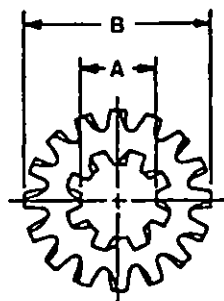


REVIEWER: AV, IS, NU, MS
(SER: AS, AT, MC, SH, VT, YD)

This military standard is approved for use by all Departments and Agencies of the Department of Defense. Selection for all new engineering and design applications and for repetitive use shall be made from this document.



OPTIONAL DESIGNS

TABLE I

DASH NO.	NOM SIZE	A INSIDE DIA		B OUTSIDE DIA		C THICKNESS	
		MAX	MIN	MAX	MIN	MAX	MIN
51	.112	.123	.115	.475	.460	.021	.016
52				.510	.495	.023	.017
53				.610	.580	.027	.019
54	.138	.150	.141	.510	.495	.028	.023
55				.610	.580	.028	.023
56				.690	.670	.028	.023
57	.164	.176	.168	.610	.580	.034	.028
58				.690	.670	.034	.028
59				.760	.740	.034	.028
60	.190	.204	.195	.610	.580	.034	.028
61				.690	.670	.040	.032
62				.760	.740	.040	.032
63				.900	.880	.040	.032
64	.216	.231	.221	.690	.670	.040	.032
65				.760	.725	.040	.032
66				.900	.860	.040	.032
67				.965	.945	.045	.037
68	.250	.267	.256	.760	.725	.040	.032
69				.900	.880	.040	.032
70				.985	.965	.045	.037
71				1.070	1.045	.045	.037
72	.3125	.332	.320	.900	.865	.040	.032
73				.985	.965	.045	.037
74				1.070	1.045	.050	.042
75				1.155	1.130	.050	.042
76	.375	.394	.384	.985	.965	.045	.037
77				1.070	1.045	.050	.042
78				1.155	1.130	.050	.042
79				1.260	1.220	.050	.042
80	.4375	.464	.448	1.070	1.045	.050	.042
81				1.155	1.130	.050	.042
82				1.260	1.220	.055	.047
83				1.335	1.290	.055	.047
84				1.260	1.220	.055	.047
85				1.335	1.290	.055	.047
86	.500	.530	.512	1.410	1.380	.060	.052
87				1.620	1.590	.067	.059
88	.5625	.594	.576	1.335	1.290	.055	.047
89				1.430	1.380	.060	.052
90				1.620	1.590	.067	.059
91				1.830	1.797	.067	.059
92	.625	.661	.640	1.410	1.380	.060	.052
93				1.620	1.590	.067	.059
94				1.830	1.797	.067	.059
95				2.075	2.035	.067	.059

NOTES:

- MATERIAL:** Carbon steel in accordance with Fed. Std. No. 66, AISI 1050 to 1064.
- PROTECTIVE COATING:** Cadmium plated in accordance with QQ-P-416, Type II, Class 3.
- DIMENSIONS:** All dimensions in Table I are in inches.
All dimensions in Table II are in millimetres.
- PART NUMBER:** The MS part number consists of the MS number, plus the dash number.
Example: MS45904-51.
- Referenced documents shall be of the issue in effect on date of invitations for bid.
- For design feature purposes, this standard takes precedence over procurement documents referenced herein.
- Dash numbers 1 through 45 are canceled after 26 June 1968 and superseded by dash numbers 51 through 95, respectively.
- Lined-out washers are inactive for new design.

(B)

(D) For changes see sheets 1 and 2.

P.A. VC Other Code 05 82	TITLE WASHER, LOCK, INTERNAL AND EXTERNAL TOOTH	MILITARY STANDARD MS 45904
PROCUREMENT SPECIFICATION FF-W-100	SUPERSEDES BEA88	SHEET 1 OF 2

DD FORM 672-1

APPROVED 8 MAR 61 REVISED 26 JUN 58 6 FEB 1974

FED. SUP CLASS
5310(B)
TABLE II
METRIC TRANSLATION OF TABLE I

DASH NO.	NOM SIZE	A INSIDE DIA		B OUTSIDE DIA		C THICKNESS	
		MAX	MIN	MAX	MIN	MAX	MIN
51	2.84	3.12	2.92	12.06	11.68	.53	.41
52				12.95	12.57	.53	.43
53				13.49	13.11	.53	.43
54	3.51	3.81	3.58	12.95	12.57	.71	.58
55				13.49	13.11	.71	.58
56				13.93	13.55	.71	.58
57	4.17	4.47	4.27	15.49	14.73	.86	.71
58				16.01	15.63	.86	.71
59				16.53	16.15	.86	.71
60	4.83	5.18	4.95	15.49	14.73	.86	.71
61				17.53	17.02	1.02	.81
62				19.30	18.80	1.02	.81
63				22.86	22.35	1.02	.81
64	5.49	5.87	5.61	19.30	18.42	1.02	.81
65				19.30	18.42	1.02	.81
66				22.86	22.35	1.02	.81
67				25.02	24.51	1.14	.94
68	6.35	6.78	6.50	19.30	18.42	1.02	.81
69				22.86	22.35	1.02	.81
70				25.02	24.51	1.14	.94
71				27.18	26.54	1.14	.94
72	7.94	8.43	8.13	22.86	21.97	1.02	.81
73				25.02	24.51	1.14	.94
74				27.18	26.54	1.27	1.07
75				29.34	28.70	1.27	1.07
76	9.52	10.11	9.75	25.02	24.51	1.14	.94
77				27.18	26.54	1.27	1.07
78				29.34	28.70	1.27	1.07
79				32.00	30.99	1.27	1.07
80	11.11	11.70	11.30	27.18	26.54	1.27	1.07
81				29.34	28.70	1.27	1.07
82				32.00	30.99	1.40	1.19
83				33.40	32.77	1.40	1.19
84	12.70	13.46	13.00	32.00	30.99	1.40	1.19
85				33.40	32.77	1.40	1.19
86				35.81	35.05	1.52	1.32
87				41.15	40.39	1.70	1.50
88	14.29	15.14	14.63	33.40	32.77	1.40	1.19
89				36.32	35.05	1.52	1.32
90				41.15	40.39	1.70	1.50
91				46.48	45.64	1.90	1.50
92	15.88	16.84	16.26	35.81	35.05	1.52	1.32
93				41.15	40.39	1.70	1.50
94				46.48	45.64	1.90	1.50
95				50.16	49.15	1.90	1.50

NOTE:

Lined-out washers are inactive for new design.

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P.A. WC	TITLE WASHER, LOCK - INTERNAL AND EXTERNAL TOOTH	MILITARY STANDARD	
Order Code OS 82		MS 45904	
PROCUREMENT SPECIFICATION FF-V-100	SUPERSEDED BY DEAGS	SHEET 2 OF 2	

DD FORM 672-1 (Continued)

PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

APPROVED 8 MAR 1961 REVISED (A) 26 JUN 1968 (B) FOR CHANGES SEE SHEETS 1 AND 2.