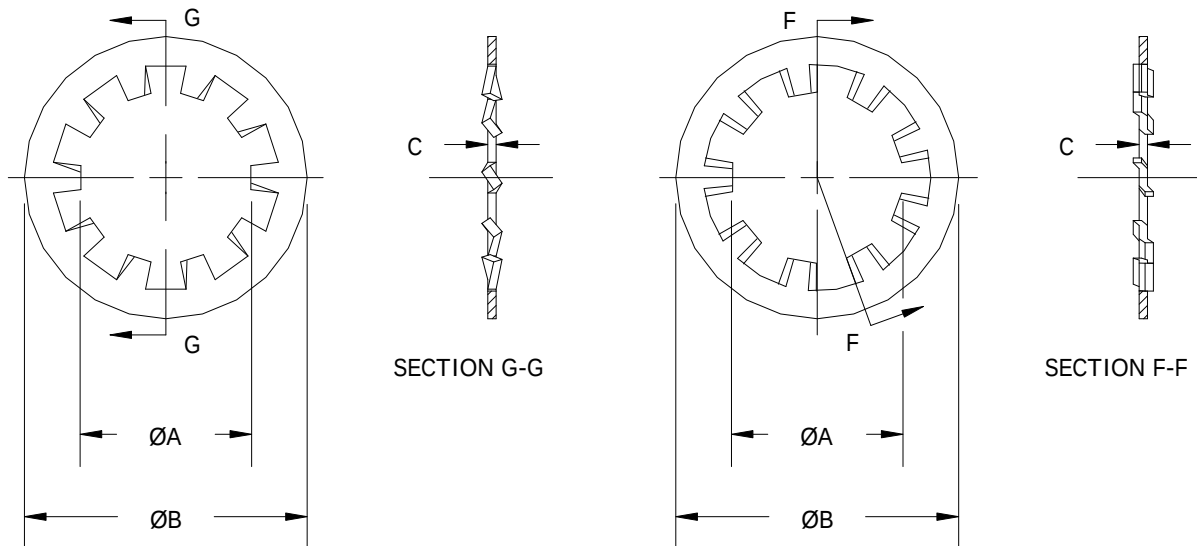


FED.SUPPLY CLASS

5310



ACCEPTABLE DESIGNS

TABLE I – DIMENSIONS

NOMINAL SIZE	Ø A INSIDE DIAMETER		Ø B OUTSIDE DIAMETER		C THICKNESS		STEEL			TIN-BRASS OR PHOSPHOR BRONZE
							CARBON CAD OR ZINC /12/ ③	CORROSION RES		
	COMP 410	300 SER.								
	MAX	MIN	MAX	MIN	MAX	MIN	DASH NO.	DASH NO.	DASH NO.	DASH NO.
#2 .086	.095	.089	.200	.175	.015	.010	35	69		103
#4 .112	.123	.115	.270	.255	.019	.015	36	70	153	104
#6 .138	.150	.141	.295	.275	.021	.017	37	71	154	105
#8 .164	.176	.168	.340	.325	.023	.018	38	72	155	106
#10 .190	.204	.195	.381	.365	.025	.020	39	73		107
1/4 .250	.267	.256	.478	.460	.028	.023	40	74		108
5/16 .312	.332	.320	.610	.594	.034	.028	41	75		109
3/8 .375	.398	.384	.692	.670	.040	.032	42	76		110
7/16 .438	.464	.448	.789	.740	.040	.032	43	77		111
7/16 .438	.480	.472	.607	.593	.020	.016	121 /3/			112 /3/
1/2 .500	.530	.512	.900	.867	.045	.037	44	78		113
9/16 .562	.596	.576	.985	.957	.045	.037	45			114
5/8 .625	.663	.640	1.071	1.045	.050	.042	46	80		115
3/4 .750	.795	.769	1.245	1.220	.055	.047	47	81		116
7/8 .875	.927	.894	1.410	1.364	.060	.052	48	82		117
1 1.000	1.060	1.019	1.637	1.550	.067	.059	49	83		118
1-1/4 1.250	1.325	1.275	1.975	1.921	.067	.059	51	85		120

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MS35333, REVISION K, AMENDMENT 1. PART NUMBERS REMAIN MS35333

THIRD ANGLE PROJECTION		CUSTODIAN		REVISION	
		NATIONAL AEROSPACE STANDARDS COMMITTEE		3	
PROCUREMENT SPECIFICATION	ASME B18.21.1	TITLE		CLASSIFICATION PART STANDARD	
				WASHER, LOCK, FLAT, INTERNAL TOOTH	

TABLE II – DIMENSIONS /9/

NOMINAL SIZE		Ø A INSIDE DIAMETER		Ø B OUTSIDE DIAMETER		C THICKNESS		STEEL			TIN-BRASS OR PHOSPHOR BRONZE
								CARBON CAD OR ZINC /10/ /12/ ③	CORROSION RES		
									COMP 410	300 SER.	
MAX	MIN	MAX	MIN	MAX	MIN	DASH NO.	DASH NO.	DASH NO.	DASH NO.		
1/4	.250	.267	.256	.410	.395	.020	.016	125	135	167	145
3/8	.375	.392	.383	.507	.493	.030	.020		134		
7/16	.437	.448	.440	.592	.580	.020	.016	131	141		151
15/32	.468	.480	.472	.607	.593	.023	.013	126	136		146
9/16	.563	.580	.570	.690	.680	.023	.013	127	137		147
5/8	.625	.640	.630	.800	.790	.027	.017	128	138		148
3/4	.750	.785	.775	1.077	1.047	.027	.017	129	139		149
1	1.000	1.020	1.010	1.390	1.360	.028	.023	130	140		150

MATERIAL: CARBON STEEL, GRADE 1050 TO 1064, HARDNESS 40 TO 50 HRC OR EQUIVALENT.
CORROSION RESISTANT STEEL, COMPOSITION 410.
CORROSION RESISTANT STEEL, 300 SERIES (UNS S300XX), HARDNESS 35-43 HRC.
PHOSPHOR BRONZE, COMPOSITION A IN ACCORDANCE WITH QQ-B-750. UNS510000 PER ASTM B 139/B 139M.
TIN-BRASS, CDA ALLOY 425 (UNS CA42500).

FINISH: (3) CARBON STEEL – CADMIUM PLATED IN ACCORDANCE WITH AMS-QQ-P-416 TYPE II, CLASS 2, OR MECHANICALLY DEPOSITED ZINC IN ACCORDANCE WITH AMS-C-81562, TYPE II, CLASS 6. /12/
CORROSION RESISTANT STEEL – PASSIVATE IN ACCORDANCE WITH AMS2700, METHOD 1, CLASS 4.
CARBON STEEL SHALL BE BLACK (ELECTRODEPOSITED) CHROMIUM, WHEN SPECIFIED. PLATING IN ACCORDANCE WITH MIL-DTL-14538

CODE: (3) ADD "B" AS SUFFIX TO DASH NUMBER FOR BLACK (ELECTRODEPOSITED) CHROMIUM PLATING ON CARBON STEEL, WHEN APPLICABLE.
ADD "P" AS SUFFIX TO DASH NUMBER, OR SUFFIX TO "B", FOR CADMIUM PLATE FINISH ON CARBON STEEL WASHERS.
ADD "M" AS SUFFIX TO DASH NUMBER, OR SUFFIX TO "B", FOR MECHANICALLY DEPOSITED ZINC FINISH ON CARBON STEEL WASHERS.
(3) NO CODE ON CARBON STEEL WASHERS INDICATES NO PREFERENCE SPECIFIED; SUPPLIER'S OPTION.
THE PART NUMBER CONSISTS OF MS FOLLOWED BY THE NUMERIC PORTION OF THIS DOCUMENT, PLUS THE DASH NUMBER, PLUS THE CODE LETTER, WHEN APPLICABLE.

EXAMPLE OF PART NUMBER:
(3) MS35333-131 WASHER, CARBON STEEL, CADMIUM OR ZINC PLATED
MS35333-131B WASHER, CARBON STEEL, CADMIUM OR ZINC PLATED, BLACK FINISH
(3) MS35333-131BP WASHER, CARBON STEEL, CADMIUM PLATED, BLACK FINISH

NOTES: (1) ALL DIMENSIONS ARE IN INCHES AND APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.
(2) THE NUMBER OF TEETH SHALL BE AT THE OPTION OF THE SUPPLIER.
/3/ WASHER, DASH NUMBERS 121 AND 112 ONLY, HAVE THE ALTERNATE TEETH TWISTED IN A DIRECTION OPPOSITE TO THAT OF THE OTHER TEETH.
(4) PART NUMBERS DEFINED BY NASMS35333 SUPERSEDE AN936 IN PART, BEAX 1 AND BEAX 2.

REVISION

3

NASMS35333

SHEET 2



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