

Aerospace Size Standard for O-rings

RATIONALE

This revision correctly presents the metric dimensions so they can be used for dimensional inspection.

1. SCOPE

1.1 Purpose

This Aerospace Standard specifies the inside diameters, cross-sections, tolerances, and size identification codes (dash numbers) for O-rings used in sealing applications and for straight thread tube fitting boss gaskets. The dimensions and tolerances specified in this standard are suitable for any elastomeric material provided that suitable tooling is available.

1.2 Application

1.2.1 This standard is intended to be used in the preparation of Company, Military, or other Standard Drawings for O-Rings. Each dash number, which should be appended to an appropriate Drawing or Standard number, identifies one nominal size O-Ring only.

1.2.2 No attempt is made in this AS to indicate which of the O-Ring sizes listed under this system should be included in any particular Standard Drawing. Its only purpose is to standardize O-Ring sizes and dimensional tolerances and the means of identifying them dimensionally.

2. REFERENCES

There are no referenced publications specified herein.

3. NOTES

3.1 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.

3.2 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.

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- 3.3 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 SAE A-6 Committee for coordination.
- 3.4 Figure 1 illustrates that all diameters of the cross-section should be equal and shows the allowable flash and parting line projection.

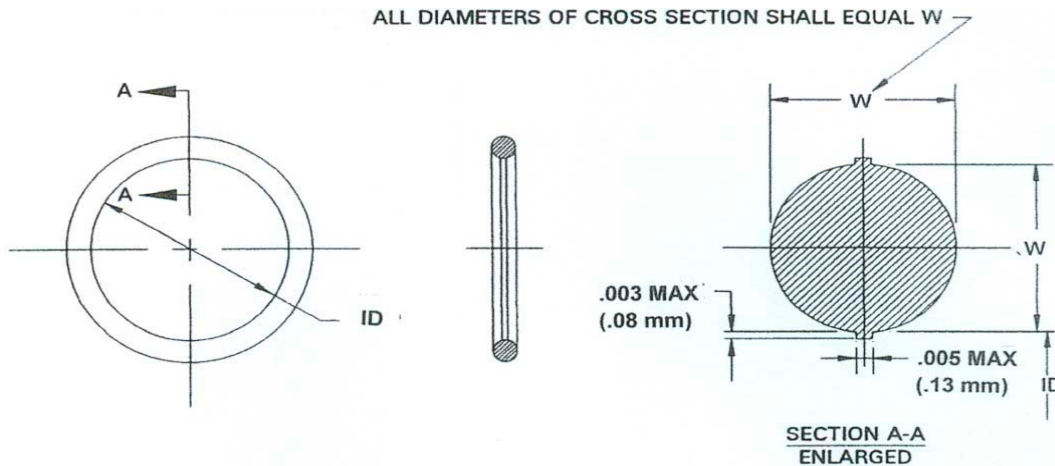


FIGURE 1 - CROSS-SECTIONAL DIAMETER "W"

- 3.5 A change bar (I) located in the left margin is for the convenience of the user in locating areas where technical revisions, not editorial changes, have been made to the previous issue of this document. An (R) symbol to the left of the document title indicates a complete revision of the document, including technical revisions. Change bars and (R) are not used in original publications, nor in documents that contain editorial changes only.

PREPARED BY SAE SUBCOMMITTEE A-6C, FLUID POWER GENERATION AND DISTRIBUTION OF  
COMMITTEE A-6, AEROSPACE FLUID POWER ACTUATION AND CONTROL TECHNOLOGIES

TABLE 1 - AEROSPACE SIZE STANDARDS FOR O-RINGS

Dash Number	ID Inches min	ID Inches max	ID mm min	ID mm max	W Inches min	W Inches max	W mm min	W mm max	Volume (Ref) Cubic Inches	Volume (Ref) Cubic cm
-001	0.025	0.033	0.64	0.84	0.037	0.043	0.94	1.09	0.0003	0.005
-002	0.038	0.046	0.97	1.17	0.047	0.053	1.19	1.35	0.0006	0.010
-003	0.052	0.060	1.32	1.52	0.057	0.063	1.45	1.60	0.0010	0.016
-004	0.065	0.075	1.65	1.91	0.067	0.073	1.70	1.85	0.0017	0.028
-005	0.096	0.106	2.44	2.69	0.067	0.073	1.70	1.85	0.0021	0.034
-006	0.109	0.119	2.77	3.02	0.067	0.073	1.70	1.85	0.0022	0.036
-007	0.140	0.150	3.56	3.81	0.067	0.073	1.70	1.85	0.0026	0.043
-008	0.171	0.181	4.34	4.60	0.067	0.073	1.70	1.85	0.0030	0.049
-009	0.203	0.213	5.16	5.41	0.067	0.073	1.70	1.85	0.0034	0.056
-010	0.234	0.244	5.94	6.20	0.067	0.073	1.70	1.85	0.0037	0.061
-011	0.296	0.306	7.52	7.77	0.067	0.073	1.70	1.85	0.0045	0.074
-012	0.359	0.369	9.12	9.37	0.067	0.073	1.70	1.85	0.0052	0.085
-013	0.421	0.431	10.69	10.95	0.067	0.073	1.70	1.85	0.0060	0.098
-014	0.484	0.494	12.29	12.55	0.067	0.073	1.70	1.85	0.0068	0.111
-015	0.544	0.558	13.82	14.17	0.067	0.073	1.70	1.85	0.0075	0.123
-016	0.605	0.623	15.37	15.82	0.067	0.073	1.70	1.85	0.0083	0.136
-017	0.667	0.685	16.94	17.40	0.067	0.073	1.70	1.85	0.0090	0.147
-018	0.730	0.748	18.54	19.00	0.067	0.073	1.70	1.85	0.0098	0.161
-019	0.792	0.810	20.12	20.57	0.067	0.073	1.70	1.85	0.0105	0.172
-020	0.855	0.873	21.72	22.17	0.067	0.073	1.70	1.85	0.0113	0.185
-021	0.917	0.935	23.29	23.75	0.067	0.073	1.70	1.85	0.0120	0.197
-022	0.979	0.999	24.87	25.37	0.067	0.073	1.70	1.85	0.0128	0.210
-023	1.041	1.061	26.44	26.95	0.067	0.073	1.70	1.85	0.0136	0.223
-024	1.104	1.124	28.04	28.55	0.067	0.073	1.70	1.85	0.0143	0.234
-025	1.165	1.187	29.59	30.15	0.067	0.073	1.70	1.85	0.0151	0.247
-026	1.228	1.250	31.19	31.75	0.067	0.073	1.70	1.85	0.0158	0.259
-027	1.290	1.312	32.77	33.32	0.067	0.073	1.70	1.85	0.0166	0.272
-028	1.351	1.377	34.32	34.98	0.067	0.073	1.70	1.85	0.0173	0.283
-029	1.476	1.502	37.49	38.15	0.067	0.073	1.70	1.85	0.0188	0.308
-030	1.601	1.627	40.67	41.33	0.067	0.073	1.70	1.85	0.0204	0.334