NOTICE OF CANCELATION

F-C-2916
NOTICE 1
6 September 2001

FEDERAL SPECIFICATION

CAPS, VENT, FUEL STORAGE TANK

F-C-2916, dated 12 June 1997, is hereby canceled without replacement.

Custodians:
Navy - YD
Air Force - 99

Preparing activity:
Navy - YD

Review Activities:
Air Force - 82, 84

AMSC N/A **FSC 5430**

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[INCH-POUND]
F-C-2916
June 12, 1997
SUPERSEDING
MIL-C-19902C
30 September 1986

FEDERAL SPECIFICATION

CAPS, VENT, FUEL STORAGE TANK

The General Services Administration has authorized the use of this specification by all Federal agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers four types of fuel storage tank vent caps with screen covered vent openings. The vent cap fits on the vent pipe by means of a threaded inlet or slip-over inlet.

1.2 Classification. Vent caps covered by this specification shall be of the following types, sizes, and styles as specified (see 6.2).

TYPE

Type I - Vapors are directed downward through either two screened outlets or sectionalized outlets.

Type II - Vapor recovery vent cap. Vapors are directed upward through a screened circular outlet. Rain is prevented from entering the screened outlet by a rainhood with drain spouts. The cap is equipped with a 0.5-inch (12.7 millimetre (mm)) restricted opening for vapor recovery.

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data which may improve this document should be sent to: Commanding Officer (Code 15E2), Naval Construction Battalion Center, 1000 23rd Avenue, Port Hueneme, CA 93043-4301, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

Type III - Vapors are directed upward through a screened circular outlet. Rain is prevented from entering the screened outlet by a rainhood with drain spouts.

Type IV - Vapor recovery vent cap. Vapors are directed upward through a screened circular outlet. Rain is prevented from entering the screened outlet by a rainhood with drain spouts. The cap is equipped with a spring loaded pressure vacuum poppet for vapor recovery.

SIZE

Size 1 - For 1.25-inch (32 mm) pipe size (ips) National Pipe Taper Thread (NPT) vent pipe (size 1 not applicable for type IV cap).

Size 2 - For 1.5-inch (40 mm) ips NPT vent pipe (size 2 not applicable for type IV cap).

Size 3 - For 2-inch (50 mm) ips NPT vent pipe (size 3 not applicable to all types of caps specified herein).

Size 4 - For 3-inch (80 mm) ips NPT vent pipe (size 4 not applicable for type IV cap).

STYLE

Style A - Threaded inlet.

Style B - Slip-over inlet.

2. APPLICABLE DOCUMENTS

2.1 Government publications. The following documents, of the issues in effect on the date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

Federal Standard

FED-STD-H28 - Screw-Thread Standards for Federal Services.

(Copies of federal standards required by contractors in connection with specific procurement functions are obtained from Defense Automated Printing Services, Attn: DoDSSP, Building 4D, 700 Robbins Avenue, Philadelphia, PA. 19111-5094.)

2.2 Other publications. The following documents form a part of this specification to the extent specified herein. Unless a specific issue is identified, the issue in effect on date of invitation for bids or request for proposal shall apply.

AMERICAN NATIONAL STANDARDS INSTITUTE, INC. (ANSI)

ANSI - Z1.4 Sampling Procedures and Tables for Inspection by Attributes.

(Private sector and civil agencies may purchase copies of these voluntary standards from the, American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.)

ASTM

ASTM A 153 - Zinc Coating (Hot Dip) on Iron and Steel Hardware.
ASTM B 580 - Anodic Oxide Coatings on Aluminum.

(Private sector and civil agencies may purchase copies of these voluntary standards from the American Society for Testing and Materials, 100 Barr Harbor Dr., West Conshohocken, PA 19428-2959.)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 30 - Flammable and Combustible Liquids Code.

(Private sector and civil agencies may purchase copies of these voluntary standards from the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269.)

(DoD activities may obtain copies of those adopted voluntary standards listed in the DoD Index of Specifications and Standards free of charge from Defense Automated Printing Services, Attn: DoDSSP, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited, the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Standard commercial product. Each vent cap of the same classification shall, as a minimum, be in accordance with the requirements of this specification and shall be the manufacturer's standard commercial product. Additional or better features which are not specifically prohibited by this specification, but which are a part of the manufacturer's standard commercial product, shall be included in the vent cap being furnished. A standard commercial product is a product which has been sold or is being currently offered for sale in the commercial market through advertisements or manufacturer's catalogs, or brochures, and represents the latest production model.

3.2 First article. When specified (see 6.2), the contractor shall furnish a vent cap of the type, size, and style as required for first article inspection and approval (see 4.2.1 and 6.6).

3.3 Materials. Materials used shall be free from defects which would adversely affect the performance or maintainability of individual components or of the overall assembly. Materials not specified herein shall be of the same quality used for the intended purpose in commercial practice. Unless otherwise specified herein, all equipment, material, and articles incorporated in the work covered by this specification are to be new and fabricated using materials produced from recovered materials to the maximum extent possible without jeopardizing the intended use. The term "recovered materials" means materials which have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. Unless otherwise specified, none of the above shall be interpreted to mean that the use of used or rebuilt products are allowed under this specification.

3.3.1 Vent cap body. Unless otherwise specified (see 6.2), the vent cap body shall be fabricated from aluminum or cast iron. When aluminum is used, the vent cap body shall be anodized in accordance with ASTM B 580, type A, and when cast iron is used, the vent cap body shall be zinc-coated in accordance with ASTM A 153. The vent cap body shall be so treated as to be thoroughly coated with a smooth, bright adherent solid surface of zinc and shall be zinc-coated both inside and outside. The vent cap shall be coated before threading.

3.4 Interchangeability. All vent caps of the same classification furnished with similar options under a specific contract shall be identical to the extent necessary to ensure interchangeability of component parts, assemblies, accessories, and spare parts.

3.5 Construction.

3.5.1 Type I. The pipe (inlet) end shall provide for attachment to the vent pipe by either internal NPT for style A, or by a slip-over fit for style B. The style A vent shall be provided with flat surfaces or lugs at the base for tightening with a smooth jaw or spanner wrench. The style B shall be provided with set screw(s) for tightening onto the vent pipe. The tightening set screw(s) on the style B vent shall be of corrosion-resistant steel. The vent outlet(s) shall be of proportionate size to the inlet and fitted with a screen. The screen shall be 40 mesh size of brass or stainless steel. The screen shall be held securely in position.

3.5.2 Type II. The pipe (inlet) end shall provide for attachment to the vent pipe by either internal NPT for style A, or by a slip-over fit for style B. The style A vent shall be provided with flat surfaces of lugs at the base for tightening with a smooth jaw or spanner wrench. The style B shall be provided with set screw(s) for tightening onto the vent pipe. The tightening set screw(s) on the style B vent shall be of corrosion-resistant steel. The vent outlet(s) shall be of proportionate size to the inlet, fitted with a screen cover. The screen cover shall be 40 mesh size of brass or stainless steel and held securely in position. The 0.5-inch (12.7 mm) restricted opening for the vapor recovery connection shall be provided with a plug or closure when the opening is not used in the installation. The rainhood shall be constructed so as to prevent entry of rain into the vent outlet. The vent shall be constructed so as to direct vapors upward in conformance with NFPA 30.

3.5.3 Type III. The pipe (inlet) end shall provide for attachment to the vent pipe by either internal NPT for style A, or by a slip-over fit for style B. The style A vent shall be provided with flat surfaces or lugs at the base for tightening with a smooth jaw or spanner wrench. The style B shall be provided with set screw(s) for tightening onto the vent pipe. The tightening set screw(s) on the style B shall be of corrosion-resistant steel. The vent outlet(s) shall be of proportionate size to the inlet, fitted with a screen cover. The screen cover shall be 40 mesh size of brass or stainless steel and held securely in position. The rainhood shall be constructed so as to prevent entry of rain into the vent outlet. The vent shall be constructed so as to direct vapors upward in conformance with NFPA 30.

3.5.4 Type IV. The pipe (inlet) end shall provide for attachment to the vent pipe by either internal NPT for style A, or by a slip-over fit for style B. The style A vent shall be provided with flat surfaces or lugs at the base for tightening with a smooth jaw or spanner wrench. The style B shall be provided with set screw(s) for tightening onto the vent pipe. The tightening set screw(s) on the style B vent shall be of corrosion-resistant steel. The vent outlet(s) shall be of proportionate size to the inlet, fitted with a screen cover. The screen cover shall be 40 mesh size of brass or stainless steel and held securely in position. The pressure setting shall be either 8 ounces, 12 ounces, or 16 ounces (245.8 grams, 373.2 grams, or 497.6 grams) as specified (see 6.2). The vacuum setting shall be 0.5 ounce (15.5 grams). The rainhood shall be constructed so as to prevent entry of rain into the vent outlet. The vent shall be constructed so as to direct vapors upward in conformance with NFPA 30.

3.5.5 Adapter. When the 1.25-inch (31.75 mm) vent cap is required but is not available, and when specified (see 6.2), a threaded reducer may be substituted as part of the vent cap to adapt the 1.5-inch (50.8 mm) vent cap to the 1.25-inch (31.75 mm) vent pipe. Unless otherwise specified (see 6.2), the adapter shall be fabricated from corrosion-resistant metal or cast iron which is zinc-coated to prevent corrosion.

3.5.6 Threads. All pipe connection and screw threads shall be right hand and conform to FED-STD-H28.

3.6 Identification marking. Identification shall be permanently and legibly marked directly on the vent cap or on a corrosion-resisting metal plate securely attached to the vent cap at the source of manufacture. Identification shall include the manufacturer's model and serial number, name, and trade mark to be readily identifiable to the manufacturer.

3.7 Workmanship.

3.7.1 Welding. Welding procedures shall be in accordance with a nationally recognized welding code. The surface of parts to be welded shall be free from rust, scale, paint, grease, or other foreign matter. Welds shall be sufficient size and shape to develop the full strength of the parts connected by the welds. Welds shall transmit stress without permanent deformation or failure when the parts connected by the weld are subjected to proof and service loadings.

3.7.2 Fabrication. All castings shall be sound and free from patching, misplaced coring, warping, or any other defect which reduces the castings ability to perform its intended function.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection. Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements (examinations and tests) as specified herein. Except as otherwise specified in the contract or purchase order, the contractor may use his or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to ensure supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All items shall meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in this document shall not relieve the contractor of the responsibility of ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to accept defective material.

4.1.2 Component and material inspection. Components and materials shall be inspected in accordance with all the requirements specified herein and in applicable referenced documents.

4.2 Classification of inspections. The inspection requirements specified herein are classified as follows:

a. First article inspection (see 4.2.1).
b. Quality conformance inspection (see 4.2.2).

4.2.1 First article inspection. The first article inspection shall be performed on one complete vent cap when a first article sample is required (see 3.2 and 6.2). This inspection shall include the examination of 4.4. The first article may be either a first production item or a standard production item from the supplier's current inventory, provided the item meets the requirements of the specification and is representative of the design, construction, and manufacturing technique applicable to the remaining items to be furnished under the contract.

4.2.2 Quality conformance inspection. The quality conformance inspection shall include the examination of 4.4. This inspection shall be performed on the samples selected in accordance with 4.3.

4.3 Sampling. Sampling and inspection procedures shall be in accordance with ANSI - Z1.4. The unit of product shall be one complete vent cap. All vent caps offered for delivery at one time

shall be considered a lot for the purpose of inspection. The inspection level shall be level II and the Acceptable Quality Level shall be 4.0 percent defective. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units, and resubmit for a complete reinspection. Resubmitted lots shall be reinspected using tightened inspection. If the rejected lot was screened, reinspection shall be limited to the defect causing rejection. If the lot was reprocessed, reinspection shall be performed for all defects. Rejected lots shall be separated from new lots, and shall be clearly identified as reinspected lots.

4.4 Examination. The first article, when furnished, and each sample selected in accordance with 4.3 shall be examined for compliance with the requirements in section 3 of this specification. Any redesign or modification of the contractor's standard product to comply with specified requirements, or any necessary redesign or modification following failure to meet specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all visual examinations and dimensional measurements. Noncompliance with any specified requirement shall constitute one defect.

5. PACKAGING

5.1 Packaging requirements. The preservation, packing, and marking shall be as specified in the contract or order.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

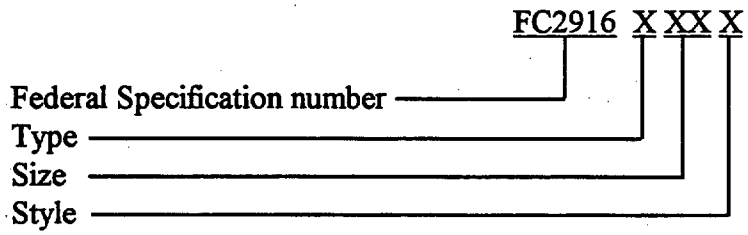
6.1 Intended use. The types I and III vent caps are intended for venting of fuel storage tanks where vapor recovery is not required. The type I is intended for venting to the atmosphere and venting downward is permitted and the type III is intended for venting to the atmosphere and venting upward is required. Types II and IV are intended for venting of fuel storage tanks where vapor venting is required to be upward and vapors are to be recovered. Venting is released to the atmosphere or recovered by provisions incorporated in the design of the types II and IV for connecting to vapor recovery systems when vapor recovery during filling operations of fuel storage tanks are required. The type IV is available only in the size 3 (2-inch (50.8 mm)). Style A could also be for JP-5, whereas style B would have to be used for the low flash fuels like gasoline or JP-4. These fill caps should only be used on jet fuel tanks which have submerged fill lines to prevent the generation of static electricity.

6.2 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number, and data of this specification.
b. Type, size, and style of vent cap required (see 1.2).
c. When a first article sample and inspection is required (see 3.2 and 4.2.1).
d. Type of material for vent cap body, if other than as specified (see 3.3.1).
e. Pressure settings for the type IV vent cap (see 3.5.4).

f. When a threaded reducer may be substituted as part of the vent cap. Adapter material, if other than as specified (see 3.5.5).

6.3 Part or Identifying Numbers (PINs). The specification number, type, size and style are combined to form PINs for fuel storage tank vent caps covered by this document (see 1.2). PINs for the vent caps are established as follows:



6.3.1 Types, sizes, and styles. The type and size is identified by a three-digit number. The first digit identifies the type and the last two digits identify the size. The style is identified by a single alpha character. Table I identifies the part number.

6.4 Supersession data. This specification replaces Military Specification MIL-C-19902C dated 30 September 1986.

6.5 Classification cross reference. Classifications used in this specification (see 1.2) are identical to those found in the superseded Military Specification, MIL-C-19902C.

6.6 First article. When a first article inspection is required, the item will be tested and should be a first article sample or it may be a standard production item from the contractor's current inventory as specified in 4.2.1. The first article should consist of one unit. The contracting officer should include specific instruction in acquisition documents regarding arrangements for examination, test, and approval of the first article.

6.7 Subject-term (key word) listing.

Caps, vent, fuel storage tank
Vacuum pressure poppet
Vapor recovery
Vented

TABLE I. Type, size, and style to code number.

Type and size	Style	Code number
Type I		
Size 1	A	101A
	B	101B
Size 2	A	102A
	B	102B
Size 3	A	103A
	B	103A
Size 4	A	104A
	B	104B
Type II		
Size 1	A	201A
	B	201B
Size 2	A	202A
	B	202B
Size 3	A	203A
	B	203B
Size 4	A	204A
	B	204B
Type III		
Size 1	A	301A
	B	301B
Size 2	A	302A
	B	302B
Size 3	A	303A
	B	303B
Size 4	A	304A
	B	304B
Type IV		
Size 3 1/	A	403A
	B	403B

1/ The type IV is available only in the size 3.

6.8 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.

MILITARY INTERESTS:

Custodians:
Navy - YD1
Air Force - 99

Review Activities:
Navy - YD1
Air Force - 82, 84
DLA - CS

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA-FSS

DOT -ACO
GSA - 10FTE
GSA- FCAE

Preparing Activity:
Navy - YD1

(Project 5430-0245)

STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

INSTRUCTIONS

1. The preparing activity must complete blocks 1, 2, 3, and 8. In block 1, both the document number and revision letter should be given.
2. The submitter of this form must complete blocks 4, 5, 6, and 7.
3. The preparing activity must provide a reply within 30 days from receipt of the form.

NOTE: This form may not be used to request copies of documents, nor to request waivers, or clarification of requirements on current contracts. Comments submitted on this form do not constitute or imply authorization to waive any portion of the referenced document(s) or to amend contractual requirements.

I RECOMMEND A CHANGE:	1. DOCUMENT NUMBER F-C-2916	2. DOCUMENT DATE (YYMMDD) 970612

3. DOCUMENT TITLE
CAPS, VENT, FUEL STORAGE TANK

4. NATURE OF CHANGE *(Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)*

5. REASON FOR RECOMMENDATION

6. SUBMITTER

a. NAME *(Last, First, Middle Initial)*	b. ORGANIZATION	
c. ADDRESS *(Include Zip Code)*	d. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON *(if applicable)*	7. DATE SUBMITTED (YYMMDD)

8. PREPARING ACTIVITY

a. NAME G. M. KRALIK	b. TELEPHONE *Include Area Code)* (1) Commercial 805 982-5741 (2) AUTOVON 551-5741
c. ADDRESS *(Include Zip Code)* COMMANDING OFFICER, NCBC CODE 15E2R 1000 23RD AVENUE PORT HUENEME, CA 93043-4301	**IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT:** DEFENSE QUALITY AND STANDARDIZATION OFFICE 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22401-3466 Telephone (703)756-2340 AUTOVON 289-2340