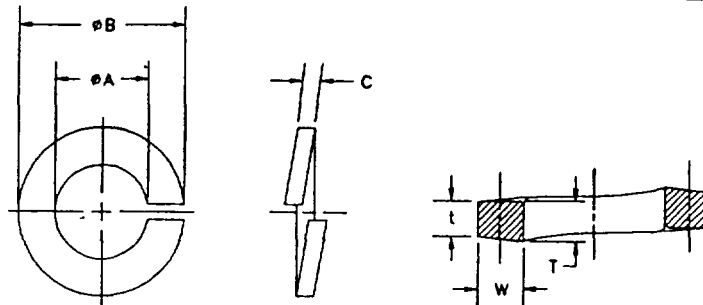


THE REQUIREMENTS FOR ACQUIRING THE PRODUCT(S) DESCRIBED HEREIN SHALL CONSIST OF THIS SPECIFICATION SHEET AND THE ISSUE OF THE FOLLOWING SPECIFICATION LISTED IN THAT ISSUE OF THE DODISS SPECIFIED IN THE SOLICITATION: ASME B18.21.1

THIS SPECIFICATION IS APPROVED FOR USE BY ALL DEPARTMENTS AND AGENCIES OF THE DEPARTMENT OF DEFENSE.

Form Approved
OMB No. 0704-0188



(E)
TABLE I. DASH NUMBERS AND DIMENSIONS

NOMINAL SIZE	CARBON STEEL		CRES 300	ϕA (ID)		ϕB (OD)	WASHER SECTION	
	CAD OR ZINC	PHOS					W WIDTH	C THICKNESS $\frac{T \pm t}{2}$
NO.0 (.060)	1	21	41	.062	.068	.112	.018	.018
NO.2 (.086)	3	23	43	.088	.094	.146	.022	.022
NO.4 (.112)	5	25	45	.114	.120	.173	.022	.022
NO.6 (.138)	7	27	47	.141	.148	.216	.030	.030
NO.8 (.164)	8	28	48	.167	.174	.267	.042	.047
NO.10 (.190)	9	29	49	.193	.200	.294	.042	.047
1/4 (.250)	10	30	50	.252	.260	.363	.047	.078
5/16 (.312)	11	31	51	.314	.322	.457	.062	.093
3/8 (.375)	12	32	52	.377	.385	.550	.076	.125
7/16 (.437)	13	33	53	.440	.450	.644	.090	.140
1/2 (.500)	14	34	54	.502	.512	.733	.103	.172
5/8 (.625)	15	-	55	.628	.641	.917	.125	.203
3/4 (.750)	16	-	-	.753	.766	1.105	.154	.218
7/8 (.875)	17	-	-	.878	.894	1.291	.182	.234
1 (1.000)	18	-	-	1.003	1.024	1.478	.208	.250

(E) DENOTES CHANGE(S)

INCH-POUND

PREPARING ACTIVITY: DLA-IS CUSTODIANS: ARMY- AR NAVY- AS AIR FORCE- 99 DLA-	MILITARY SPECIFICATION SHEET TITLE WASHER, LOCK-HELICAL SPRING, HI-COLLAR	SPECIFICATION SHEET NUMBER MS51848 13 DEC 93 REV E SUPERSEDING MS51848D 13 AUGUST 1991 (SEE NOTE 2.) AMSC- N/A FSC 5310
DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.		Page <u>1</u> of <u>2</u>

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REQUIREMENTS:

1. **MATERIAL:**
 - a. STEEL, CARBON, GRADE 1060 (UNS G10600) THRU 1080 (UNS G10800).
 - b. CORROSION-RESISTANT STEEL (NON-MAGNETIC) WASHERS SHALL BE TYPE 316 (UNS S31600) THRU 1/4" AND TYPE 300 SERIES (UNS S30200 TO UNS S31600) FOR ALL OTHER SIZES.
2. **PROTECTIVE FINISH:**
 - a. CARBON STEEL WASHERS:
 - (E) 1. CADMIUM PLATING SHALL BE IN ACCORDANCE WITH QQ-P-416, TYPE II, CLASS 2, OR MIL-C-81562, TYPE II, CLASS 2.
OR MECHANICALLY DEPOSITED ZINC SHALL BE IN ACCORDANCE WITH MIL-C-81562, TYPE II, CLASS 6.
 3. PHOSPHATE COATING SHALL BE IN ACCORDANCE WITH MIL-P-16232, TYPE Z, CLASS 2.
 - b. CORROSION-RESISTANT STEEL WASHERS:
 1. PASSIVATION SHALL BE IN ACCORDANCE WITH QQ-P-35.
3. **HARDNESS:**
 - a. CARBON STEEL WASHERS SHALL HAVE A HARDNESS OF 38 TO 46HRC.
 - (E) b. CORROSION-RESISTANT STEEL WASHERS TYPE 300 (UNS S30XXX) SERIES WASHERS SHALL HAVE A HARDNESS OF 35-43HRC.
4. **PART NUMBER:** THE PART NUMBER SHALL CONSIST OF THE BASIC SPECIFICATION SHEET NUMBER FOLLOWED BY A DASH NUMBER TAKEN FROM TABLE I.
 EXAMPLE: MS51848-1.
 _____ DASH NUMBER
 _____ BASIC SPECIFICATION SHEET NUMBER
 MS51848-1 INDICATES - WASHER, LOCK-HELICAL SPRING, HI-COLLAR; NO. 0 (.060) NOMINAL SIZE; CARBON STEEL; CADMIUM OR ZINC PLATED.
- (E) 5. **PACKAGING:** PACKAGING SHALL BE IN ACCORDANCE WITH ASTM D3951. (E)

NOTES:

1. ALL DIMENSIONS ARE IN INCHES.
2. MS51848 SUPERSEDES NAS1676 IN PART, SEE TABLE II.
3. IN THE EVENT OF A CONFLICT BETWEEN THE TEXT OF THIS STANDARD AND THE REFERENCES CITED HEREIN, THE TEXT OF THIS STANDARD SHALL TAKE PRECEDENCE.
4. REFERENCED GOVERNMENT (OR NON-GOVERNMENT) DOCUMENTS OF THE ISSUE LISTED IN THAT ISSUE OF THE DEPARTMENT OF DEFENSE INDEX OF SPECIFICATIONS AND STANDARDS (DoDISS) SPECIFIED IN THE SOLICITATION FORM A PART OF THIS STANDARD TO THE EXTENT SPECIFIED HEREIN.

TABLE II. INTERCHANGEABILITY

THE FOLLOWING NAS 1676 PART NUMBERS ARE SUPERSEDED AFTER 28 FEBRUARY 1973 BY THE MS51848 PART NUMBERS SHOWN BELOW. ONLY THE SUPERSEDING MS51848 PART NUMBERS SHALL BE USED FOR NEW DESIGN.

PART NUMBER		PART NUMBER		PART NUMBER	
NAS 1676	SUPERSEDING MS51848	NAS 1676	SUPERSEDING MS51848	NAS 1676	SUPERSEDING MS51848
-0	1	-716	13	C6	47
-2	3	-816	14	C8	48
-4	5	-1016	15	C10	49
-6	7	-1216	16	C418	50
-8	8	-1416	17	C516	51
-10	9	-1616	18	C616	52
-416	10	C0	41	C716	53
-516	11	C2	43	C816	54
-616	12	C4	45	C1016	55

PREPARING ACTIVITY: DLA-IS	MILITARY SPECIFICATION SHEET	SPECIFICATION SHEET NUMBER	
CUSTODIANS: ARMY- AR NAVY- AS AIR FORCE- 99 DLA-		MS51848 13 DEC 93 REV E	
REVIEW: AV, GL, MI, NS, SH, 82	TITLE	SUPERSEDING	
USER: AT, GL, MC, ME, OS, YD	WASHER, LOCK-HELICAL SPRING, HI-COLLAR	MS51848D 13 AUGUST 1991 (SEE NOTE 2.)	
PROJECT NUMBER: 5310-1900		AMSC- N/A	FSC 5310
DISTRIBUTION STATEMENT	A. Approved for public release; distribution is unlimited.		Page <u>2</u> of <u>2</u>