

INCH-POUND

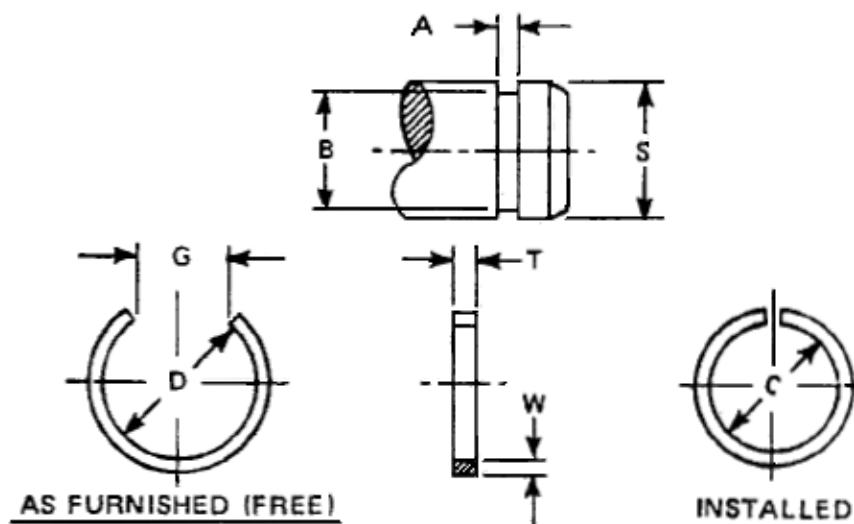
MS3211B
 25 October 2011
 SUPERSEDING
 MS3211A
 24 March 1976

DETAIL SPECIFICATION SHEET

RING, RETAINING, EXTERNAL

This specification sheet is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet.

FIGURE 1. RING, RETAINING

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TABLE I. Dash Numbers and Dimensions.

DASH NO. SEE NOTE 4	SHAFT DIAMETER		RECOMMENDED GROOVE DIMENSIONS				RING DIMENSIONS								
	Nominal	Basic	Diameter		Width		As Furnished (Free)								Installed I.D. C
	S		B		A		I.D. D	Gap G	Width W	Thickness T					
1	3/16	.188	.125		.034		.197	+0.000 -0.005	.125		.062		.031		.125
2	7/32	.219	.173	+0.000	.034	+0.003	.230		.143	+0.005	.046		.031	±0.002	.173
3	1/4	.250	.188	-0.005	.034	-0.000	.266	+0.000	.182	-0.000	.062		.031		.188
4	5/16	.312	.250		.034		.328	-0.010	.191		.079		.039		.250
5	3/8	.375	.313		.052		.394		.264		.094		.047		.313
6	7/16	.438	.376		.060		.459	+0.000	.203		.109		.055	±0.003	.376
7	1/2	.500	.438		.069		.525	-0.015	.233	+0.010	.125	±0.015	.063		.438
8	9/16	.562	.493		.077		.591		.241	.000	.141		.070		.493
9	5/8	.625	.547	+0.000	.086	+0.005	.656	+0.000	.253		.156		.078		.547
10	11/16	.688	.602	-0.010	.094	-0.000	.722	-0.020	.278		.172		.086	±0.004	.602
11	3/4	.750	.656		.103		.788	+0.000	.310		.188		.094		.656
12	13/16	.812	.711		.112		.853	-0.025	.331		.203		.102		.711
13	7/8	.875	.765		.120		.919		.357	+0.015	.219		.109	±0.005	.765
14	15/16	.938	.820		.129		.984	+0.000	.387	-0.000	.234		.117		.820
15	1	1.000	.874		.138		1.050	-0.030	.423		.250		.125		.874

NOTES:

1. MATERIAL:

- Carbon steel in accordance with SAE AIR4127, AISI 1008 thru 1020 inclusive.
- Corrosion resisting steel (CRES) in accordance with SAE-AMS-QQ-S-763, Class 302 or 304, annealed ; ASTM A 666 or 304, strip, annealed; or ASTM A 167, Type 302 or 304, strip, annealed.
- Phosphor bronze in accordance with ASTM-B159/B159M, copper alloy UNS C51000, soft; ASTM B 103/103M, copper alloy UNS C51000 strip, soft, or ASTM B139/B139M, copper alloy UNS C50000, strip or flat wire, soft.
- Beryllium copper, copper alloy, UNS C17200 in accordance with ASTM B197/B197M, or ASTM B194 strip, annealed.

2. PROTECTIVE COATING:

- Carbon steel rings shall be zinc plated in accordance with ASTM B633, Type II, Class Fe/Zn13 or SAE-AMS-C-81562, Class 5, Type II.
- CRES rings shall be passivated in accordance with SAE-AMS2700.
- Beryllium copper rings requiring protective coating shall be cadmium plated in accordance with SAE-AMS-QQ-P-416, Class 2, Type II or SAE-AMS-C-81562, Class 2, Type II.

3. TOLERANCE: tolerances apply before application of protective coating.

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4. PART NUMBER: The MS part number is the MS number, plus the dash and the material designator.

<u>MATERIAL DESIGNATOR</u>	<u>USE AFTER DASH NO. TO SPECIFY:</u>
-SZ	Zinc Plated Carbon Steel Ring
-CR	Corrosion-Resistant Steel Ring
-PB	Phosphor Bronze Ring
-BX	Beryllium Copper Ring
-BC	Cadmium Plated Beryllium Copper Ring

Example: MS3211-1-SZ is the part number for a zinc plated carbon steel external retaining ring with as furnished I.D. of .197 and installed I.D. of .125 for use on a \emptyset .188 shaft having a groove of \emptyset .125 and a groove width of .034.

5. DIMENSIONS: All dimensions are in inches.
6. Referenced documents shall be of the issue in effect on the invitation for bids.
7. For design feature purposes, this standard takes precedence over procurement documents referenced herein.
8. Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

Custodians:
Army - MI
Navy - OS

Preparing activity:
DLA - IS

(Project 5325-2011-001)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <https://assist.daps.dla.mil>