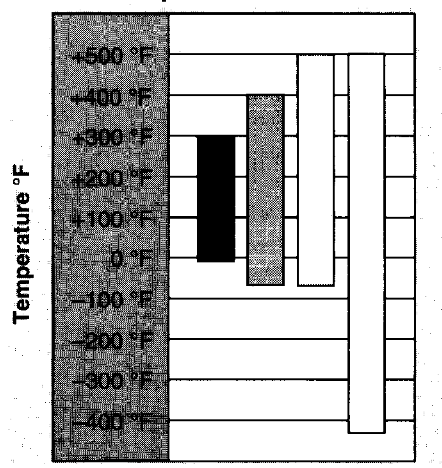
SILICONE

This elastomer possesses mechanical properties similar to Viton®, with the exception of its slightly lower compression set resistance. It is more suitable for sensitive applications where lighter compressive forces are applied to energize the seal. This core has a Shore A hardness of 70 but it also offers a broader operating ternperature range of -80 to 500 degrees Fahrenheit (-62 *to +260 degrees C).*

ASTRA SEAL

The spring energizer, made from precision rolled stainless high strength steel gives a very high compression set resistance. The stainless spring core maintains its resilience even in long term exposure to cryogenic temperatures -420 to +500 degrees Fahrenheit (-250 to 260 *degrees C).* It offers superior sealing characteristics in face seal applications particularly in liquid oxygen and hydrogen service.

Temperature Chart



- ■ Viton® / FEP (-10 to +300 °F)
- ▩ Silicone / FEP (-80 to +400 °F)
- □ Silicone PFA (-80 to +500 °F)
- ❑ Astra Seal (420 to +500 "F)

Hollow-Core Encapsulated O-Rings

Hollow core o-rings provide effective sealing properties in applications where lower compressive forces may limit sealing ability of our standard o-rings. The combination of a hollow core insert with a slightly lower hardness offers a more flexible easier to squeeze o-ring requiring less energy to activate its sealing capability.

NOTE:

Hollow core energizers are available in a limited size range-Please contact the factory for specific details.

Information provided by Creavey Seal Co.

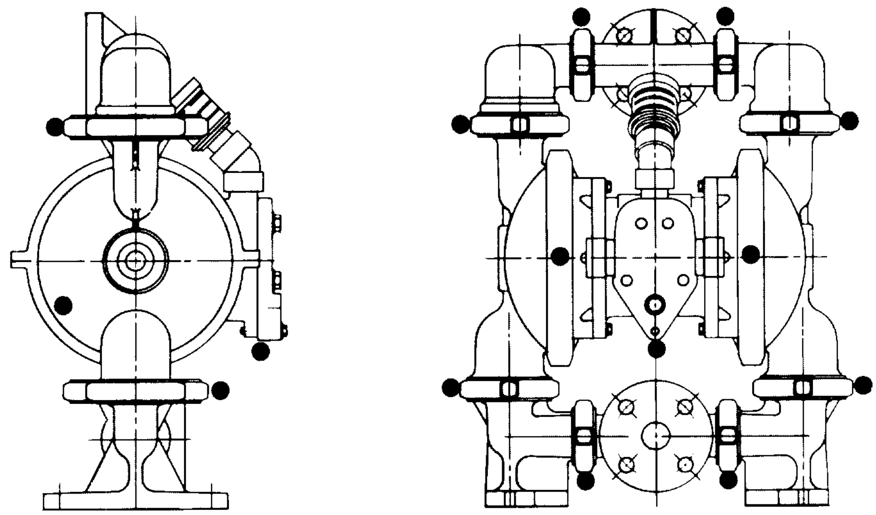
Applications

- *MECHANICAL SEALS*
- *SEALS IN DIAPHRAGM PUMPS*
- *CRYOGENICS*
- *MECHANICAL PUMPS*
- *FILTER ELEMENTS*
- *FILTER HOUSINGS*
- *REUSABLE SYRINGES*
- *AIR-OPERATED VENTS*
- *GAS SERVICE*
- *CORROSIVE FLUID SEALS*
- *HIGH PURITY WATER*
- *LOW PRESSURE, QUICK DISCONNECT PIPING SYSTEMS*
- *VACUUM SERVICE*
- *RELIEF AND EMERGENCY VALVES*
- *LARGE DIAMETER ACCESS COVER.*
- *PRESSURE VESSELS*
- *COMPRESSORS*
- *FACE FLANGE SEALS*
- *GLASS HEAT EXCHANGER TUBE/TUBESHEET SEALS*
- *DAIRY AND BEVERAGE SERVICE*
- *BUTTERFLY VALVES*

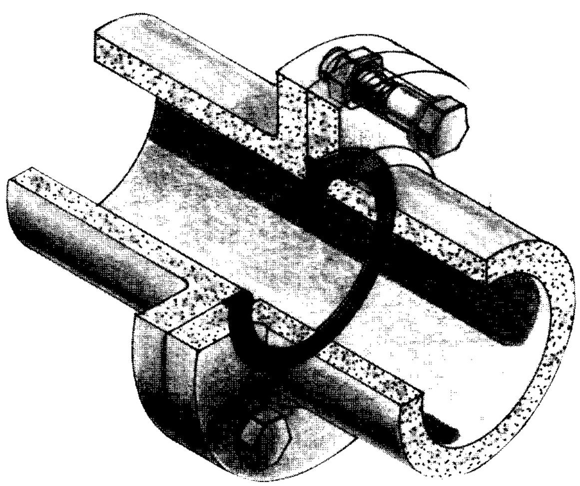
Now there is a CHOICE!

Although solid elastomer o-rings are suitable for a broad range of applications, there are limitations.

Consider Teflon® encapsulated o-rings as the choice which permits your equipment to perform in a broader range of hostile environments and temperatures while retaining their sealing capabilities.



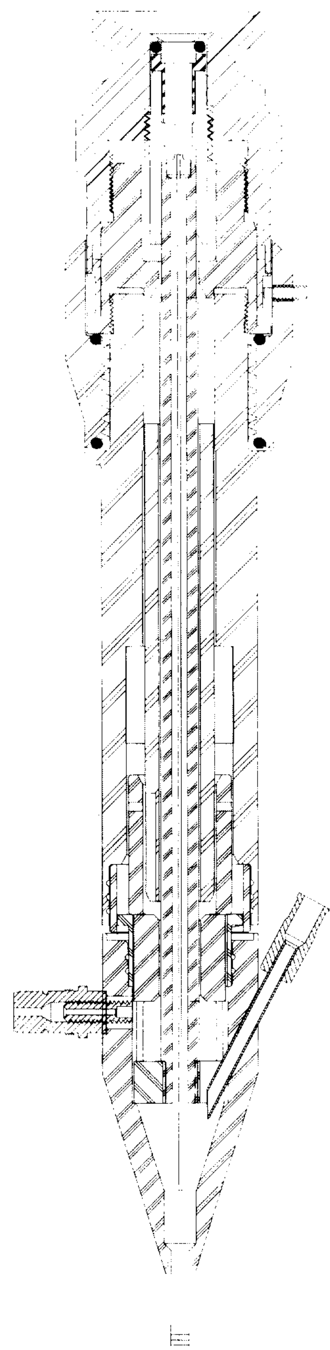
DIAPHRAGM PUMPS



CRYOGENIC SERVICE FLANGE SEALS

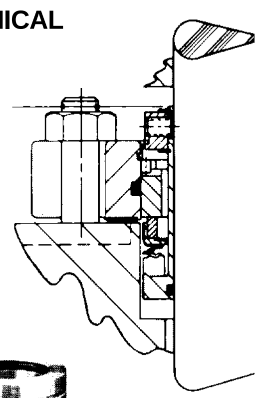
Information provided by Creavey Seal Co.

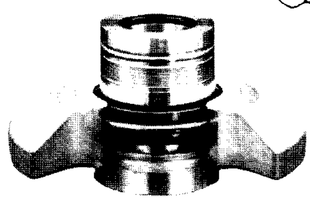
Applications

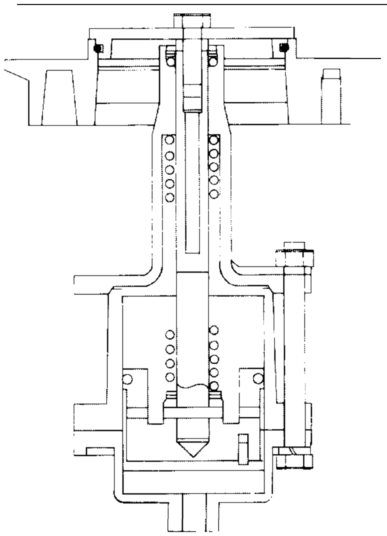


REUSABLE SYRINGES

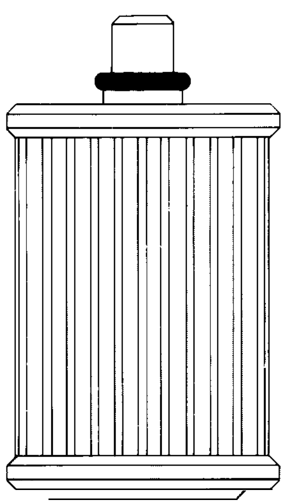
MECHANICAL SEALS



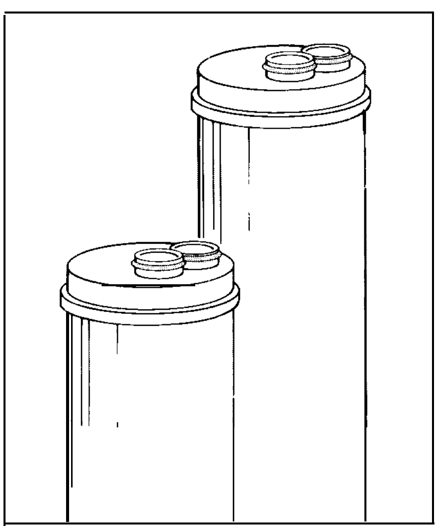




AIR OPERATED VENTS



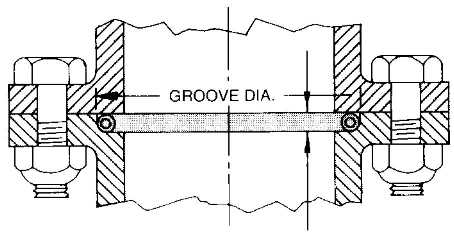
FILTER CARTRIDGES



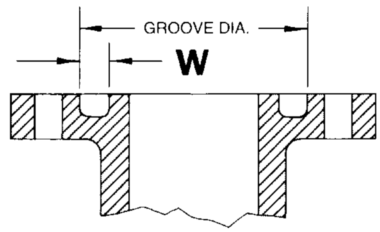
Information provided by Creavey Seal Co.

Engineering Design Data

To overcome pressures exceeding 1500 PSI, the "ASTRA SEALS" utilize vent holes to equalize the pressure.



OPEN TYPE GROOVE



CONFINED TYPE GROOVE

Stainless Steel Core Astra Seals

TABLE 1

Seal Series	A	Groove Depth D	Nominal Squeeze	I.D. MIN.	O.D. MAX.	W MIN.
ASTRA	.075 ±.005	.053	.022	.750	**3.000**	.105
ASTRA	.103 ±.005	.072	.028	.750	**5.000**	.130
ASTRA	.115 ±.005	.850	.030	**1.250**	**3.500**	.150
ASTRA	.140 ±.007	.110	.030	**1.250**	**7.500**	.195
ASTRA	.170 ±.007	.130	**,040**	**1.500**	**12.00**	.230
ASTRA	.192 ±.007	.148	**,044**	**1.750**	**36.00**	.255
ASTRA	**,220** ±.010	.175	.045	**2.000**	**ANY**	.310
ASTRA	.250 ± **015**	.200	.050	**3.000**	**ANY**	.325
ASTRA	.275 ±.015	.225	.050	**3.500**	ANY	.350

Viton & Silicone Core Materials Recommended Design Procedure

For Typical Installation

A. Shaft diameter must be known.
B. Choose the seal cross-section from the recommended O.D. range in Table 2.
C. Use the formula: Shaft Diameter plus twice the seal cross-section minus twice the squeeze.
D. The minimum width (W) is listed for each series in Table 2
E. To determine the nominal shaft diameter if the bore diameter is known. Bore diameter minus twice the seal cross-section plus twice the squeeze.

Example:

A. Known Shaft diameter is 1.000
B. Chosen cross-section .103.
C. Shaft Dia. + (2 X Cross-Section) – (2 X Squeeze) = Bore Diameter.
1.000 + (2 X .103) – (2 X .025)
= 1.156 Bore Diameter.
Width (W) would be .133. The seal part number would be .103--1156.

Note:
There is no maximum limitation to the O.D. in any cross-section. Seal reliability dictates larger cross-sections for larger diameters in order to observe good design practice.

After determining o-ring size, specify the Teflon jacket (FEP or PFA), and the core material (Viton®, Silicone or Astra Seal).

Example:
Viton® / FEP .103–1.156" O.D.

Note:
When ordering, always specify whether ring dimension is inside or outside diameter.

Encapsulated O-Ring Specifications

Dimensions
- SAE Standard AS 568A
- British BS 1806
- British BS 4518 Metric
- Refer to Design Data Section for Tolerances

Teflon@*, FEP, PFA
- ASTM D 2116 and L-P-387A

Viton® *
- ASTM 200
- HK715
- MIL-F-83248A 75 Durometer, Color Black

Silicone
- ASTM 2000
- ZZ-F-765-B Class 2A Grade 70

Stainless Astra
- ASTM Type 302
- MILS 5059

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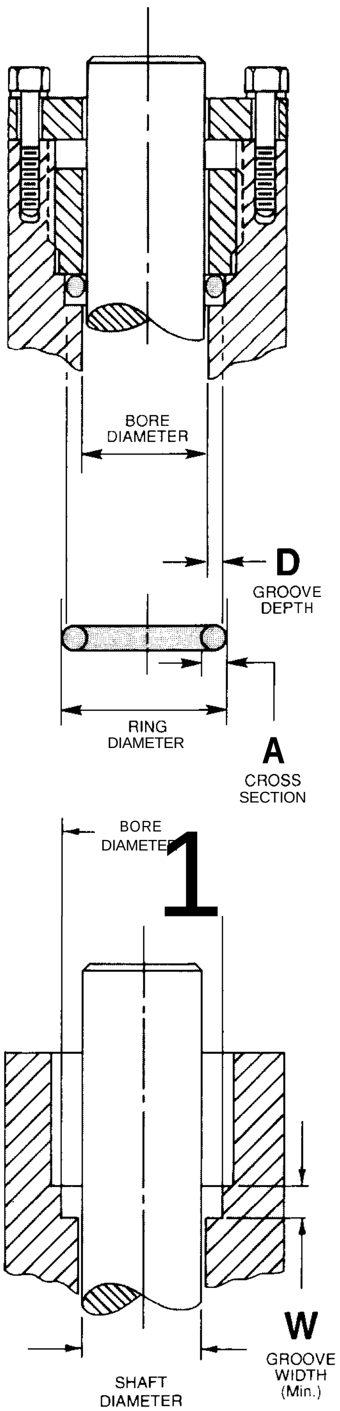
Information provided by Creavey Seal Co.

Teflon Encapsulated O-Rings

TYPICAL APPLICATION



Cross Section Design Data

Silicone and Viton®

TABLE2

Cross Section A	mm	Nominal Squeeze	Groove Depth D	Groove Width W	I.D. Min. (in.)	O.D. Max. (in)
.062 ±.005	1.57	.018	.044	.085	.300	2.50
.070 ±.005	1.78	.022	.048	.097	.300	5.50
.077 ±.005	1.96	.022	.055	,104	.480	5.50
.093 ±.005	2.36	.025	.068	.123	.480	10.0
.103 ±.005	2.62	.025	.078	.133	.480	10.0
.107 ±.005	2.72	.028	.079	,140	.500	10.0
.110 ±.005	2.79	.030	.080	,145	.500	10.0
.115 ±.005	2.92	.030	.085	.150	.500	10.0
.118 ±.005	3.00	.030	.088	.153	.500	10.0
.125 ±.005	3.18	,030	.095	.160	.500	20.0
.135 ±.006	3.43	.030	.105	.170	.500	20.0
.139 ±.006	3.53	.030	.109	.174	.500	20.0
.148 ±.006	3.76	.032	.116	.185	.750	20.0
.158 ±.006	4.01	.032	.126	.195	.750	25.0
,165 ±.006	4.19	.032	.133	.202	1.00	25.0
.170 ±.006	4.32	.035	.135	.210	1.00	25.0
.177 1.006	4.50	.037	.140	.219	1.00	25.0
.185 ±.008	4.70	.040	.145	.230	1.00	25.0
.194 ±.008	4.93	.040	.154	.239	1.10	25.0
.210 ±.008	5.33	.045	.165	.260	1.10	ANY
.220 ±.010	5.59	.047	.175	.270	1.25	ANY
.225 ±.010	5.72	.047	.178	.277	1.50	ANY
.236 ±.010	5.99	,047	.189	.288	1.50	ANY
.250 ±.010	6.35	.050	.200	.305	1.75	ANY
.275 ±.010	6.99	.050	.225	.330	2.25	ANY
.296 ±.010	7.52	.055	.241	.356	3.00	ANY
.315 ±.010	8.00	.060	.255	.380	3.25	ANY
.335 ±.015	8.51	.065	.270	.405	3.50	ANY
.355 ±.015	9.02	.065	.290	.425	3.75	ANY
.375 ±.015	9.53	.070	.305	.450	4.00	ANY
.395 ±.015	10.03	.075	.320	,475	4.00	ANY
.433 ±.015	11.00	.080	.353	.518	7.25	ANY
.475 ±.015	12.07	.085	.390	.565	8.00	ANY
.500 ±.015	12.70	.100	.400	.605	12.0	ANY
.590 ±.025	14.99	.125	.465	.720	15.0	ANY
.625 ±.025	15.88	.125	.465	.720	15.0	ANY
.750 ±.035	19.05	.200	.550	.955	18.0	ANY
.787 ±.035	19.99	.225	.562	1.017	25.0	ANY
1.00 ±.050	25.40	.250	.750	1.255	37.0	ANY

Information provided by Creavey Seal Co

Size Chart

Pressure Seals Standard O-Ring Dimensions

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	C/S
010	1/4	3/8	1/16	.239 ±.010	.070
011	5/16	7/16	1/16	.301 ±.010	.070
012	3/8	1/2	1/16	.364 ±.010	.070
013	7/16	9/16	1/16	.426 ±.010	.070
014	1/2	5/8	1/16	.489 ±.010	.070
015	9/16	11/16	1/16	.551 ±.010	.070
016	5/8	3/4	1/16	.614 ±.010	.070
017	11/16	13/16	1/16	.676 ±.010	.070
018	3/4	7/8	1/16	.739 ±.010	.070
019	13/16	15/16	1/16	.801 ±.010	.070
020	7/8	1	1/16	.864 ±.010	.070
021	15/16	1 1/16	1/16	.926 ±.010	.070
022	1	1 1/8	1/16	.989 ±.010	.070
023	1 1/16	1 3/16	1/16	1.051 ±.010	.070
024	1 1/8	1 1/4	1/16	1.114 ±.010	.070
025	1 3/16	1 5/16	1/16	1.176 ±.010	.070
026	1 1/4	1 3/8	1/16	1.239 ±.010	.070
027	1 5/16	1 7/16	1/16	1.301 ±.010	.070
028	1 3/8	1 1/2	1/16	1.364 ±.010	.070
029	1 1/2	1 5/8	1/16	1.489 ±.010	.070
030	1 5/8	1 3/4	1/16	1.614 ±.010	.070
031	1 3/4	1 7/8	1/16	1.739 ±.010	.070
032	1 7/8	2	1/16	1.864 ±.010	.070
033	2	2 1/8	1/16	1.989 ±.010	.070
034	2 1/8	2 1/4	1/16	2.114 ±.010	.070
035	2 1/4	2 3/8	1/16	2.239 ±.010	.070
036	2 3/8	2 1/2	1/16	2.364 ±.010	.070
037	2 1/2	2 5/8	1/16	2.489 ±.010	.070
038	2 5/8	2 3/4	1/16	2.614 ±.010	.070
039	2 3/4	2 7/8	1/16	2.739 ±.015	.070
040	2 7/8	3	1/16	2.864 ±.015	.070
041	3	3 1/8	1/16	2.989 ±.015	.070
042	3 1/4	3 3/8	1/16	3.239 ±.015	.070
043	3 1/2	3 5/8	1/16	3.489 ±.015	.070
044	3 3/4	3 7/8	1/16	3.739 ±.015	.070
045	4	4 1/8	1/16	3.989 ±.015	.070
046	4 1/4	4 3/8	1/16	4.239 ±.015	.070
047	4 1/2	4 5/8	1/16	4.489 ±.015	.070
048	4 3/4	4 7/8	1/16	4.739 ±.015	.070
049	5	5 1/8	1/16	4.989 ±.015	.070
050	5 1/4	5 3/8	1/16	5.239 ±.015	.070

110	3/8	9/16	3/32	.362 ±.010	.103
111	7/16	5/8	3/32	.424 ±.010	.103
112	1/2	11/16	3/32	.487 ±.010	.103
113	9/16	3/4	3/32	.549 ±.010	.103
114	5/8	13/16	3/32	.612 ±.010	.103
115	11/16	7/8	3/32	.674 ±.010	.103
116	3/4	15/16	3/32	.737 ±.010	.103
117	13/16	1	3/32	.799 ±.010	.103
118	7/8	1 1/16	3/32	.862 ±.010	.103
119	15/16	1 1/8	3/32	.924 ±.010	.103
120	1	1 3/16	3/32	.987 ±.010	.103

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	C/S
121	1 1/16	1 1/4	3/32	1.049 ±.010	.103
122	1 1/8	1 5/16	3/32	1.112 ±.010	.103
123	1 3/16	1 3/8	3/32	1.174 ±.010	.103
124	1 1/4	1 7/16	3/32	1.237 ±.010	.103
125	1 5/16	1 1/2	3/32	1.299 ±.010	.103
126	1 3/8	1 9/16	3/32	1.362 ±.010	.103
127	1 7/16	1 5/8	3/32	1.424 ±.010	.103
128	1 1/2	1 11/16	3/32	1.487 ±.010	.103
129	1 9/16	1 3/4	3/32	1.549 ±.010	.103
130	1 5/8	1 13/16	3/32	1.612 ±.010	.103
131	1 11/16	1 7/8	3/32	1.674 ±.010	.103
132	1 3/4	1 15/16	3/32	1.737 ±.010	.103
133	1 13/16	2	3/32	1.799 ±.010	.103
134	1 7/8	2 1/16	3/32	1.862 ±.010	.103
135	1 15/16	2 1/8	3/32	1.925 ±.010	.103
136	2	2 3/16	3/32	1.987 ±.010	.103
137	2 1/16	2 1/4	3/32	2.050 ±.010	.103
138	2 1/8	2 5/16	3/32	2.112 ±.010	.103
139	2 3/16	2 3/8	3/32	2.175 ±.010	.103
140	2 1/4	2 7/16	3/32	2.237 ±.010	.103
141	2 5/16	2 1/2	3/32	2.300 ±.010	.103
142	2 3/8	2 9/16	3/32	2.362 ±.010	.103
143	2 7/16	2 5/8	3/32	2.425 ±.010	.103
144	2 1/2	2 11/16	3/32	2.487 ±.010	.103
145	2 9/16	2 3/4	3/32	2.550 ±.010	.103
146	2 5/8	2 13/16	3/32	2.612 ±.010	.103
147	2 11/16	2 7/8	3/32	2.675 ±.015	.103
148	2 3/4	2 15/16	3/32	2.737 ±.015	.103
149	2 13/16	3	3/32	2.800 ±.015	.103
150	2 7/8	3 1/16	3/32	2.862 ±.015	.103
151	3	3 3/16	3/32	2.987 ±.015	.103
152	3 1/4	3 7/16	3/32	3.237 ±.015	.103
153	3 1/2	3 11/16	3/32	3.487 ±.015	.103
154	3 3/4	3 15/16	3/32	3.737 ±.015	.103
155	4	4 3/16	3/32	3.987 ±.015	.103
156	4 1/4	4 7/16	3/32	4.237 ±.015	.103
157	4 1/2	4 11/16	3/32	4.487 ±.015	.103
158	4 3/4	4 15/16	3/32	4.737 ±.015	.103
159	5	5 3/16	3/32	4.987 ±.015	.103
160	5 1/4	5 7/8	3/32	5.237 ±.015	.103
161	5 1/2	5 11/16	3/32	5.487 ±.015	.103
162	5 3/4	5 15/16	3/32	5.737 ±.015	.103
163	6	6 3/16	3/32	5.987 ±.015	.103
164	6 1/4	6 7/16	3/32	6.237 ±.015	.103
165	6 1/2	6 11/16	3/32	6.487 ±.015	.103
166	6 3/4	6 15/16	3/32	6.737 ±.015	.103
167	7	7 3/16	3/32	6.987 ±.015	.103
168	7 1/4	7 7/16	3/32	7.237 ±.015	.103
169	7 1/2	7 11/16	3/32	7.487 ±.015	.103
170	7 3/4	7 15/16	3/32	7.737 ±.015	.103
171	8	8 3/16	3/32	7.987 ±.015	.103
172	8 1/4	8 7/16	3/32	8.237 ±.015	.103
173	8 1/2	8 11/16	3/32	8.487 ±.015	.103
174	8 3/4	8 15/16	3/32	8.737 ±.015	.103

Information provided by Creavey Seal Co.

Size Chart

Pressure Seals Standard O-Ring Dimensions

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	C/S
175	9	9 3/16	3/32	8.987 ±.015	.103
176	9 1/4	9 7/16	3/32	9.237 ±.015	.103
177	9 1/2	9 11/16	3/32	9.487 ±.015	.103
178	9 3/4	9 15/16	3/32	9.737 ±.015	.103

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	C/S
205	7/16	11/16	1/8	.421 ±.010	.139
206	1/2	3/4	1/8	.484 ±.010	.139
207	9/16	13/16	1/8	.546 ±.010	.139
208	5/8	7/8	1/8	.609 ±.010	.139
209	11/16	15/16	1/8	.671 ±.010	.139
210	3/4	1	1/8	.734 ±.010	.139
211	13/16	1 1/16	1/8	.796 ±.010	.139
212	7/8	1 1/8	1/8	.859 ±.010	.139
213	15/16	1 3/16	1/8	.921 ±.010	.139
214	1	1 1/4	1/8	.984 ±.010	.139
215	1 1/16	1 5/16	1/8	1.046 ±.010	.139
216	1 1/8	1 3/8	1/8	1.109 ±.010	.139
217	1 3/16	1 7/16	1/8	1.171 ±.010	.139
218	1 1/4	1 1/2	1/8	1.234 ±.010	.139
219	1 5/16	1 9/16	1/8	1.296 ±.010	.139
220	1 3/8	1 5/8	1/8	1.359 ±.010	.139
221	1 7/16	1 11/16	1/8	1.421 ±.010	.139
222	1 1/2	1 3/4	1/8	1.484 ±.010	. 139
223	1 5/8	1 7/8	1/8	1 .609 ±.010	.139
224	1 3/4	2	1/8	1.734 ±.010	.139
225	1 7/8	2 1/8	1/8	1.859 ±.010	.139
226	2	2 1/4	1/8	1.984 ±.010	.139
227	2 1/8	2 3/8	1/8	2.109 ±.010	.139
228	2 1/4	2 1/2	1/8	2.234 ±.010	.139
229	2 3/8	2 5/8	1/8	2.359 ±.010	.139
230	2 1/2	2 3/4	1/8	2.484 ±.010	.139
231	2 5/8	2 7/8	1/8	2.609 ±.015	.139
232	2 3/4	3	1/8	2.734 ±.015	.139
233	2 7/8	3 1/8	1/8	2.859 ±.015	.139
234	3	3 1/4	1/8	2.984 ±.015	.139
235	3 1/8	3 3/8	1/8	3.109 ±.015	.139
236	3 1/4	3 1/2	1/8	3.234 ±.015	.139
237	3 3/8	3 5/8	1/8	3.359 ±.015	.139
238	3 1/2	3 3/4	1/8	3.484 ±.015	.139
239	3 5/8	3 7/8	1/8	3.609 ±.015	.139
240	3 3/4	4	1/8	3.734 ±.015	.139
241	3 7/8	4 1/8	1/8	3.859 ±.015	.139
242	4	4 1/4	1/8	3.984 ±.015	.139
243	4 1/8	4 3/8	1/8	4.109 ±.015	.139
244	4 1/4	4 1/2	1/8	4.234 ±.015	.139
245	4 3/8	4 5/8	1/8	4.359 ±.015	.139
246	4 1/2	4 3/4	1/8	4.484 ±.015	.139
247	4 5/8	4 7/8	1/8	4.609 ±.015	.139
248	4 3/4	5	1/8	4.734 ±.015	.139
249	4 7/8	5 1/8	1/8	4.859 ±.015	.139
250	5	5 1/4	1/8	4.984 ±.015	.139
251	5 1/8	5 3/8	1/8	5.109 ±.015	.139
252	5 1/4	5 1/2	1/8	5.234 ±.015	.139

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	C/S
253	5 3/8	5 5/8	1/8	5.359 ±.015	.139
254	5 1/2	5 3/4	1/8	5.484 ±.015	.139
255	5 5/8	5 7/8	1/8	5.609 ±.020	.139
256	5 3/4	6	1/8	5.734 ±.020	.139
257	5 7/8	6 1/8	1/8	5.859 ±.020	.139
258	6	6 1/4	1/8	5.984 ±.020	.139
259	6 1/4	6 1/2	1/8	6.234 ±.020	.139
260	6 1/2	6 3/4	1/8	6.484 ±.020	.139
261	6 3/4	7	1/8	6.734 ±.020	.139
262	7	7 1/4	1/8	6.984 ±.020	.139
263	7 1/4	7 1/2	1/8	7.234 ±.020	.139
264	7 1/2	7 3/4	1/8	7.484 ±.020	.139
265	7 3/4	8	1/8	7.734 ±.020	.139
266	8	8 1/4	1/8	7.984 ±.020	.139
267	8 1/4	8 1/2	1/8	8.234 ±.020	.139
268	8 1/2	8 3/4	1/8	8.484 ±.020	.139
269	8 3/4	9	1/8	8.734 ±.020	.139
270	9	9 1/4	1/8	8.984 ±.020	.139
271	9 1/4	9 1/2	1/8	9.234 ±.020	.139
272	9 1/2	9 3/4	1/8	9.484 ±.020	.139
273	9 3/4	10	1/8	9.734 ±.020	.139
274	10	10 1/4	1/8	9.984 ±.025	.139
275	10 1/2	10 3/4	1/8	10.484 ±.025	.139
276	11	11 1/4	1/8	10.984 ±.025	.139
277	11 1/2	11 3/4	1/8	11.484 ±.025	.139
278	12	12 1/4	1/8	11.984 ±.025	.139
279	13	13 1/4	1/8	12.984 ±.025	.139
280	14	14 1/4	1/8	13.984 ±.025	.139
281	15	15 1/4	1/8	14.984 ±.025	.139
282	16	16 1/4	1/8	15.955 ±.025	.139
283	17	17 1/4	1/8	16.955 ±.025	.139
284	18	18 1/4	1/8	17.955 ±.025	.139

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	C/S
318	1	1 3/8	3/16	.975 ±.006	.210
319	1 1/16	1 7/16	3/16	1.037 ±.006	.210
320	1 1/8	1 1/2	3/16	1.100 ±.006	.210
321	1 3/16	1 9/16	3/16	1.162 ±.006	.210
322	1 1/4	1 5/8	3/16	1.225 ± 006	.210
323	1 5/16	1 11/16	3/16	1.287 ±.006	.210
324	1 3/8	1 3/4	3/16	1.350 ±.006	.210
325	1 1/2	1 7/8	3/16	1.475 ±.010	.210
326	1 5/8	2	3/16	1.600 +.010	.210
327	1 3/4	2 1/8	3/16	1 725 ±.010	.210
328	1 7/8	2 1/4	3/16	1.850 ±.010	.210
329	2	2 3/8	3/16	1.975 ±.010	.210
330	2 1/8	2 1/2	3/16	2.100 ±.010	.210
331	2 1/4	2 5/8	3/16	2.225 ±.010	.210
332	2 3/8	2 3/4	3/16	2.350 ±.010	.210
333	2 1/2	2 7/8	3/16	2.475 ±.010	.210
334	2 5/8	3	3/16	2.600 ±.010	.210
335	2 3/4	3 1/8	3/16	2.725 + 010	.210
336	2 7/8	3 1/4	3/16	2.850 ±.010	.210
337	3	3 3/8	3/16	2.975 ±.010	.210

Information provided by Creavey Seal Co.

Size Chart

Pressure Seals
Standard O-Ring
Dimensions

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	Actual Size C/S
338	3⅛	3½	3/16	3100 ±.010	.210
339	3¼	3⅝	3/16	3.225 ±.010	.210
340	3⅜	3¾	3/16	3.350 ±.010	.210
341	3½	3⅞	3/16	3.475 ±.010	.210
342	3⅝	4	3/16	3.600 ±.010	.210
343	3¾	4⅛	3/16	3.725 ±.010	.210
344	3⅞	4¼	3/16	3.850 ±.010	.210
345	4	4⅜	3/16	3.975 ±.015	.210
346	4⅛	4½	3/16	4.100 ±.015	.210
347	4¼	4⅝	3/16	4.225 ±.015	.210
348	4⅜	4¾	3/16	4.350 ±.015	.210
349	4½	4⅞	3/16	4.475 ±.015	.210
350	4⅝	5	3/16	4.600 ±.015	.210
351	4¾	5⅛	3/16	4.725 ±.015	.210
352	4⅞	5¼	3/16	4.850 ±.015	.210
353	5	5⅜	3/16	4.975 ±.015	.210
354	5⅛	5½	3/16	5.100 ±.015	.210
355	5¼	5⅝	3/16	5.225 ±.015	.210
356	5⅜	5¾	3/16	5.350 ±.015	.210
357	5½	5⅞	3/16	5.475 ±.015	.210
358	5⅝	6	3/16	5.600 ±.015	.210
359	5¾	6⅛	3/16	5.725 ±.015	.210
360	5⅞	6¼	3/16	5.850 ±.015	.210
361	6	6⅜	3/16	5.975 ±.015	.210
362	6¼	6⅝	3/16	6.225 ±.015	.210
363	6½	6⅞	3/16	6.475 ±.015	.210
364	6¾	7⅛	3/16	6.725 ±.015	.210
365	7	7⅜	3/16	6.975 ±.020	.210
366	7¼	7⅝	3/16	7.225 ±.020	.210
367	7½	7⅞	3/16	7.475 ±.020	.210
368	7¾	8⅛	3/16	7.725 ±.020	.210
369	8	8⅜	3/16	7.975 ±.020	.210
370	8¼	8⅝	3/16	8.225 ±.020	.210
371	8½	8⅞	3/16	8.457 ±.020	.210
372	8¾	9⅛	3/16	8.725 ±.020	.210
373	9	9⅜	3/16	8.975 ±.020	.210
374	9¼	9⅝	3/16	9.225 ±.020	.210
375	9½	9⅞	3/16	9.475 ±.020	.210
376	9¾	10⅛	3/16	9.725 ±.020	.210
377	10	10⅜	3/16	9.975 ±.025	.210
378	10½	10⅞	3/16	10.475 ±.025	.210
379	11	11⅜	3/16	10.975 ±.025	.210
380	11½	11⅞	3/16	11.475 ±.025	.210
381	12	12⅜	3/16	11.975 ±.025	.210
382	13	13⅜	3/16	12.975 ±.025	.210
383	14	14⅜	3/16	13.975 ±.025	.210
384	15	15⅜	3/16	14.975 ±.025	.210
385	16	16⅜	3/16	15.955 ±.030	.210
386	17	17⅜	3/16	16.955 ±.030	.210
387	18	18⅜	3/16	17.955 ±.030	.210
388	19	19⅜	3/16	18.955 ±.030	.210
389	20	20⅜	3/16	19.955 ±.030	.210
390	21	21⅜	3/16	20.955 ±.030	.210
391	22	22⅜	3/16	21.955 ±.030	.210
392	23	23⅜	3/16	22.955 ±.030	.210
393	24	24⅜	3/16	23.955 ±.030	.210

Universal Dash No.	Nominal Size ID	Nominal Size OD	Nominal Size W	Actual Size ID	Actual Size C/S
394	25	25⅜	3/16	24.955 ±.030	.210
395	26	26⅜	3/16	25.955 ±.030	.210
425	4½	5	¼	4.475 ±.015	.275
426	4⅝	5⅛	¼	4.600 ±.015	.275
427	4¾	5¼	¼	4.725 ±.015	.275
428	4⅞	5⅜	¼	4.850 ±.015	.275
429	5	5½	¼	4.975 ±.015	.275
430	5⅛	5⅝	¼	5.100 ±.015	.275
431	5¼	5¾	¼	5.225 ±.015	.275
432	5⅜	5⅞	¼	5.350 ±.015	.275
433	5½	6	¼	5.475 ±.015	.275
434	5⅝	6⅛	¼	5.600 ±.015	.275
435	5¾	6¼	¼	5.725 ±.015	.275
436	5⅞	6⅜	¼	5.850 ±.015	.275
437	6	6½	¼	5.975 ±.015	.275
438	6¼	6¾	¼	6.225 ±.015	.275
439	6½	7	¼	6.475 ±.015	.275
440	6¾	7¼	¼	6.725 ±.015	.275
441	7	7½	¼	6.975 ±.020	.275
442	7¼	7¾	¼	7.225 ±.020	.275
443	7½	8	¼	7.475 ±.020	.275
444	7¾	8¼	¼	7.725 ±.020	.275
445	8	8½	¼	7.975 ±.020	.275
446	8½	9	¼	8.475 ±.020	.275
447	9	9½	¼	8.975 ±.020	.275
448	9½	10	¼	9.475 ±.020	.275
449	10	10½	¼	9.975 ±.025	.275
450	10½	11	¼	10.475 ±.025	.275
451	11	11½	¼	10.975 ±.025	.275
452	11½	12	¼	11.475 ±.025	.275
453	12	12½	¼	11.975 ±.025	.275
454	12½	13	¼	12.475 ±.025	.275
455	13	13½	¼	12.975 ±.025	.275
456	13½	14	¼	13.475 ±.025	.275
457	14	14½	¼	13.975 ±.025	.275
458	14½	15	¼	14.475 ±.025	.275
459	15	15½	¼	14.975 ±.025	.275
460	15½	16	¼	15.475 ±.025	.275
461	16	16½	¼	15.955 ±.030	.275
462	16½	17	¼	16.455 ±.030	.275
463	17	17½	¼	16.955 ±.030	.275
464	17½	18	¼	17.455 ±.030	.275
465	18	18½	¼	17.955 ±.030	.275
466	18½	19	¼	18.455 ±.030	.275
467	19	19½	¼	18.955 ±.030	.275
468	19½	20	¼	19.455 ±.030	.275
469	20	20½	¼	19.955 ±.030	.275
470	21	21½	¼	20.955 ±.030	.275
471	22	22½	¼	21.955 ±.030	.275
472	23	23½	¼	22.940 ±.030	.275
473	24	24½	¼	23.940 ±.030	.275
474	25	25½	¼	24.940 ±.030	.275
475	26	26½	¼	25.940 ±.030	.275

Information provided by Creavey Seal Co.

Teflon" Encapsulated O-Rings

Chemical Compatibility

Teflon@ resins are compatible with the following chemicals:*

Abietic acid
Acetic acid
Acetic anhydride
Acetone
Acetophenone
Acrylic anhydride
Allyl acetate
Allyl methacrylate
Aluminum chloride
Ammonia, liquid
Ammonium chloride
Aniline
Benzonitrile
Benzoyl chloride
Benzyl alcohol
Borax
Boric acid
Bromine
n-Butyl amine
Butyl acetate
Butyl methacrylate
Calcium chloride
Carbon disulfide
Cetane
Chlorine
Chloroform
Chlorosulfonic acid
Chromic acid
Cyclohexane
Cyclohexanone
Dibutyl phthalate
Dibutyl sebacate
Diethyl carbonate
Dimethyl ether
Dimethyl formamide
Di-isobutyl adipate
Dimethylformamide
Dimethyl hydrazine, unsymmetrical
Dioxane
Ethyl acetate
Ethyl alcohol
Ethyl ether
Ethyl hexoate
Ethylene bromide
Ethylene glycol
Ferric chloride
Ferric phosphate
Fluoronaphthalene
Fluoronitrobenzene
Formaldehyde
Formic acid
Furane
Gasoline
Hexachloroethane
Hexane
Hydrazine
Hydrochloric acid
Hydrofluoric acid
Hydrogen peroxide
Lead
Magnesium chloride
Mercury
Methyl ethyl ketone
Methacrylic acid
Methanol
Methyl methacrylate
Naphthalene
Napthols
Nitric acid
Nitrobenzene
2-Nitro-butanol
Nitromethane
Nitrogen tetroxide
2-Nitro-2 methyl propanol
n-Octadecyl alcohol Oils, animal and vegetable
Ozone
Perchlorethylene
Pentachlorobenzamide
Perfluoroxylene
Phenol
Phosphoric acid
Phosphorus pentachloride
Phthalic acid
Pinene
Piperidene
Polyacrylonitrile
Potassium acetate
Potassium hydroxide
Potassium permanganate
Pyridine
Soap and detergents
Sodium hydroxide
Sodium hypochlorite
Sodium peroxide
Solvents, aliphatic and aromatic
Stannous chloride
Sulfur
Sulfuric acid
Tetrabromoethane
Tetrachloroethylene
Trichloroacetic acid
Trichlorethylene
Tricresyl phosphate
Triethanolamine
Vinyl methacrylate
Water
Xylene
Zinc chloride

**Absence of chemicals from list does not imply incompatibility.*

Information provided by Creavey Seal Co.