

INCH-POUND

A-A-59561

23 June 2000

SUPERSEDING

MIL-S-70334/1

27 February 1987

COMMERCIAL ITEM DESCRIPTION

SHIM, SOLID, ROUND

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 shims to be used for maintaining a predetermined distance between two surfaces.
2. **CLASSIFICATION.** The shims shall be similar to that shown in figure 1 and classified by the types listed below and by the sizes listed in table I. The type and size shall be specified in the acquisition order (see 7.4(b)).

- Type I - Aluminum alloy, anodized
- Type II - Aluminum alloy, chemically treated
- Type III - Brass, black chemical finish
- Type IV - Corrosion resistant steel (cres), passivated
- Type V - Carbon steel, cadmium plated

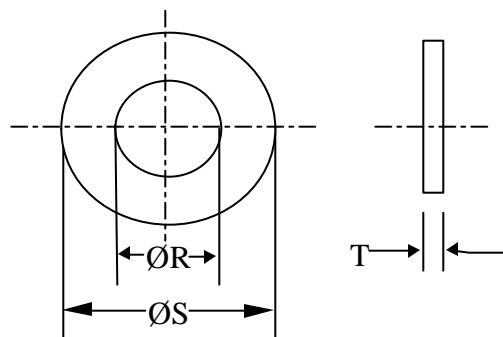


FIGURE 1. Shim, solid, round.

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

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TABLE I. Size codes and dimensions.

| Thickness (T) | | | | | | | | | | | |
|---------------|-------|-------|----------|-------|-------|----------|--------|--------|----------|-------|-------|
| T = .001 | | | T = .005 | | | T = .010 | | | T = .013 | | |
| Size | ØR | ØS | Size | ØR | ØS | Size | ØR | ØS | Size | ØR | ØS |
| 0001 | 0.088 | 0.153 | 0050 | 0.100 | 0.188 | 0087 | 0.093 | 0.187 | 0140 | 0.128 | 0.315 |
| 0002 | 0.125 | 0.187 | 0051 | 0.127 | 0.218 | 0088 | 0.094 | 0.205 | 0141 | 0.199 | 0.305 |
| 0003 | 0.187 | 0.500 | 0052 | 0.128 | 0.281 | 0089 | 0.128 | 0.315 | 0142 | 0.320 | 0.425 |
| 0004 | 0.190 | 0.246 | 0053 | 0.130 | 0.188 | 0090 | 0.156 | 0.250 | 0143 | 0.502 | 0.750 |
| 0005 | 0.252 | 0.344 | 0054 | 0.190 | 0.344 | 0091 | 0.198 | 0.450 | T = .014 | | |
| 0006 | 0.447 | 0.625 | 0055 | 0.252 | 0.344 | 0092 | 0.199 | 0.305 | Size | ØR | ØS |
| T = .002 | | | 0056 | 0.255 | 0.390 | 0093 | 0.234 | 0.500 | 0144 | 0.128 | 0.315 |
| Size | ØR | ØS | 0057 | 0.317 | 0.470 | 0094 | 0.252 | 0.308 | 0145 | 0.198 | 0.450 |
| 0007 | 0.128 | 0.250 | 0058 | 0.377 | 0.498 | 0095 | 0.252 | 0.344 | 0146 | 0.210 | 0.510 |
| 0008 | 0.130 | 0.188 | 0059 | 0.393 | 0.627 | 0096 | 0.255 | 0.350 | 0147 | 0.324 | 0.520 |
| 0009 | 0.200 | 0.400 | 0060 | 0.415 | 0.470 | 0097 | 0.260 | 0.300 | 0148 | 0.630 | 0.781 |
| 0010 | 0.250 | 0.359 | 0061 | 0.503 | 0.625 | 0098 | 0.260 | 0.335 | 0149 | 1.110 | 1.250 |
| 0011 | 0.250 | 0.748 | 0062 | 0.600 | 0.740 | 0099 | 0.258 | 0.368 | T = .015 | | |
| 0012 | 0.275 | 0.360 | 0063 | 0.625 | 0.734 | 0100 | 0.281 | 0.500 | Size | ØR | ØS |
| 0013 | 0.275 | 0.750 | 0064 | 0.752 | 1.000 | 0101 | 0.284 | 0.544 | 0150 | 0.128 | 0.315 |
| 0014 | 0.393 | 0.627 | 0065 | 0.753 | 0.975 | 0102 | 0.312 | 0.415 | 0151 | 0.187 | 0.250 |
| 0015 | 0.395 | 0.930 | 0066 | 1.000 | 1.250 | 0103 | 0.320 | 0.425 | 0152 | 0.235 | 0.290 |
| 0016 | 0.399 | 0.555 | 0067 | 1.432 | 1.623 | 0104 | 0.324 | 0.520 | 0153 | 0.265 | 0.500 |
| 0017 | 0.500 | 0.700 | 0068 | 1.650 | 1.840 | 0105 | 0.377 | 0.498 | 0154 | 0.380 | 0.625 |
| 0018 | 0.753 | 0.975 | 0069 | 2.190 | 2.438 | 0106 | 0.378 | 0.810 | 0155 | 0.520 | 0.660 |
| 0019 | 0.795 | 0.867 | 0070 | 3.050 | 3.313 | 0107 | 0.380 | 0.585 | 0156 | 0.750 | 0.990 |
| 0020 | 0.900 | 0.995 | T = .006 | | | 0108 | 0.393 | 0.627 | 0157 | 0.752 | 1.000 |
| 0021 | 1.000 | 1.375 | Size | ØR | ØS | 0109 | 0.531 | 1.000 | 0158 | 1.031 | 1.281 |
| 0022 | 1.432 | 1.623 | 0071 | 0.200 | 0.510 | 0110 | 0.753 | 0.975 | T = .016 | | |
| 0023 | 2.190 | 2.438 | 0072 | 0.280 | 0.500 | 0111 | 0.840 | 1.310 | Size | ØR | ØS |
| 0024 | 2.435 | 2.873 | 0073 | 0.280 | 0.760 | 0112 | 1.078 | 1.375 | 0159 | 0.094 | 0.160 |
| 0025 | 3.050 | 3.313 | 0074 | 0.320 | 0.700 | 0113 | 1.320 | 2.000 | 0160 | 0.109 | 0.245 |
| T = .003 | | | 0075 | 0.681 | 1.000 | 0114 | 2.182 | 2.750 | 0161 | 0.128 | 0.375 |
| Size | ØR | ØS | 0076 | 0.800 | 0.980 | 0115 | 2.190 | 2.438 | 0162 | 0.140 | 0.312 |
| 0026 | 0.096 | 0.140 | 0077 | 0.812 | 2.000 | 0116 | 2.435 | 2.873 | 0163 | 0.150 | 0.300 |
| 0027 | 0.125 | 0.250 | 0078 | 1.020 | 1.325 | 0117 | 2.515 | 3.225 | 0164 | 0.156 | 1.375 |
| 0028 | 0.166 | 0.250 | 0079 | 1.080 | 1.490 | 0118 | 2.598 | 3.313 | 0165 | 0.160 | 0.205 |
| 0029 | 0.190 | 0.265 | 0080 | 1.320 | 2.050 | 0119 | 3.050 | 3.313 | 0166 | 0.166 | 0.250 |
| 0030 | 0.250 | 0.359 | 0081 | 3.515 | 4.015 | 0120 | 6.000 | 6.250 | 0167 | 0.175 | 0.245 |
| 0031 | 0.252 | 0.344 | T = .007 | | | 0121 | 10.930 | 12.312 | 0168 | 0.200 | 0.313 |
| 0032 | 0.313 | 1.000 | Size | ØR | ØS | T = .011 | | | 0169 | 0.203 | 0.265 |
| 0033 | 0.377 | 0.498 | 0082 | 0.377 | 0.498 | Size | ØR | ØS | 0170 | 0.203 | 0.625 |
| 0034 | 0.377 | 0.625 | 0083 | 0.377 | 0.625 | 0122 | 0.128 | 0.315 | 0171 | 0.261 | 0.497 |
| 0035 | 0.393 | 0.627 | T = .008 | | | 0123 | 0.255 | 0.390 | 0172 | 0.390 | 0.465 |
| 0036 | 0.415 | 0.470 | Size | ØR | ØS | 0124 | 0.312 | 0.495 | 0173 | 0.530 | 1.000 |
| 0037 | 0.570 | 0.875 | 0084 | 0.100 | 0.200 | T = .012 | | | 0174 | 0.594 | 0.734 |
| 0038 | 0.753 | 0.975 | 0085 | 1.758 | 3.250 | Size | ØR | ØS | 0175 | 0.644 | 0.844 |
| 0039 | 1.000 | 1.375 | 0086 | 1.891 | 2.469 | 0125 | 0.128 | 0.250 | 0176 | 0.752 | 1.250 |
| 0040 | 1.250 | 1.375 | | | | 0126 | 0.128 | 0.315 | 0177 | 1.202 | 1.310 |
| 0041 | 1.432 | 1.623 | | | | 0127 | 0.198 | 0.450 | 0178 | 2.190 | 2.480 |
| 0042 | 2.190 | 2.438 | | | | 0128 | 0.199 | 0.305 | | | |
| 0043 | 2.435 | 2.873 | | | | 0129 | 0.250 | 0.480 | | | |
| 0044 | 3.050 | 3.313 | | | | 0130 | 0.252 | 0.344 | | | |
| T = .004 | | | | | | 0131 | 0.255 | 0.531 | | | |
| Size | ØR | ØS | | | | 0132 | 0.258 | 0.368 | | | |
| 0045 | 0.135 | 0.234 | | | | 0133 | 0.320 | 0.425 | | | |
| 0046 | 0.170 | 0.360 | | | | 0134 | 0.324 | 0.520 | | | |
| 0047 | 0.195 | 0.468 | | | | 0135 | 0.500 | 0.875 | | | |
| 0048 | 0.252 | 0.344 | | | | 0136 | 1.210 | 1.550 | | | |
| 0049 | 0.375 | 0.500 | | | | 0137 | 2.002 | 2.490 | | | |
| | | | | | | 0138 | 2.002 | 2.740 | | | |
| | | | | | | 0139 | 3.125 | 3.675 | | | |

3. SALIENT CHARACTERISTICS

3.1 Tolerances. Unless otherwise specified in the acquisition order (see 7.4(c)), tolerances for the shims listed in table I shall be as shown below:

| <u>Thickness</u> | <u>Outside diameter</u> |
|----------------------------|-------------------------------|
| .001 to .005 - $\pm 10\%$ | Up to 1" - $\pm .003$ |
| .006 to .010 - $\pm .0005$ | Over 1" up to 3" - $\pm .005$ |
| .011 to .016 - $\pm .001$ | Over 3" - $\pm .010$ |

3.2 Materials.

3.2.1 Type I and II shims shall be aluminum alloy 5052, temper H38, unified numbering system (UNS) A95052 in accordance with Society of Automotive Engineers (SAE) AMS QQ-A-250/8A, "Aluminum Alloy 5052, Plate and Sheet" (DoD Adopted), or with the American Society for Testing and Materials (ASTM) B 209, "Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate" (DoD Adopted).

3.2.2 Type III shims shall be brass alloy 260, temper half-hard, UNS C2600 in accordance with the ASTM B 36/B 36M, "Standard Specification for Brass Plate, Sheet, Strip, and Rolled Bar" (DoD Adopted), or with ASTM B 121/B 121M, "Standard Specification for Leaded Brass Plate, Sheet, Strip, and Rolled Bar" (DoD Adopted).

3.2.3 Type IV shims shall be corrosion resistant steel (cres) type 302, UNS S30200, temper 1/4 hard in accordance with one of the following documents:

| | |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| ASTM A 240/A 240M | "Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels" (DoD Adopted). |
| ASTM A 666 | "Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar" (DoD Adopted). |
| ASTM A 693 | "Standard Specification for Precipitation-Hardening Stainless and Heat-Resisting Steel Plate, Sheet, Sheet, and Strip" (DoD Adopted). |

3.2.4 Type V shims shall be carbon steel, grade 1010 through 1015, in accordance with ASTM A 109/A 109M, "Standard Specification for Steel, Strip, Carbon (0.25 Maximum Percent), Cold-Rolled" (DoD Adopted).

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3.3 Protective finish or surface treatment.

3.3.1 Type I shims shall be anodic coated in accordance with ASTM B 580, "Standard Specification for Anodic Oxide Coatings on Aluminum" (DoD Adopted).

3.3.2 Type II shims shall be chemically treated in accordance with MIL-C-5541, "Chemical Conversion Coatings on Aluminum and Aluminum Alloys".

3.3.3 Type III shims shall be protective finished as specified in the acquisition order (see 7.4(d)).

3.3.4 Type IV shims shall be cleaned, descaled, and passivated in accordance with ASTM A 967, "Standard Specification for Chemical Passivation Treatments for Stainless Steel Parts" (DoD Adopted).

3.3.5 Type V shims shall be cadmium plated in accordance with ASTM B 766, "Standard Specification for Electrodeposited Coatings of Cadmium" (DoD Adopted).

3.4 Surface roughness. The product shall have a maximum surface roughness of 63 microinches, determined in accordance with American Society of Mechanical Engineers (ASME) B46.1, "Surface Texture (Surface Roughness, Waviness, and Lay)" (DoD Adopted).

3.5 Cracks. The shims shall be free from cracks, flaws, and pits in any location. A crack is a clean crystalline fracture passing through or across the grain boundaries without inclusion of foreign elements.

3.6 Workmanship. The shims shall be free from surface contamination, tool marks, and other imperfections which may adversely affect usability.

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 products shall be preserved, packed, and marked as specified in the acquisition order (see 7.4(e)).

7. NOTES

7.1 Sources of documents.

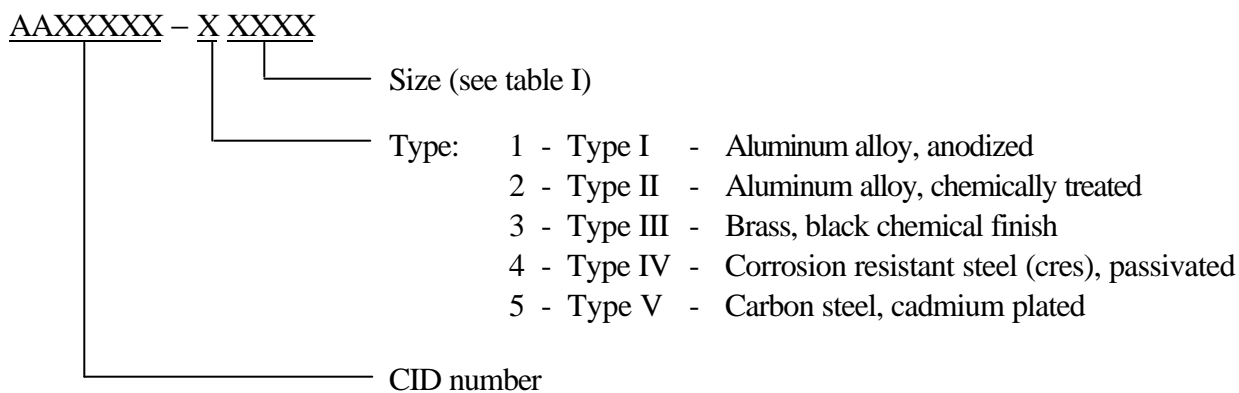
7.1.1 Government documents. Copies of the FAR and military specifications may be obtained from the U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328. Electronic copies of military specifications may be obtained from <http://astimage.daps.dla.mil/quicksearch/>.

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.

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 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.



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

TABLE II. Assigned NSNs.

| Type | Size code | NSN |
|------|-----------|------------------|
| IV | 0002 | 5365-01-407-7890 |
| IV | 0004 | 5365-01-407-7900 |
| IV | 0008 | 5365-01-361-9004 |
| IV | 0017 | 5365-01-334-1336 |
| IV | 0028 | 5365-01-407-7897 |
| IV | 0037 | 5365-01-339-4032 |
| IV | 0053 | 5365-01-407-7892 |
| IV | 0090 | 5365-01-407-7896 |
| IV | 0125 | 5365-01-407-7899 |
| IV | 0151 | 5365-01-407-7898 |
| IV | 0157 | 5365-01-379-5133 |

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

- a. CID document number, revision, and CID PIN
- b. Product type (see 2) and size (see table I)
- c. Tolerance, if different (see 3.1)
- d. Type III shim protective finish (see 3.3.3)
- e. Packaging requirements (see 6.1)

MILITARY INTERESTS:

Custodian:
Army - AR

Reviewers:
Army - AV, MI

CIVIL AGENCY
COORDINATING ACTIVITY:

GSA - 7FXE

Preparing activity:
DLA - GS

(Project 5365-0010)