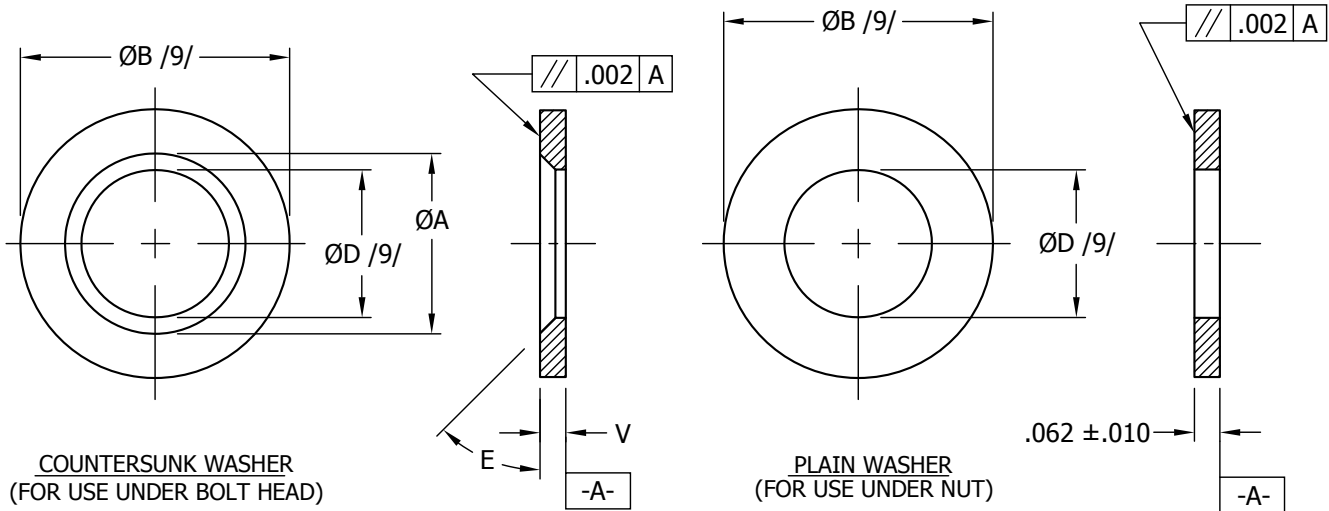


FED.SUPPLY CLASS

5310

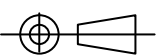


③ TABLE I – WASHER DIMENSIONS AND WEIGHTS

NOMINAL SIZE	DASH NUMBER		ØA		ØB /9/		ØD /9/		E ±1°	V		FLATNESS MAX	WASHER APPROX. WEIGHT LBS/100	
	CSK	PLAIN	MAX	MIN	MAX	MIN	MAX	MIN		MAX	MIN		CSK	PLAIN
.1900	C3	3	.290	.280	.387	.377	.195	.191	45	.069	.057	.007	.15	.15
.2500	C4	4	.350	.340	.491	.481	.255	.251	45	.069	.057		.23	.24
.3125	C5	5	.412	.402	.598	.588	.318	.314	45	.069	.057		.33	.35
.3750	C6	6	.507	.497	.712	.702	.380	.376	45	.085	.071		.58	.49
.4375	C7	7	.569	.559	.831	.821	.443	.439	45	.085	.071		.79	.67
.5000	C8	8	.632	.622	.950	.940	.505	.501	45	.085	.071		1.03	.88
.5625	C9	9	.694	.684	1.069	1.059	.568	.564	45	.085	.071	.010	1.30	1.12
.6250	C10	10	.788	.778	1.192	1.182	.631	.627	45	.085	.071		2.31	1.40
.7500	C12	12	.913	.903	1.433	1.423	.756	.752	45	.085	.071		3.32	2.03
.8750	C14	14	1.038	1.028	1.668	1.658	.881	.877	45	.085	.071		6.71	2.75
1.0000	C16	16	1.163	1.153	1.905	1.895	1.006	1.002	45	.119	.099		8.71	3.59
1.1250	C18	18	1.288	1.278	2.150	2.140	1.131	1.127	45	.119	.099		11.00	4.48
1.2500	C20	20	1.445	1.435	2.391	2.381	1.256	1.252	45	.119	.099	.015	13.61	5.68
1.3750	C22	22	1.570	1.560	2.637	2.627	1.381	1.377	45	.119	.099		19.84	6.93
1.5000	C24	24	1.695	1.685	2.884	2.874	1.506	1.502	45	.119	.099		23.69	8.31

THE INITIAL RELEASE OF THIS DOCUMENT SUPERSEDES MS21299, REVISION A. PART NUMBERS REMAIN MS21299.

THIRD
ANGLE
PROJECTION



CUSTODIAN
NATIONAL AEROSPACE STANDARDS COMMITTEE

REVISION
3

PROCUREMENT
SPECIFICATION

NONE

TITLE

**WASHER, COUNTERSUNK AND PLAIN, FOR USE WITH
BOLTS AND NUTS UP TO AND INCLUDING 260 KSI Ftu**

CLASSIFICATION
PART STANDARD

MS21299
SHEET 1 OF 2

MATERIAL:

ALLOY STEEL - 4130 (UNS G41300) PER ~~MIL-S-6758~~ AMS-S-6758, ~~MIL-S-18729~~, AMS6345, AMS6350, OR AMS6351
 CRES - 17-4PH (UNS S17400) PER AMS5604, CONDITION H1025

HARDNESS:

ALLOY STEEL: HRC 39-45
 CRES 17-4PH: HRC 35-42

FINISH:

ALLOY STEEL - CADMIUM PLATE IN ACCORDANCE WITH AMS-QQ-P-416, TYPE II, CLASS 2
 CRES 17-4PH - PASSIVATE IN ACCORDANCE WITH AMS2700, METHOD 1, CLASS 4

EXAMPLE OF PART NUMBER:

MS21299 - 3 K = WASHER, PLAIN, .1900 NOM SIZE, CRES

- ABSENCE OF LETTER INDICATES STEEL, ALLOY
- LETTER "K" INDICATES CRES
- INDICATES NOMINAL SIZE (SEE TABLE I)
- ABSENCE OF LETTER INDICATES PLAIN WASHER
- LETTER "C" INDICATES COUNTERSUNK WASHER
- BASIC MS NUMBER

NOTES:

- (1) DIMENSIONS IN INCHES AND APPLY AFTER FINISH UNLESS OTHERWISE SPECIFIED.
- (2) DIMENSIONING AND TOLERANCING PER ANSI Y14.5M-1982.
- (3) REMOVE ALL BURRS AND SLIVERS.
- (4) DESIGN AND USAGE INFORMATION: THESE WASHERS ARE PRIMARILY FOR USE WITH NASM21295, NASM21134, NASM21297 AND NASM8906/2 BOLTS.
- (5) THIS STANDARD TAKES PRECEDENCE OVER DOCUMENTS REFERENCED HEREIN.
- ③ (6) UNLESS OTHERWISE SPECIFIED HEREIN, REFERENCED DOCUMENTS SHALL BE THE ISSUE IN EFFECT ON DATE OF MANUFACTURE. HOWEVER, EXISTING MATERIAL INVENTORY CERTIFIED TO A PREVIOUS REVISION OF THE APPLICABLE MATERIAL SPECIFICATION(S) IS ACCEPTABLE FOR USE UNTIL DEPLETION.
- (7) UNLESS OTHERWISE SPECIFIED, PART INVENTORY MANUFACTURED TO PREVIOUS REVISIONS OF THE APPLICABLE DRAWING OR SPECIFICATION MAY BE PROCURED AND USED UNTIL STOCK IS DEPLETED.
- ③ (8) SURFACE ROUGHNESS: 125 MICROINCHES Ra PER ASME B46.1.
- /9/ MINIMUM BEARING AREA BASED ON A BEARING STRESS OF 125% OF MATERIAL COMPRESSION YIELD (=45 KSI) AND 67% OF BOLT ULTIMATE TENSILE VALUE OF 260 KSI Ft_u.

REVISION

3

NASM21299

SHEET 2



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