

Submitted for recognition as an American National Standard

Cylinders, Carbon Dioxide Filled, Technical

FSC 4220

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1. SCOPE:

1.1 Scope:

This specification covers the requirements for the procurement of three types of puncturable-seal carbon dioxide filled cylinders.

1.2 Classification:

The carbon dioxide filled cylinders shall be furnished in the following types, as specified (see 6.1 and 6.2):

Type I - 8 gram capacity

Type II - 12 gram capacity

Type III - 16 gram capacity

2. APPLICABLE DOCUMENTS:

- 2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein:

SPECIFICATIONS

Federal

BB-C-101	Carbon Dioxide (CO ₂); Technical and U.S.P
QQ-P-416	Plating, Cadmium (Electrodeposited)
TT-I-558	Ink, Marking Stencil, Opaque, for Nonporous Surfaces (Metals, Glass, etc.)
PPP-B-566	Boxes, Folding, Paperboard
PPP-B-636	Box, Fiberboard
PPP-B-676	Boxes, Set-Up
PPP-T-45	Tape, Gummed, Reinforced and Plain, for Sealing and Securing

Military

MIL-I-23145	Inflation Assemblies, Lift Preserver
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STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage

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2.1 (Continued):

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications:

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on date of invitation for bids or request for proposal shall apply.

National Bureau of Standards

Handbook H28 Screw-Threads for Federal Services

(Application for copies should be addressed to the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402.)

Uniform Classification Committee

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 202, Union Station, 516 West Jackson Boulevard, Chicago, Illinois 60606.)

3. REQUIREMENTS:

3.1 First article:

Unless otherwise specified, the carbon dioxide filled cylinders furnished under this specification shall be a product which has been inspected and has passed the first article inspection specified in 4.3 through 4.3.2.

3.2 Materials:

Materials shall conform to applicable specifications and shall be as specified herein. Materials which are not covered by specifications, or which are not specifically described herein, shall be of the best quality, of the lightest practicable weight and suitable for the purpose intended.

3.2.1 Cylinders: The cylinders shall be fabricated from steel of a grade and composition suitable for the purpose intended.

3.2.2 Sealing cap: The sealing cap shall be fabricated from AISI C1008 or C1010 low carbon (not alloy) steel.

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3.2.3 Carbon dioxide: The carbon dioxide shall conform to BB-C-101, Grade B, Type I.

3.2.4 Marking ink: The marking ink shall conform to TT-I-558, The color shall be dark blue or black.

3.3 Design and construction:

The design and construction of the carbon dioxide filled cylinders and their puncturable sealing caps shall conform to Figure 1 and Figure 2. The wall thickness for the cylinders shall be such as to withstand the performance requirements of this specification.

3.3.1 Construction details: The cylinders shall be made from a seamless tube with a rounded bottom and a gradual elongated narrow neck threaded at the top. The cylinders shall be filled with the carbon dioxide through an opening in the top. The top end shall have a smooth flat surface and the opening in the top shall be welded closed with the sealing cap in place. The sealing cap shall be capable of being punctured by the piercing pin of the inflation assembly conforming to MIL-I-23145, Type I, so as to release the carbon dioxide charge.

3.3.2 Gas charge: The filled cylinders shall each contain a charge of the carbon dioxide specified in 3.2.3, as follows:

Type I - 7.9 grams, min.; 8.8 grams, max.

Type II - 11.1 grams, min.; 12.5 grams, max.

Type III - 15.0 grams, min.; 17.0 grams, max.

3.3.3 Sealing of cylinders: Each cylinder shall be provided with a puncturable sealing cap as shown on Figure 2. The use of steel alloy is not permitted (see 3.2.2). The opening in the top of the cylinder shall be sealed closed by securely welding the sealing cap to the cylinder. The puncturable area of the sealing cap shall have a minimum diameter of 0.094 inch and shall be 0.011 $\pm$ 0.003 inch in thickness. The maximum distance of the puncturable area of the sealing cap from the top of the cylinder shall be 0.010 inch.

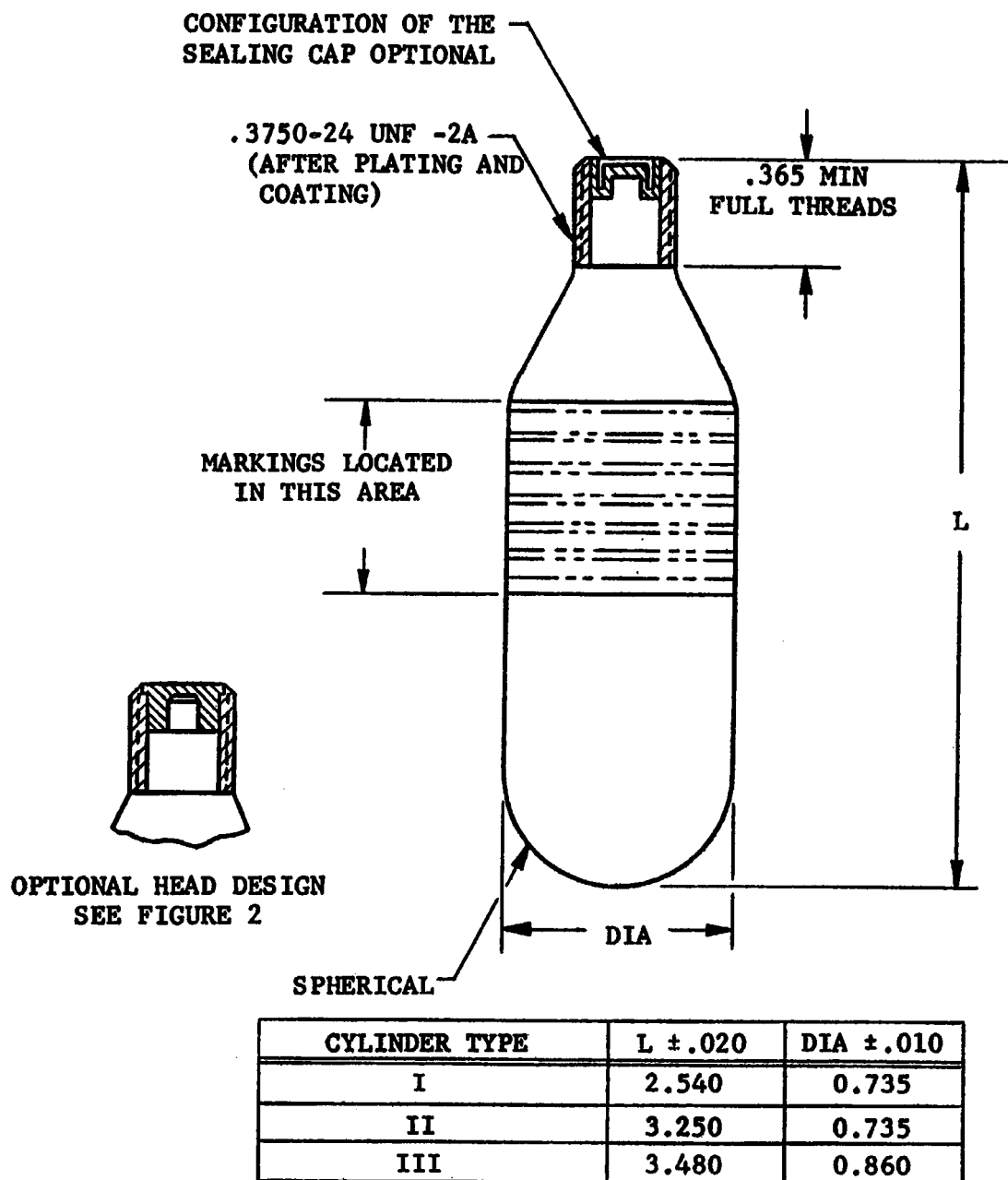
3.3.4 Threaded portion: The external upper elongated portion of the cylinder shall be threaded with 3/8-24UNF-2A threads (after plating and coating) conforming to NBS Handbook H28 (see Figure 1).

3.4 Finish:

Each cylinder, including the threads, shall be cadmium plated in accordance with QQ-P-416, Type II, Class 3. The exposed surface shall be reasonably smooth, without any sign of bulging or deformation, and shall be free from pit marks and cracks.

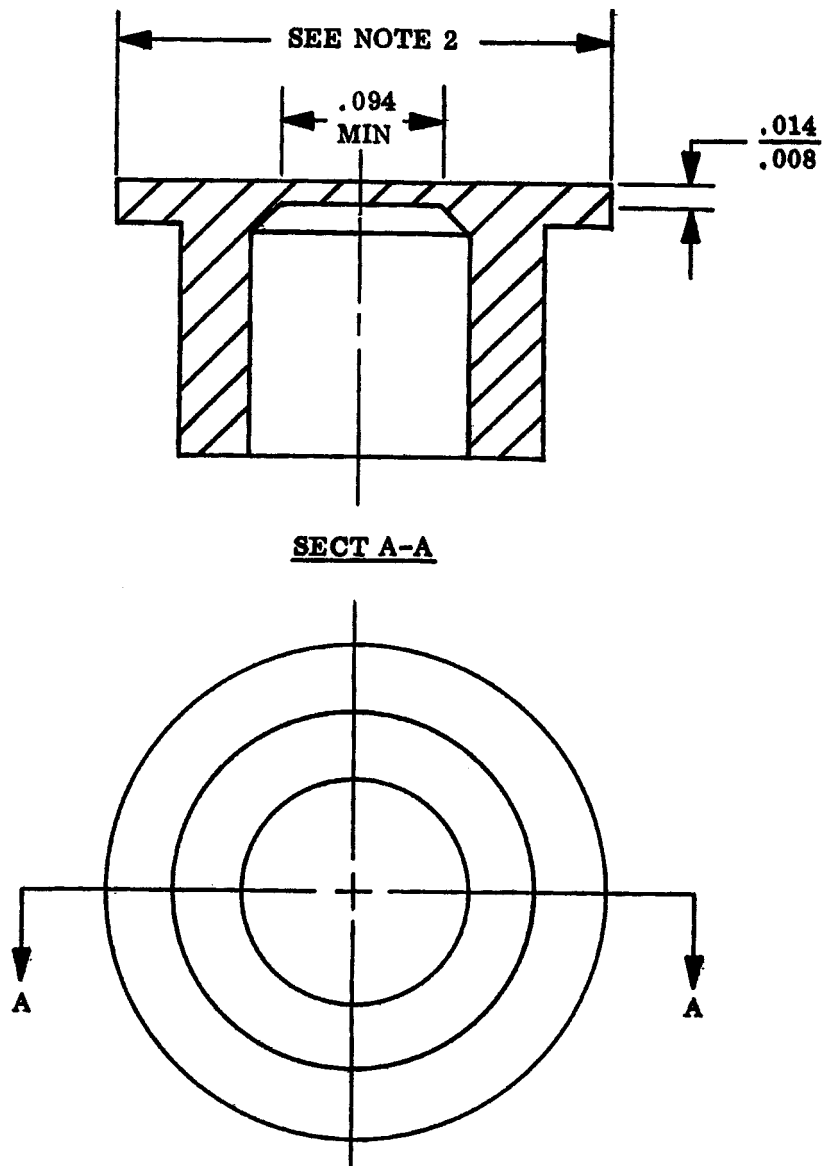
3.5 Color:

The color of the cylinder shall be the resultant color of the finish (3.4) and shall contrast the color of the marking ink.



DIMENSIONS IN INCHES.

FIGURE 1. CARBON DIOXIDE CYLINDER



NOTES:

1. DIMENSIONS IN INCHES
2. OUTSIDE DIAMETER OF FLANGE OPTIONAL, PROVIDING THE REQUIREMENTS OF 3.3.3 ARE MET.

FIGURE 2. SEALING CAP