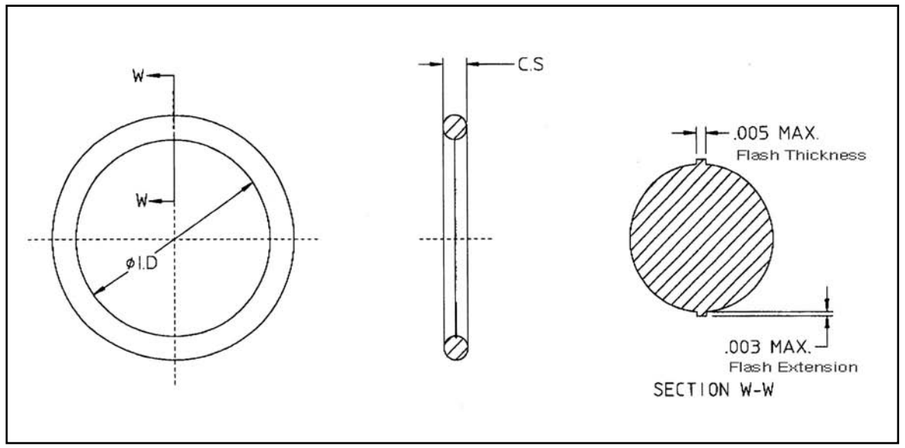
O-RING DESIGN CRITERIA

PRECIX O-RING STANDARD SIZE AND TOLERANCE INFORMATION

An O-Ring functions as a seal through the mechanical deformation of the elastomeric material by the mating surfaces. This deformation, or shape change, fills the configuration of the gland and effectively blocks the passage of liquids or gases.

When designing an O-Ring for your application, a number of considerations should be taken into account. Please refer to the "General O-Ring Selection Criteria." The most economical design is the use of O-Rings that are SAE AS568 specified. The SAE AS568 size chart that follows shows all standard sizes along with their standard tolerances. Precix has tooling available, and usually parts in stock, for the AS568 sizes. If the application cannot use a standard AS568 size, Precix® has the ability to build tooling to the exact O-Ring required.

O-RINGS VS. SEAL RINGS



The majority of O-Rings are made to the AS568 standard. This is an aerospace standard that is issued and maintained by SAE International (www.sae.org). This standard specifies the inside diameters, cross sections, tolerances and size identification codes (dash numbers) for O-Rings used in sealing applications. The standard is intended to be used in all commercial industries as well as the military.

Precix® customers find our AS568 specification O-Rings ideal for most applications.

For applications demanding even greater performance, Precix® offers Seal Rings made to the AS871 specification. This specification is over and above AS568 and applies to manufacturing and inspection techniques used. Like AS568, this specification falls under control of SAE International. Specifically, AS871 takes the following characteristics to the highest level:

- Mold Condition/Part Surface Texture
- Flats (from the removal of flash)
- Methods of Measuring for Receiving Inspection
- Surface Defects

Complete information on the scope of this specification can be obtained from SAE or via Precix® technical personnel.

Precix® has developed a proprietary Synchronous Seal Process™ to manufacture the highest quality AS871 rings available today. This process utilizes advanced:

- Tooling
- Molding techniques
- Special-processed polymers (reduced contamination)
- Post cure techniques
- Vision systems to ensure zero defect PPM performance

When should Seal Ring (AS871) Be Specified?

- In critical applications where increased performance is demanded
- High-speed installation areas where fast-feed, non-clogging in a 7x24 environment is the norm
- In short: anywhere you would like the added security of the highest quality, tightest tolerance O-Ring available today

Please contact Precix® for more information on our Seal Ring offering.

GENERAL O-RING SELECTION CRITERIA

The elastomeric O-Ring is our most common seal. It is used in products ranging from toys, appliances, and automobiles, to aircraft and space vehicles. The reasons are that it is extremely effective if properly selected, has a simple configuration is light in weight, and is easy to install.

An O-Ring functions as a seal through the mechanical deformation of the elastomeric material by the mating metal or plastic surfaces. This deformation, or shape change, starts approaching the configuration of the gland and effectively blocks the passage of liquids or gases.

Although the O-Ring configuration is simple, the design input must include many factors.

SERVICE CONDITIONS
- What fluids will the O-Ring be exposed to over its life?
- How much heat is involved? (continuous or spikes)
- What low temperatures will the O-Ring see?
- Will the part be exposed to ozone?
- Will the O-Ring be exposed to low or high pressure?
- Other considerations such as weathering, flame resistance, etc.

TYPE OF SERVICE
- Will the part be used in a static or dynamic environment?
- If used dynamically, will the movement be reciprocating or rotary?

TYPE AND SIZE OF SURFACES TO BE SEALED
- Small or large surface
- Piston or rod
- Flange, face, plug or cap seal

OTHER DESIGN INPUT CONSIDERATIONS
- Design Failure Mode and Effects Analysis (Design FMEA)
- Life expectancy
- Cost
- How much stretch or compression is required?
- What will be the shape of the gland and the gland dimensions?
- What surface finish should be used?
- Will back-up rings be required?
- Finite Element Analysis (FEA) results, if required

MANUFACTURING AND ASSEMBLY
- Design for Manufacturing considerations
- Design for Assembly considerations

SPECIFICATION REQUIREMENTS
- What customer specifications are required?
- What verification and validation criteria must be met?
- What governing body standards will be used?
- What government and/or environmental, health and safety standards must be considered?

STANDARD OR SPECIAL O-RINGS
- Will a standard AS568 size be acceptable, or is a custom size required?
- Will a standard Precix material be acceptable, or is a special formulation required?

DIMENSIONAL SYSTEM
- Will Metric, English or another dimensional system be used?

MARKING/COLOR
- Will color be required for inventory control or to prevent misapplication? *
- Will special marking on the O-Ring be required?

PACKAGING
- What specific packaging requirements are required?

While the above listing is detailed, it is not meant to be all inclusive.The design input stage is critical to be sure that all considerations have been appropriately studied.

*Most standard O-Ring materials are black in color.

SAE AS568 Revision B

2. NOTES:

2.1 Only one Class of tolerances appears, conforming to the former Class I for O-Rings with inside diameters up to and including 0.50 inch (12.7 mm), and to the former Class II for O-Rings larger than 0.50 inch (12.7 mm).

2.2 In Table 1, the dash numbers are divided into groups of one hundred, and within each group are sequential and nonsignificant. Each hundred group, however, identifies the cross section size of the O-Rings within the group. For example, all 0.070 inch (1.78 mm) and smaller O-Ring cross sections fall into the group of -001 thru -099. The 0.103 inch (2.62 mm) cross section rings fall into the group of -100 thru -199, and so on.

2.3 Table 2, using the 900 series dash numbers, lists all of the presently standardized straight thread tube fitting boss gaskets. This series has traditionally utilized the significant dash numbering system, wherein the dash number designates the tube size in 16th's of an inch. This practice is also followed here, with the exception of the -901, which is intended for a 0.0938 inch (2.38 mm) nominal OD (outside diameter) tube, the 0.0625 inch (1.59 mm) OD tube not being in common aircraft use.

2.4 In the interest of standardization, it is requested that companies or agencies do not use the dash numbers in Table 1 to which sizes have not been assigned. Sizes not assigned are indicated by an asterisk (*). Anyone feeling that any special size not now shown is widely enough used to justify standardization should direct such a request to AMS Committee "CE" for coordination.

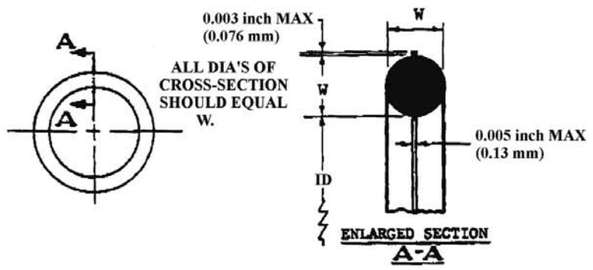


FIGURE 1 - Cross-Sectional Diameter "W"

PREPARED UNDER THE JURISDICTION OF AMS COMMITTEE "CE"

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.070" (1.78mm) CROSS SECTION (±0 .003"/±0.08mm)										
- 001 (1)	0.029	0.004	0.040	0.003	0.0003	0.74	0.10	1.02	0.08	4.464
- 002 (2)	0.042	0.004	0.050	0.003	0.0006	1.07	0.10	1.27	0.08	9.300
- 003 (3)	0.056	0.004	0.060	0.003	0.0010	1.42	0.10	1.52	0.08	16.885
- 004	0.070	0.005	0.070	0.003	0.0017	1.78	0.13	1.78	0.08	27.737
- 005	0.101	0.005	0.070	0.003	0.0021	2.57	0.13	1.78	0.08	33.879
- 006	0.114	0.005	0.070	0.003	0.0022	2.90	0.13	1.78	0.08	36.455
- 007	0.145	0.005	0.070	0.003	0.0026	3.68	0.13	1.78	0.08	42.597
- 008	0.176	0.005	0.070	0.003	0.0030	4.47	0.13	1.78	0.08	48.738
- 009	0.208	0.005	0.070	0.003	0.0034	5.28	0.13	1.78	0.08	55.078
- 010	0.239	0.005	0.070	0.003	0.0037	6.07	0.13	1.78	0.08	61.220
- 011	0.301	0.005	0.070	0.003	0.0045	7.65	0.13	1.78	0.08	73.504
- 012	0.364	0.005	0.070	0.003	0.0052	9.25	0.13	1.78	0.08	85.986
- 013	0.426	0.005	0.070	0.003	0.0060	10.82	0.13	1.78	0.08	98.269
- 014	0.489	0.005	0.070	0.003	0.0068	12.42	0.13	1.78	0.08	110.751
- 015	0.551	0.007	0.070	0.003	0.0075	14.00	0.18	1.78	0.08	123.035
- 016	0.614	0.009	0.070	0.003	0.0083	15.60	0.23	1.78	0.08	135.517
- 017	0.676	0.009	0.070	0.003	0.0090	17.17	0.23	1.78	0.08	147.800
- 018	0.739	0.009	0.070	0.003	0.0098	18.77	0.23	1.78	0.08	160.282
- 019	0.801	0.009	0.070	0.003	0.0105	20.35	0.23	1.78	0.08	172.566
- 020	0.864	0.009	0.070	0.003	0.0113	21.95	0.23	1.78	0.08	185.048
- 021	0.926	0.009	0.070	0.003	0.0120	23.52	0.23	1.78	0.08	197.331
- 022	0.989	0.010	0.070	0.003	0.0128	25.12	0.25	1.78	0.08	209.813
- 023	1.051	0.010	0.070	0.003	0.0136	26.70	0.25	1.78	0.08	222.097
- 024	1.114	0.010	0.070	0.003	0.0143	28.30	0.25	1.78	0.08	234.579
- 025	1.176	0.011	0.070	0.003	0.0151	29.87	0.28	1.78	0.08	246.862
- 026	1.239	0.011	0.070	0.003	0.0158	31.47	0.28	1.78	0.08	259.344
- 027	1.301	0.011	0.070	0.003	0.0166	33.05	0.28	1.78	0.08	271.628
- 028	1.364	0.013	0.070	0.003	0.0173	34.65	0.33	1.78	0.08	284.110
- 029	1.489	0.013	0.070	0.003	0.0188	37.82	0.33	1.78	0.08	308.875
- 030	1.614	0.013	0.070	0.003	0.0204	41.00	0.33	1.78	0.08	333.641
- 031	1.739	0.015	0.070	0.003	0.0219	44.17	0.38	1.78	0.08	358.406
- 032	1.864	0.015	0.070	0.003	0.0234	47.35	0.38	1.78	0.08	383.172
- 033	1.989	0.018	0.070	0.003	0.0249	50.52	0.46	1.78	0.08	407.937
- 034	2.114	0.018	0.070	0.003	0.0264	53.70	0.46	1.78	0.08	432.703
- 035	2.239	0.018	0.070	0.003	0.0279	56.87	0.46	1.78	0.08	457.468
- 036	2.364	0.018	0.070	0.003	0.0294	60.05	0.46	1.78	0.08	482.233
- 037	2.489	0.018	0.070	0.003	0.0309	63.22	0.46	1.78	0.08	506.999
- 038	2.614	0.020	0.070	0.003	0.0325	66.40	0.51	1.78	0.08	531.764
- 039	2.739	0.020	0.070	0.003	0.0340	69.57	0.51	1.78	0.08	556.530
- 040	2.864	0.020	0.070	0.003	0.0355	72.75	0.51	1.78	0.08	581.295
- 041	2.989	0.024	0.070	0.003	0.0370	75.92	0.61	1.78	0.08	606.061
- 042	3.239	0.024	0.070	0.003	0.0400	82.27	0.61	1.78	0.08	655.592
- 043	3.489	0.024	0.070	0.003	0.0430	88.62	0.61	1.78	0.08	705.123
- 044	3.739	0.027	0.070	0.003	0.0461	94.97	0.69	1.78	0.08	754.654
- 045	3.989	0.027	0.070	0.003	0.0491	101.32	0.69	1.78	0.08	804.185
- 046	4.239	0.030	0.070	0.003	0.0521	107.67	0.76	1.78	0.08	853.716

(1) .040" (1.02mm) Cross Section
(2) .050" (1.27mm) Cross Section
(3) .060" (1.52mm) Cross Section

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.070″ (1.78mm) CROSS SECTION (±0.003″/±0.08mm)										
- 047	4.489	0.030	0.070	0.003	0.0551	114.02	0.76	1.78	0.08	903.247
- 048	4.739	0.030	0.070	0.003	0.0581	120.37	0.76	1.78	0.08	952.778
- 049	4.989	0.037	0.070	0.003	0.0612	126.72	0.94	1.78	0.08	1002.309
- 050	5.239	0.037	0.070	0.003	0.0642	133.07	0.94	1.78	0.08	1051.840
0.103″ (2.62mm) CROSS SECTION (±0.003″/±0.08mm)										
-102	0.049	0.005	0.103	0.003	0.0040	1.24	0.13	2.62	0.08	65.202
-103	0.081	0.005	0.103	0.003	0.0048	2.06	0.13	2.62	0.08	78.928
-104	0.112	0.005	0.103	0.003	0.0056	2.84	0.13	2.62	0.08	92.226
-105	0.143	0.005	0.103	0.003	0.0064	3.63	0.13	2.62	0.08	105.524
-106	0.174	0.005	0.103	0.003	0.0073	4.42	0.13	2.62	0.08	118.821
-107	0.206	0.005	0.103	0.003	0.0081	5.23	0.13	2.62	0.08	132.548
-108	0.237	0.005	0.103	0.003	0.0089	6.02	0.13	2.62	0.08	145.846
-109	0.299	0.005	0.103	0.003	0.0105	7.59	0.13	2.62	0.08	172.441
-110	0.362	0.005	0.103	0.003	0.0122	9.19	0.13	2.62	0.08	199.466
-111	0.424	0.005	0.103	0.003	0.0138	10.77	0.13	2.62	0.08	226.061
-112	0.487	0.005	0.103	0.003	0.0154	12.37	0.13	2.62	0.08	253.085
-113	0.549	0.007	0.103	0.003	0.0171	13.94	0.18	2.62	0.08	279.681
-114	0.612	0.009	0.103	0.003	0.0187	15.54	0.23	2.62	0.08	306.705
-115	0.674	0.009	0.103	0.003	0.0203	17.12	0.23	2.62	0.08	333.301
-116	0.737	0.009	0.103	0.003	0.0220	18.72	0.23	2.62	0.08	360.325
-117	0.799	0.010	0.103	0.003	0.0236	20.29	0.25	2.62	0.08	386.920
-118	0.862	0.010	0.103	0.003	0.0253	21.89	0.25	2.62	0.08	413.945
-119	0.924	0.010	0.103	0.003	0.0269	23.47	0.25	2.62	0.08	440.540
-120	0.987	0.010	0.103	0.003	0.0285	25.07	0.25	2.62	0.08	467.565
-121	1.049	0.010	0.103	0.003	0.0302	26.64	0.25	2.62	0.08	494.160
-122	1.112	0.010	0.103	0.003	0.0318	28.24	0.25	2.62	0.08	521.184
-123	1.174	0.012	0.103	0.003	0.0334	29.82	0.30	2.62	0.08	547.780
-124	1.237	0.012	0.103	0.003	0.0351	31.42	0.30	2.62	0.08	574.804
-125	1.299	0.012	0.103	0.003	0.0367	32.99	0.30	2.62	0.08	601.400
-126	1.362	0.012	0.103	0.003	0.0383	34.59	0.30	2.62	0.08	628.424
-127	1.424	0.012	0.103	0.003	0.0400	36.17	0.30	2.62	0.08	655.019
-128	1.487	0.012	0.103	0.003	0.0416	37.77	0.30	2.62	0.08	682.044
-129	1.549	0.015	0.103	0.003	0.0432	39.34	0.38	2.62	0.08	708.639
-130	1.612	0.015	0.103	0.003	0.0449	40.94	0.38	2.62	0.08	735.664
-131	1.674	0.015	0.103	0.003	0.0465	42.52	0.38	2.62	0.08	762.259
-132	1.737	0.015	0.103	0.003	0.0482	44.12	0.38	2.62	0.08	789.283
-133	1.799	0.015	0.103	0.003	0.0498	45.69	0.38	2.62	0.08	815.879
-134	1.862	0.015	0.103	0.003	0.0514	47.29	0.38	2.62	0.08	842.903
-135	1.925	0.017	0.103	0.003	0.0531	48.90	0.43	2.62	0.08	869.928
-136	1.987	0.017	0.103	0.003	0.0547	50.47	0.43	2.62	0.08	896.523
-137	2.050	0.017	0.103	0.003	0.0564	52.07	0.43	2.62	0.08	923.547
-138	2.112	0.017	0.103	0.003	0.0580	53.64	0.43	2.62	0.08	950.143
-139	2.175	0.017	0.103	0.003	0.0596	55.25	0.43	2.62	0.08	977.167
-140	2.237	0.017	0.103	0.003	0.0613	56.82	0.43	2.62	0.08	1003.763
-141	2.300	0.020	0.103	0.003	0.0629	58.42	0.51	2.62	0.08	1030.787

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.103″ (2.62mm) CROSS SECTION (±0.003″/±0.08mm)										
-142	2.362	0.020	0.103	0.003	0.0645	59.99	0.51	2.62	0.08	1057.382
-143	2.425	0.020	0.103	0.003	0.0662	61.60	0.51	2.62	0.08	1084.407
-144	2.487	0.020	0.103	0.003	0.0678	63.17	0.51	2.62	0.08	1111.002
-145	2.550	0.020	0.103	0.003	0.0694	64.77	0.51	2.62	0.08	1138.027
-146	2.612	0.020	0.103	0.003	0.0711	66.34	0.51	2.62	0.08	1164.622
-147	2.675	0.022	0.103	0.003	0.0727	67.95	0.56	2.62	0.08	1191.646
-148	2.737	0.022	0.103	0.003	0.0743	69.52	0.56	2.62	0.08	1218.242
-149	2.800	0.022	0.103	0.003	0.0760	71.12	0.56	2.62	0.08	1245.266
-150	2.862	0.022	0.103	0.003	0.0776	72.69	0.56	2.62	0.08	1271.862
-151	2.987	0.024	0.103	0.003	0.0809	75.87	0.61	2.62	0.08	1325.481
-152	3.237	0.024	0.103	0.003	0.0874	82.22	0.61	2.62	0.08	1432.721
-153	3.487	0.024	0.103	0.003	0.0940	88.57	0.61	2.62	0.08	1539.961
-154	3.737	0.028	0.103	0.003	0.1005	94.92	0.71	2.62	0.08	1647.200
-155	3.987	0.028	0.103	0.003	0.1071	101.27	0.71	2.62	0.08	1754.440
-156	4.237	0.030	0.103	0.003	0.1136	107.62	0.76	2.62	0.08	1861.679
-157	4.487	0.030	0.103	0.003	0.1202	113.97	0.76	2.62	0.08	1968.919
-158	4.737	0.030	0.103	0.003	0.1267	120.32	0.76	2.62	0.08	2076.159
-159	4.987	0.035	0.103	0.003	0.1332	126.67	0.89	2.62	0.08	2183.398
-160	5.237	0.035	0.103	0.003	0.1398	133.02	0.89	2.62	0.08	2290.638
-161	5.487	0.035	0.103	0.003	0.1463	139.37	0.89	2.62	0.08	2397.877
-162	5.737	0.035	0.103	0.003	0.1529	145.72	0.89	2.62	0.08	2505.117
-163	5.987	0.035	0.103	0.003	0.1594	152.07	0.89	2.62	0.08	2612.357
-164	6.237	0.040	0.103	0.003	0.1660	158.42	1.02	2.62	0.08	2719.596
-165	6.487	0.040	0.103	0.003	0.1725	164.77	1.02	2.62	0.08	2826.836
-166	6.737	0.040	0.103	0.003	0.1790	171.12	1.02	2.62	0.08	2934.075
-167	6.987	0.040	0.103	0.003	0.1856	177.47	1.02	2.62	0.08	3041.315
-168	7.237	0.045	0.103	0.003	0.1921	183.82	1.14	2.62	0.08	3148.555
-169	7.487	0.045	0.103	0.003	0.1987	190.17	1.14	2.62	0.08	3255.794
-170	7.737	0.045	0.103	0.003	0.2052	196.52	1.14	2.62	0.08	3363.034
-171	7.987	0.045	0.103	0.003	0.2118	202.87	1.14	2.62	0.08	3470.273
-172	8.237	0.050	0.103	0.003	0.2183	209.22	1.27	2.62	0.08	3577.513
-173	8.487	0.050	0.103	0.003	0.2249	215.57	1.27	2.62	0.08	3684.753
-174	8.737	0.050	0.103	0.003	0.2314	221.92	1.27	2.62	0.08	3791.992
-175	8.987	0.050	0.103	0.003	0.2379	228.27	1.27	2.62	0.08	3899.232
-176	9.237	0.055	0.103	0.003	0.2445	234.62	1.40	2.62	0.08	4006.471
-177	9.487	0.055	0.103	0.003	0.2510	240.97	1.40	2.62	0.08	4113.711
-178	9.737	0.055	0.103	0.003	0.2576	247.32	1.40	2.62	0.08	4220.950
0.139″ (3.53mm) CROSS SECTION (±0.004″/±0.10mm)										
-201	0.171	0.005	0.139	0.004	0.0148	4.34	0.13	3.53	0.10	242.177
-202	0.234	0.005	0.139	0.004	0.0178	5.94	0.13	3.53	0.10	291.393
-203	0.296	0.005	0.139	0.004	0.0207	7.52	0.13	3.53	0.10	339.828
-204	0.359	0.005	0.139	0.004	0.0237	9.12	0.13	3.53	0.10	389.045
-205	0.421	0.005	0.139	0.004	0.0267	10.69	0.13	3.53	0.10	437.480
-206	0.484	0.005	0.139	0.004	0.0297	12.29	0.13	3.53	0.10	486.697
-207	0.546	0.007	0.139	0.004	0.0327	13.87	0.18	3.53	0.10	535.132
-208	0.609	0.009	0.139	0.004	0.0357	15.47	0.23	3.53	0.10	584.348
-209	0.671	0.009	0.139	0.004	0.0386	17.04	0.23	3.53	0.10	632.784

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.139″ (3.53mm) CROSS SECTION (±0.004″/±0.10mm)										
-210	0.734	0.010	0.139	0.004	0.0416	18.64	0.25	3.53	0.10	682.000
-211	0.796	0.010	0.139	0.004	0.0446	20.22	0.25	3.53	0.10	730.436
-212	0.859	0.010	0.139	0.004	0.0476	21.82	0.25	3.53	0.10	779.652
-213	0.921	0.010	0.139	0.004	0.0505	23.39	0.25	3.53	0.10	828.087
-214	0.984	0.010	0.139	0.004	0.0535	24.99	0.25	3.53	0.10	877.304
-215	1.046	0.010	0.139	0.004	0.0565	26.57	0.25	3.53	0.10	925.739
-216	1.109	0.012	0.139	0.004	0.0595	28.17	0.30	3.53	0.10	974.956
-217	1.171	0.012	0.139	0.004	0.0625	29.74	0.30	3.53	0.10	1023.391
-218	1.234	0.012	0.139	0.0004	0.0655	31.34	0.30	3.53	0.10	1072.608
-219	1.296	0.012	0.139	0.004	0.0684	32.92	0.30	3.53	0.10	1121.043
-220	1.359	0.012	0.139	0.004	0.0714	34.52	0.30	3.53	0.10	1170.259
-221	1.421	0.012	0.139	0.004	0.0744	36.09	0.30	3.53	0.10	1218.695
-222	1.484	0.015	0.139	0.004	0.0774	37.69	0.38	3.53	0.10	1267.911
-223	1.609	0.015	0.139	0.004	0.0833	40.87	0.38	3.53	0.10	1365.563
-224	1.734	0.015	0.139	0.004	0.0893	44.04	0.38	3.53	0.10	1463.215
-225	1.859	0.018	0.139	0.004	0.0952	47.22	0.46	3.53	0.10	1560.867
-226	1.984	0.018	0.139	0.004	0.1012	50.39	0.46	3.53	0.10	1658.518
-227	2.109	0.018	0.139	0.004	0.1072	53.57	0.46	3.53	0.10	1756.170
-228	2.234	0.020	0.139	0.004	0.1131	56.74	0.51	3.53	0.10	1853.822
-229	2.359	0.020	0.139	0.004	0.1191	59.92	0.51	3.53	0.10	1951.474
-230	2.484	0.020	0.139	0.004	0.1250	63.09	0.51	3.53	0.10	2049.126
-231	2.609	0.020	0.139	0.004	0.1310	66.27	0.51	3.53	0.10	2146.778
-232	2.734	0.024	0.139	0.004	0.1370	69.44	0.61	3.53	0.10	2244.429
-233	2.859	0.024	0.139	0.004	0.1429	72.62	0.61	3.53	0.10	2342.081
-234	2.984	0.024	0.139	0.004	0.1489	75.79	0.61	3.53	0.10	2439.733
-235	3.109	0.024	0.139	0.004	0.1548	78.97	0.61	3.53	0.10	2537.385
-236	3.234	0.024	0.139	0.004	0.1608	82.14	0.61	3.53	0.10	2635.037
-237	3.359	0.024	0.139	0.004	0.1668	85.32	0.61	3.53	0.10	2732.688
-238	3.484	0.024	0.139	0.004	0.1727	88.49	0.61	3.53	0.10	2830.340
-239	3.609	0.028	0.139	0.004	0.1787	91.67	0.71	3.53	0.10	2927.992
-240	3.734	0.028	0.139	0.004	0.1846	94.84	0.71	3.53	0.10	3025.644
-241	3.859	0.028	0.139	0.004	0.1906	98.02	0.71	3.53	0.10	3123.296
-242	3.984	0.028	0.139	0.004	0.1966	101.19	0.71	3.53	0.10	3220.947

Universal Dash	I.D.	I.D. ± Tolerance	C.S.	C.S. ± Tolerance	Volume (REF) Cubic	I.D.	I.D. ± Tolerance	C.S.	C.S. ± Tolerance	Volume (REF) Cubic
0.139″ (3.53mm) CROSS SECTION (±0.004″/±0.10mm)										
-243	4.109	0.028	0.139	0.004	0.2025	104.37	0.71	3.53	0.10	3318.599
-244	4.234	0.030	0.139	0.004	0.2085	107.54	0.76	3.53	0.10	3416.251
-245	4.359	0.030	0.139	0.004	0.2144	110.72	0.76	3.53	0.10	3513.903
-246	4.484	0.030	0.139	0.004	0.2204	113.89	0.76	3.53	0.10	3611.555
-247	4.609	0.030	0.139	0.004	0.2263	117.07	0.76	3.53	0.10	3709.207
-248	4.734	0.030	0.139	0.004	0.2323	120.24	0.76	3.53	0.10	3806.858
-249	4.859	0.035	0.139	0.004	0.2383	123.42	0.89	3.53	0.10	3904.510
-250	4.984	0.035	0.139	0.004	0.2442	126.59	0.89	3.53	0.10	4002.162
-251	5.109	0.035	0.139	0.004	0.2502	129.77	0.89	3.53	0.10	4099.814
-252	5.234	0.035	0.139	0.004	0.2561	132.94	0.89	3.53	0.10	4197.466
-253	5.359	0.035	0.139	0.004	0.2621	136.12	0.89	3.53	0.10	4295.117
-254	5.484	0.035	0.139	0.004	0.2681	139.29	0.89	3.53	0.10	4392.769
-255	5.609	0.035	0.139	0.004	0.2740	142.47	0.89	3.53	0.10	4490.421
-256	5.734	0.035	0.139	0.004	0.2800	145.64	0.89	3.53	0.10	4588.073
-257	5.859	0.035	0.139	0.004	0.2859	148.82	0.89	3.53	0.10	4685.725
-258	5.984	0.035	0.139	0.004	0.2919	151.99	0.89	3.53	0.10	4783.377
-259	6.234	0.040	0.139	0.004	0.3038	158.34	1.02	3.53	0.10	4978.680
-260	6.484	0.040	0.139	0.004	0.3157	164.69	1.02	3.53	0.10	5173.984
-261	6.734	0.040	0.139	0.004	0.3277	171.04	1.02	3.53	0.10	5369.287
-262	6.984	0.040	0.139	0.004	0.3396	177.39	1.02	3.53	0.10	5564.591
-263	7.234	0.045	0.139	0.004	0.3515	183.74	1.14	3.53	0.10	5759.895
-264	7.484	0.045	0.139	0.004	0.3634	190.09	1.14	3.53	0.10	5955.198
-265	7.734	0.045	0.139	0.004	0.3753	196.44	1.14	3.53	0.10	6150.502
-266	7.984	0.045	0.139	0.004	0.3872	202.79	1.14	3.53	0.10	6345.806
-267	8.234	0.050	0.139	0.004	0.3992	209.14	1.27	3.53	0.10	6541.109
-268	8.484	0.050	0.139	0.004	0.4111	215.49	1.27	3.53	0.10	6736.413
-269	8.734	0.050	0.139	0.004	0.4230	221.84	1.27	3.53	0.10	6931.717
-270	8.984	0.050	0.139	0.004	0.4349	228.19	1.27	3.53	0.10	7127.020
-271	9.234	0.055	0.139	0.004	0.4468	234.54	1.40	3.53	0.10	7322.324
-272	9.484	0.055	0.139	0.004	0.4588	240.89	1.40	3.53	0.10	7517.627
-273	9.734	0.055	0.139	0.004	0.4707	247.24	1.40	3.53	0.10	7712.931

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.139″ (3.53mm) CROSS SECTION (±0.004″/±0.10mm)										
-274	9.984	0.055	0.139	0.004	0.4826	253.59	1.40	3.53	0.10	7908.235
-275	10.484	0.055	0.139	0.004	0.5064	266.29	1.40	3.53	0.10	8298.842
-276	10.984	0.065	0.139	0.004	0.5303	278.99	1.65	3.53	0.10	8689.449
-277	11.484	0.065	0.139	0.004	0.5541	291.69	1.65	3.53	0.10	9080.056
-278	11.984	0.065	0.139	0.004	0.5779	304.39	1.65	3.53	0.10	9470.664
-279	12.984	0.065	0.139	0.004	0.6256	329.79	1.65	3.53	0.10	10251.878
-280	13.984	0.065	0.139	0.004	0.6733	355.19	1.65	3.53	0.10	11033.093
-281	14.984	0.065	0.139	0.004	0.7210	380.59	1.65	3.53	0.10	11814.307
-282	15.955	0.075	0.139	0.004	0.7672	405.26	1.91	3.53	0.10	12572.867
-283	16.955	0.080	0.139	0.004	0.8149	430.66	2.03	3.53	0.10	13354.081
0.210″ (5.33mm) CROSS SECTION (±0.005″/±0.13mm)										
-309	0.412	0.005	0.210	0.005	0.0677	10.46	0.13	5.33	0.13	1109.097
-310	0.475	0.005	0.210	0.005	0.0745	12.07	0.13	5.33	0.13	1221.434
-311	0.537	0.007	0.210	0.005	0.0813	13.64	0.18	5.33	0.13	1331.987
-312	0.600	0.009	0.210	0.005	0.0881	15.24	0.23	5.33	0.13	1444.323
-313	0.662	0.009	0.210	0.005	0.0949	16.81	0.23	5.33	0.13	1554.876
-314	0.725	0.010	0.210	0.005	0.1017	18.42	0.25	5.33	0.13	1667.212
-315	0.787	0.010	0.210	0.005	0.1085	19.99	0.25	5.33	0.13	1777.765
-316	0.850	0.010	0.210	0.005	0.1153	21.59	0.25	5.33	0.13	1890.102
-317	0.912	0.010	0.210	0.005	0.1221	23.16	0.25	5.33	0.13	2000.655
-318	0.975	0.010	0.210	0.005	0.1289	24.77	0.25	5.33	0.13	2112.991
-319	1.037	0.010	0.210	0.005	0.1357	26.34	0.25	5.33	0.13	2223.544
-320	1.100	0.012	0.210	0.005	0.1425	27.94	0.30	5.33	0.13	2335.880
-321	1.162	0.012	0.210	0.005	0.1493	29.51	0.30	5.33	0.13	2446.433
-322	1.225	0.012	0.210	0.005	0.1561	31.12	0.30	5.33	0.13	2558.770
-323	1.287	0.012	0.210	0.005	0.1629	32.69	0.30	5.33	0.13	2669.323
-324	1.350	0.012	0.210	0.005	0.1697	34.29	0.30	5.33	0.13	2781.659
-325	1.475	0.015	0.210	0.005	0.1833	37.47	0.38	5.33	0.13	3004.548
-326	1.600	0.015	0.210	0.005	0.1970	40.64	0.38	5.33	0.13	3227.438
-327	1.725	0.015	0.210	0.005	0.2106	43.82	0.38	5.33	0.13	3450.327
-328	1.850	0.015	0.210	0.005	0.2242	46.99	0.38	5.33	0.13	3673.216
-329	1.975	0.018	0.210	0.005	0.2378	50.17	0.46	5.33	0.13	3896.106
-330	2.100	0.018	0.210	0.005	0.2514	53.34	0.46	5.33	0.13	4118.995
-331	2.225	0.018	0.210	0.005	0.2650	56.52	0.46	5.33	0.13	4341.884
-332	2.350	0.018	0.210	0.005	0.2786	59.69	0.46	5.33	0.13	4564.774
-333	2.475	0.020	0.210	0.005	0.2922	62.87	0.51	5.33	0.13	4787.663

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.210″ (5.33mm) CROSS SECTION (±0.005″/±0.13mm)										
-334	2.600	0.020	0.210	0.005	0.3058	66.04	0.51	5.33	0.13	5010.553
-335	2.725	0.020	0.210	0.005	0.3194	69.22	0.51	5.33	0.13	5233.442
-336	2.850	0.020	0.210	0.005	0.3330	72.39	0.51	5.33	0.13	5456.331
-337	2.975	0.024	0.210	0.005	0.3466	75.57	0.61	5.33	0.13	5679.221
-338	3.100	0.024	0.210	0.005	0.3602	78.74	0.61	5.33	0.13	5902.110
-339	3.225	0.024	0.210	0.005	0.3738	81.92	0.61	5.33	0.13	6124.999
-340	3.350	0.024	0.210	0.005	0.3874	85.09	0.61	5.33	0.13	6347.889
-341	3.475	0.024	0.210	0.005	0.4010	88.27	0.61	5.33	0.13	6570.778
-342	3.600	0.028	0.210	0.005	0.4146	91.44	0.71	5.33	0.13	6793.667
-343	3.725	0.028	0.210	0.005	0.4282	94.62	0.71	5.33	0.13	7016.557
-344	3.850	0.028	0.210	0.005	0.4418	97.79	0.71	5.33	0.13	7239.446
-345	3.975	0.028	0.210	0.005	0.4554	100.97	0.71	5.33	0.13	7462.335
-346	4.100	0.028	0.210	0.005	0.4690	104.14	0.71	5.33	0.13	7685.225
-347	4.225	0.030	0.210	0.005	0.4826	107.32	0.76	5.33	0.13	7908.114
-348	4.350	0.030	0.210	0.005	0.4962	110.49	0.76	5.33	0.13	8131.003
-349	4.475	0.030	0.210	0.005	0.5098	113.67	0.76	5.33	0.13	8353.893
-350	4.600	0.030	0.210	0.005	0.5234	116.84	0.76	5.33	0.13	8576.782
-351	4.725	0.030	0.210	0.005	0.5370	120.02	0.76	5.33	0.13	8799.671
-352	4.850	0.030	0.210	0.005	0.5506	123.19	0.76	5.33	0.13	9022.561
-353	4.975	0.037	0.210	0.005	0.5642	126.37	0.94	5.33	0.13	9245.450
-354	5.100	0.037	0.210	0.005	0.5778	129.54	0.94	5.33	0.13	9468.339
-355	5.225	0.037	0.210	0.005	0.5914	132.72	0.94	5.33	0.13	9691.229
-356	5.350	0.037	0.210	0.005	0.6050	135.89	0.94	5.33	0.13	9914.118
-357	5.475	0.037	0.210	0.005	0.6186	139.07	0.94	5.33	0.13	10137.008
-358	5.600	0.037	0.210	0.005	0.6322	142.24	0.94	5.33	0.13	10359.897
-359	5.725	0.037	0.210	0.005	0.6458	145.42	0.94	5.33	0.13	10582.78
-360	5.850	0.037	0.210	0.005	0.6594	148.59	0.94	5.33	0.13	10805.676
-361	5.975	0.037	0.210	0.005	0.6730	151.77	0.94	5.33	0.13	11028.565
-362	6.225	0.040	0.210	0.005	0.7002	158.12	1.02	5.33	0.13	11474.344
-363	6.475	0.040	0.210	0.005	0.7274	164.47	1.02	5.33	0.13	11920.122
-364	6.725	0.040	0.210	0.005	0.7546	170.82	1.02	5.33	0.13	12365.901
-365	6.975	0.040	0.210	0.005	0.7818	177.17	1.02	5.33	0.13	12811.680
-366	7.225	0.045	0.210	0.005	0.8090	183.52	1.14	5.33	0.13	13257.458
-367	7.475	0.045	0.210	0.005	0.8362	189.87	1.14	5.33	0.13	13703.237
-368	7.725	0.045	0.210	0.005	0.8634	196.22	1.14	5.33	0.13	14149.016
-369	7.975	0.045	0.210	0.005	0.8906	202.57	1.14	5.33	0.13	14594.794
-370	8.225	0.050	0.210	0.005	0.9178	208.92	1.27	5.33	0.13	15040.573
-371	8.475	0.050	0.210	0.005	0.9450	215.27	1.27	5.33	0.13	15486.352

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.210″ (5.33mm) CROSS SECTION (±0.005″/±0.13mm)										
-372	8.725	0.050	0.210	0.005	0.9722	221.62	1.27	5.33	0.13	15932.131
-373	8.975	0.050	0.210	0.005	0.9994	227.97	1.27	5.33	0.13	16377.909
-374	9.225	0.055	0.210	0.005	1.0266	234.32	1.40	5.33	0.13	16823.688
-375	9.475	0.055	0.210	0.005	1.0538	240.67	1.40	5.33	0.13	17269.467
-376	9.725	0.055	0.210	0.005	1.0811	247.02	1.40	5.33	0.13	17715.245
-377	9.975	0.055	0.210	0.005	1.1083	253.37	1.40	5.33	0.13	18161.024
-378	10.475	0.060	0.210	0.005	1.1627	266.07	1.52	5.33	0.13	19052.581
-379	10.975	0.060	0.210	0.005	1.2171	278.77	1.52	5.33	0.13	19944.139
-380	11.475	0.065	0.210	0.005	1.2715	291.47	1.65	5.33	0.13	20835.696
-381	11.975	0.065	0.210	0.005	1.3259	304.17	1.65	5.33	0.13	21727.254
-382	12.975	0.065	0.210	0.005	1.4347	329.57	1.65	5.33	0.13	23510.368
-383	13.975	0.070	0.210	0.005	1.5435	354.97	1.78	5.33	0.13	25293.483
-384	14.975	0.070	0.210	0.005	1.6523	380.37	1.78	5.33	0.13	27076.598
-385	15.955	0.075	0.210	0.005	1.7590	405.26	1.91	5.33	0.13	28824.050
-386	16.955	0.080	0.210	0.005	1.8678	430.66	2.03	5.33	0.13	30607.165
-387	17.955	0.085	0.210	0.005	1.9766	456.06	2.16	5.33	0.13	32390.280
-388	18.955	0.090	0.210	0.005	2.0854	481.46	2.29	5.33	0.13	34173.395
-389	19.955	0.095	0.210	0.005	2.1942	506.86	2.41	5.33	0.13	35956.510
-390	20.955	0.095	0.210	0.005	2.3030	532.26	2.41	5.33	0.13	37739.624
-391	21.955	0.095	0.210	0.005	2.4118	557.66	2.41	5.33	0.13	39522.739
-392	22.940	0.105	0.210	0.005	2.5190	582.68	2.67	5.33	0.13	41279.107
-393	23.940	0.110	0.210	0.005	2.6278	608.08	2.79	5.33	0.13	43062.222
-394	24.940	0.115	0.210	0.005	2.7366	633.48	2.92	5.33	0.13	44845.337
-395	25.940	0.120	0.210	0.005	2.8454	658.88	3.05	5.33	0.13	46628.451
0.275″ (6.99mm) CROSS SECTION (±0.006″/±0.15mm)										
-425	4.475	0.033	0.275	0.006	0.8863	113.67	0.84	6.99	0.15	14524.450
-426	4.600	0.033	0.275	0.006	0.9097	116.84	0.84	6.99	0.15	14906.673
-427	4.725	0.033	0.275	0.006	0.9330	120.02	0.84	6.99	0.15	15288.895
-428	4.850	0.033	0.275	0.006	0.9563	123.19	0.84	6.99	0.15	15671.118
-429	4.975	0.037	0.275	0.006	0.9796	126.37	0.94	6.99	0.15	16053.340
-430	5.100	0.037	0.275	0.006	1.0030	129.54	0.94	6.99	0.15	16435.562
-431	5.225	0.037	0.275	0.006	1.0263	132.72	0.94	6.99	0.15	16817.785
-432	5.350	0.037	0.275	0.006	1.0496	135.89	0.94	6.99	0.15	17200.007
-433	5.475	0.037	0.275	0.006	1.0729	139.07	0.94	6.99	0.15	17582.229
-434	5.600	0.037	0.275	0.006	1.0963	142.24	0.94	6.99	0.15	17964.452
-435	5.725	0.037	0.275	0.006	1.1196	145.42	0.94	6.99	0.15	18346.674
-436	5.850	0.037	0.275	0.006	1.1429	148.59	0.94	6.99	0.15	18728.897
-437	5.975	0.037	0.275	0.006	1.1662	151.77	0.94	6.99	0.15	19111.119

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Volume (REF) Cubic Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Volume (REF) Cubic mm
0.275″ (6.99mm) CROSS SECTION (±0.006″/±0.15mm)										
-438	6.225	0.040	0.275	0.006	1.2129	158.12	1.02	6.99	0.15	19875.564
-439	6.475	0.040	0.275	0.006	1.2595	164.47	1.02	6.99	0.15	20640.008
-440	6.725	0.040	0.275	0.006	1.3062	170.82	1.02	6.99	0.15	21404.453
-441	6.975	0.040	0.275	0.006	1.3528	177.17	1.02	6.99	0.15	22168.898
-442	7.225	0.045	0.275	0.006	1.3995	183.52	1.14	6.99	0.15	22933.343
-443	7.475	0.045	0.275	0.006	1.4461	189.87	1.14	6.99	0.15	23697.787
-444	7.725	0.045	0.275	0.006	1.4928	196.22	1.14	6.99	0.15	24462.232
-445	7.975	0.045	0.275	0.006	1.5394	202.57	1.14	6.99	0.15	25226.677
-446	8.475	0.055	0.275	0.006	1.6327	215.27	1.40	6.99	0.15	26755.567
-447	8.975	0.055	0.275	0.006	1.7260	227.97	1.40	6.99	0.15	28284.456
-448	9.475	0.055	0.275	0.006	1.8193	240.67	1.40	6.99	0.15	29813.346
-449	9.975	0.055	0.275	0.006	1.9126	253.37	1.40	6.99	0.15	31342.235
-450	10.475	0.060	0.275	0.006	2.0059	266.07	1.52	6.99	0.15	32871.125
-451	10.975	0.060	0.275	0.006	2.0992	278.77	1.52	6.99	0.15	34400.014
-452	11.475	0.060	0.275	0.006	2.1925	291.47	1.52	6.99	0.15	35928.904
-453	11.975	0.060	0.275	0.006	2.2858	304.17	1.52	6.99	0.15	37457.793
-454	12.475	0.060	0.275	0.006	2.3791	316.87	1.52	6.99	0.15	38986.683
-455	12.975	0.060	0.275	0.006	2.4724	329.57	1.52	6.99	0.15	40515.572
-456	13.475	0.070	0.275	0.006	2.5657	342.27	1.78	6.99	0.15	42044.462
-457	13.975	0.070	0.275	0.006	2.6590	354.97	1.78	6.99	0.15	43573.351
-458	14.475	0.070	0.275	0.006	2.7523	367.67	1.78	6.99	0.15	45102.241
-459	14.975	0.070	0.275	0.006	2.8456	380.37	1.78	6.99	0.15	46631.130
-460	15.475	0.070	0.275	0.006	2.9389	393.07	1.78	6.99	0.15	48160.020
-461	15.955	0.075	0.275	0.006	3.0285	405.26	1.91	6.99	0.15	49627.754
-462	16.455	0.075	0.275	0.006	3.1218	417.96	1.91	6.99	0.15	51156.643
-463	16.955	0.080	0.275	0.006	3.2151	430.66	2.03	6.99	0.15	52685.533
-464	17.455	0.085	0.275	0.006	3.3084	443.36	2.16	6.99	0.15	54214.422
-465	17.955	0.085	0.275	0.006	3.4017	456.06	2.16	6.99	0.15	55743.312
-466	18.455	0.085	0.275	0.006	3.4950	468.76	2.16	6.99	0.15	57272.201
-467	18.955	0.090	0.275	0.006	3.5883	481.46	2.29	6.99	0.15	58801.091
-468	19.455	0.090	0.275	0.006	3.6816	494.16	2.29	6.99	0.15	60329.980
-469	19.955	0.095	0.275	0.006	3.7749	506.86	2.41	6.99	0.15	61858.870
-470	20.955	0.095	0.275	0.006	3.9615	532.26	2.41	6.99	0.15	64916.649
-471	21.955	0.100	0.275	0.006	4.1481	557.66	2.54	6.99	0.15	67974.428
-472	22.940	0.105	0.275	0.006	4.3319	582.68	2.67	6.99	0.15	70986.340
-473	23.940	0.110	0.275	0.006	4.5184	608.08	2.79	6.99	0.15	74044.119
-474	24.940	0.115	0.275	0.006	4.7050	633.48	2.92	6.99	0.15	77101.898
-475	25.940	0.120	0.275	0.006	4.8916	658.88	3.05	6.99	0.15	80159.677

O-RING SIZE CHARTS

Universal Dash Numbers	I.D. (Inches)	I.D. ± Tolerance (Inches)	C.S. (Inches)	C.S. ± Tolerance (Inches)	Tube Size O.D. Inches	I.D. (mm)	I.D. ± Tolerance (mm)	C.S. (mm)	C.S. ± Tolerance (mm)	Tube Size O.D. (mm)
O-RING BOSS GASKETS FOR STRAIGHT THREAD TUBE FITTINGS										
-901	0.185	0.005	0.056	0.003	3/32	4.70	0.13	1.42	0.08	2.38
-902	0.239	0.005	0.064	0.003	1/8	6.07	0.13	1.63	0.08	3.18
-903	0.301	0.005	0.064	0.003	3/16	7.65	0.13	1.63	0.08	4.76
-904	0.351	0.005	0.072	0.003	1/4	8.92	0.13	1.83	0.08	6.35
-905	0.414	0.005	0.072	0.003	5/16	10.52	0.13	1.83	0.08	7.94
-906	0.468	0.005	0.078	0.003	3/8	11.89	0.13	1.98	0.08	9.53
-907	0.530	0.007	0.082	0.003	7/16	13.46	0.18	2.08	0.08	11.11
-908	0.644	0.009	0.087	0.003	1/2	16.36	0.23	2.21	0.08	12.7
-909	0.706	0.009	0.097	0.003	9/16	17.93	0.23	2.46	0.08	14.29
-910	0.755	0.009	0.097	0.003	5/8	19.18	0.23	2.46	0.08	15.88
-911	0.863	0.009	0.116	0.004	11/16	21.92	0.23	2.95	0.10	17.46
-912	0.924	0.009	0.116	0.004	3/4	23.47	0.23	2.95	0.10	19.05
-913	0.986	0.010	0.116	0.004	13/16	25.04	0.25	2.95	0.10	20.64
-914	1.047	0.010	0.116	0.004	7/8	26.59	0.25	2.95	0.10	22.23
-916	1.171	0.010	0.116	0.004	1	29.74	0.25	2.95	0.10	25.4
-918	1.355	0.012	0.116	0.004	1-1/8	34.42	0.30	2.95	0.10	28.58
-920	1.475	0.014	0.118	0.004	1-1/4	37.47	0.36	3.00	0.10	31.75
-924	1.720	0.014	0.118	0.004	1-1/2	43.69	0.36	3.00	0.10	38.1
-928	2.090	0.018	0.118	0.004	1-3/4	53.09	0.46	3.00	0.10	44.45
-932	2.337	0.018	0.118	0.004	2	59.36	0.46	3.00	0.10	50.80

O-RING DESIGN ENGINEERING SHEETS

Seal function (check applicable motion and fill in all data)

❒ Static

❒ Reciprocating - Rate _____Cycles per _____
Stroke _____inches (mm)

❒ Rotating - Rate _____RPM or FPM (MPM)
Surface conditions: _____
Maximum stretch at installation:_____%

❒ Oscillating (fill in necessary reciprocating or rotating data)

Operating conditions

Temperature range:_____ºF (ºC) to _____ºF (ºC)
Normal temperature:_____ºF (ºC)

Pressure range:_____psi normal maximum pressure
_____psi peak pressure

Fluid(s) to be sealed: _____

Oil analine point: _____

Seal data

Material specification: _____
_____

Note: If you're using your own specification, please enclose a copy of it.

Hardness (durometer - Shore A): _____

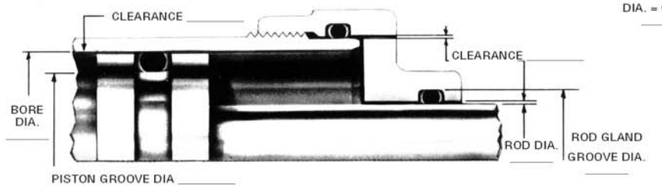
Material presently used: Specification
Compound

If this design is to replace an O-Ring that shows failure, please include a sample showing the failure for our analysis.

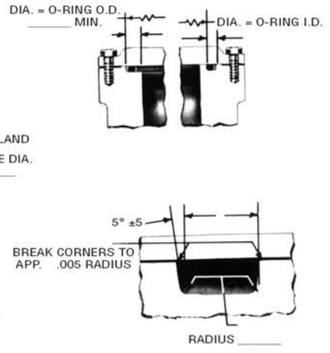
Mechanical data

Using the sketches below please fill in all known mechanical dimensions that apply to your design. If none of these apply, please furnish a sketch.

Reciprocating/oscillating/rotary applications



Static Applications



We're ready to help

❒ This is a hot job. Have a Precix O-Ring specialist call for an appointment

❒ I'm just beginning design work on this project. I'd appreciate hearing from Precix by _____

Name _____ Title _____

Company _____

Address _____ Phone _____

City _____ State _____ Zip _____