

**INCH-POUND**

A-A-59558

23 June 2000

SUPERSEDING

MS51990B

19 January 1989

## COMMERCIAL ITEM DESCRIPTION

## RING, LOCK, SERRATED

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. SCOPE. This commercial item description (CID) establishes the government acquisition requirements for serrated lock rings to be used as a general purpose fastener with a mechanical lock feature to resist rotation.

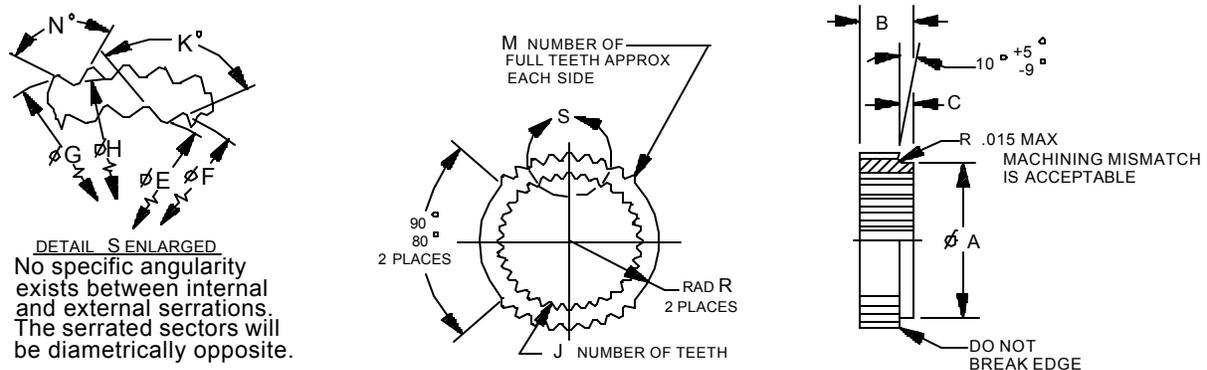


FIGURE 1. Serrated lock ring.

2. CLASSIFICATION. The rings shall be classified and identified by types listed below and sizes specified in table I. The selected types and sizes of products to be supplied shall be specified in the acquisition order (see 7.4(b)).

Type I - Carbon steel

Type II - Corrosion resistant steel

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to: Defense Supply Center Richmond (DSCR), ATTN: DSCR-VBD, 8000 Jefferson Davis Highway, Richmond, VA 23297-5610.

AMSC N/A

FSC 5365

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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TABLE I. Product size code and dimensions.

Size Code	ØA	B	C	ØE +0.04 -0.03	ØF	ØG +0.05 -0.04	ØH +0.03 -0.06	J	K° +1° -2°	M	N°	R RAD REF
01	.223	.084	.027	.161	.189	.274	.246	14	102°	5	100°	.120
02	.255	.099	.040	.189	.223	.308	.279	16	90°	5	100°	.135
03	.298	.099	.040	.213	.252	.354	.324	13	102°	6	90°	.159
04	.343	.112	.040	.266	.315	.399	.363	17	86°	6	90°	.180
05	.400	.138	.040	.323	.364	.468	.430	20	102°	7	90°	.214
06	.480	.145	.040	.390	.425	.545	.511	24	102°	9	90°	.252
07	.560	.145	.040	.468	.505	.624	.589	26	102°	10	90°	.293
08	.702	.161	.049	.574	.613	.767	.731	26	111°	11	100°	.362
09	.837	.176	.056	.695	.740	.910	.871	30	111°	12	100°	.431
10	.958	.176	.056	.795	.845	1.040	.994	30	111°	10	111°	.492
11	1.078	.176	.056	.908	.950	1.170	1.113	38	102°	11	102°	.551
12	1.232	.193	.070	1.035	1.093	1.326	1.274	36	111°	10	111°	.629
13	1.371	.193	.070	1.189	1.247	1.456	1.402	48	90°	10	102°	.692
14	1.509	.193	.070	1.282	1.339	1.611	1.551	42	111°	8	111°	.770

### 3. SALIENT CHARACTERISTICS

#### 3.1 Materials.

##### 3.1.1 Carbon steel rings.

3.1.1.1 Type I rings shall be made from steel alloy conforming to one of the following documents:

Grade 4130 (UNS G41300) SAE AMS 6370, "Steel Bars, Forgings, and Rings 0.95Cr - 0.20Mo (0.28 - 0.33C) (SAE 4130)" (DoD adopted).

Grade 4140 (UNS G41400) SAE AMS 6382 "Steel Bars, Forgings, and Rings 0.95Cr - 0.20Mo (0.38 - 0.43C) (SAE 4140) Annealed" (DoD adopted).

Grade 8740 (UNS G87400) SAE AMS 6322, "Steel Bars, Forgings, and Rings 0.50Cr - 0.55Ni - 0.25Mo (0.38 - 0.43C) (SAE 8740)" (DoD adopted).

### 3.1.2 Corrosion resistant steel rings.

3.1.2.1 Type II rings shall be made from Type A286 (UNS S66286) corrosion resistant steel conforming to one of the following documents:

- |              |  |
|--------------|--|
| SAE AMS 5731 | "Steel, Corrosion and Heat Resistant Bars, Wire, Forgings, Tubing, and Rings 15Cr - 25.5Ni - 1.2Mo - 2.1Ti - 0.006B - 0.30V Consumable Electrode Melted, 1800 °F (982 °C) Solution Heat Treated" (DoD adopted).                    |
| SAE AMS 5732 | "Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, Tubing, and Rings 15Cr - 25.5Ni - 1.2Mo - 2.1Ti - 0.006B - 0.30V Consumable Electrode Melted 1800 °F (982 °C) Solution and Precipitation Heat Treated" (DoD adopted).  |
| SAE AMS 5734 | "Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, and Tubing 15Cr - 25.5Ni - 1.2Mo - 2.1Ti - 0.006B - 0.30V Consumable Electrode Melted, 1650 °F (899 °C) Solution Heat Treated" (DoD adopted).                          |
| SAE AMS 5737 | "Steel, Corrosion and Heat Resistant, Bars, Wire, Forgings, and Tubing 15Cr - 25.5Ni - 1.2Mo - 2.1Ti - 0.006B - 0.30V Consumable Electrode Melted, 1650 Degrees F (899 °C) Solution and Precipitation Heat Treated" (DoD adopted). |

### 3.2 Protective coating.

3.2.1 Unless otherwise specified, rings manufactured from carbon steel shall be plated with Class 8, Type II cadmium in accordance with ASTM B 766, "Standard Specification for Electrodeposited Coatings of Cadmium" (DoD adopted). Rings shall be hydrogen embrittlement relieved after plating.

3.2.1.1 If authorized in the acquisition document, the steel ring shall be plated with Class Fe/Zn 12, Type II zinc per ASTM B 633, "Standard Specification for Electrodeposited Coatings of Zinc on Iron and steel" (DoD adopted) (see 7.4(c)).

3.2.2 Rings manufactured from corrosion resistant steel shall be cleaned, descaled, and passivated in accordance with ASTM A 967, "Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts" (DoD adopted).

3.3 Surface roughness. Machined surfaces, except serrations, shall be machined to 125 microinches  $R_a$  in accordance with American Society of Mechanical Engineers (ASME) B46.1, "Surface Texture (Surface Roughness, Waviness, and Lay)" (DoD adopted).

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### 3.4 Hardness.

3.4.1 Carbon steel rings shall have a hardness of HRC 36-45 in accordance with ASTM E 18, "Standard Test Methods for Rockwell Hardness and Rockwell Superficial Hardness of Metallic Materials" (DoD adopted).

3.4.2 Corrosion resistant steel rings shall have a minimum hardness of 269 HB in accordance with ASTM E 10, "Standard Test Method for Brinell Hardness of Metallic Materials" (DoD adopted).

3.5 Fillets. Fillets shall be R .015 maximum.

3.6 Edges. Unless otherwise specified in the acquisition order edges shall be broken .003 - .015, except serrations (see 7.4(d)).

3.7 Tolerances. Linear dimensions shall be  $\pm 0.005$ , angular dimensions shall be  $\pm 2^\circ$ .

## 4. REGULATORY REQUIREMENTS

4.1 Recovered materials. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

## 5. PRODUCT CONFORMANCE PROVISIONS

5.1 Product conformance. The products provided shall meet the salient characteristics of this commercial item description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The government reserves the right to require proof of such conformance.

5.2 Market acceptability. The product offered must have been previously sold either to the government or on the commercial market.

## 6. PACKAGING

6.1 Preservation, packing, and marking. For acquisition purposes, the serrated lock rings shall be preserved, packed, and marked as specified in the acquisition order (see 7.4(e)).

## 7. NOTES

### 7.1 Sources of documents.

7.1.1 Government documents. Copies of the FAR may be obtained from the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.

7.1.2 ASME standards. Copies of ASME standards may be obtained from the American Society of Mechanical Engineers, 345 East 47th Street, New York, NY 10017-2392.

7.1.3 ASTM standards. Copies of ASTM standards may be obtained from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

7.1.4 SAE standards. Copies of SAE standards may be obtained from the Society of Automotive Engineers, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

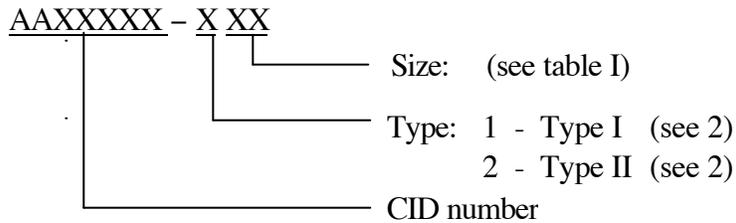
7.2 National stock number (NSN). The NSNs listed in table II are assigned for the listed product types and sizes (see table I). Other NSNs may also correspond with this document.

TABLE II. Assigned NSNs.

NSN	Type	Size Code
5365-01-047-8596	I	03
5365-00-405-7576	I	04
5365-00-543-6932	I	05
5365-00-421-9083	I	06
5365-01-020-6297	I	08
5365-00-218-4927	I	09
5365-00-218-4929	I	12
5365-00-187-9014	I	14
5365-00-136-0184	II	02
5365-01-040-5223	II	01
5365-01-012-7597	II	04
5365-01-008-9632	II	06

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7.3 Part or identification number (PIN). The following part or identification numbering procedure is for government purposes and does not constitute a requirement for the contractor.



7.4 Ordering data. Acquisition documents must specify the following information:

- a. CID document number, revision, and CID PIN
- b. Product classification type (see 2) and size (see table I)
- c. Protective finish, zinc, if cadmium plating is not required (see 3.2.1.1)
- d. Edges, if different (see 3.6)
- e. Packaging requirements (see 6.1)

**MILITARY INTERESTS:**

Custodians:

Army - AR  
Navy - AS  
Air Force - 99

Reviewers:

Army - AT, AV, CR,  
Navy - MC  
Air Force - 82  
NSA - NS

**CIVIL AGENCY  
COORDINATING ACTIVITY:**

GSA - 7FXE

Preparing activity:

DLA - GS

(Project 5365-0014)