

[INCH-POUND]
A-A-59440A
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SUPERSEDING
A-A-59440
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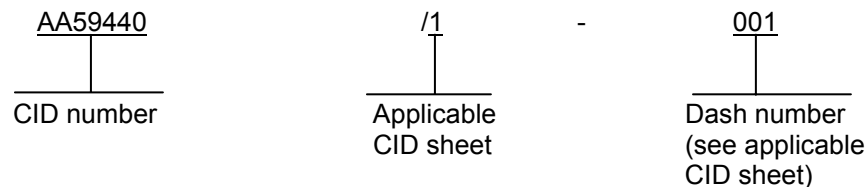
COMMERCIAL ITEM DESCRIPTION

COCKS, DRAIN, COCKS, PLUG, AND COCKS, SHUTOFF, SCREW STEM, BRASS, NPTF-1 THREADS, GENERAL REQUIREMENTS FOR

The General Services Administration has authorized the use of this Commercial Item Description (CID) for all federal agencies.

1. **SCOPE.** This CID covers the general requirements for cocks, drain, cocks, plug, and cocks, shutoff, screw stem, brass, NPTF-1 threads are covered in the individual CID sheets. Cocks, drain, cocks, plug and cocks, shutoff, screw stem, brass, NPTF-1 threads covered by this CID are intended for commercial/industrial applications.

2. **CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN).** This CID uses a classification system which is included in the Part Identification Number (PIN) as shown in the following example (see 7.1).



3. SALIENT CHARACTERISTICS.

3.1 Interface and physical dimensions. Cocks supplied to this CID shall be as specified on the applicable CID sheet. The liquids used need to be compatible with brass.

3.2 Pressure and temperature rating. All cocks shall meet the pressure rating in pounds per square inch gauge (psig) and temperature rating in Fahrenheit, in accordance with table I. These items are for use where pressures do not exceed 150 psig (10.34 bar) for water, oil and gas, (WOG) at 150°F (66°C) and steam at 351°F (177°C). CID's A-A-59440/1 and A-A-59440/2 are for nonflammable applications only.

3.3 Design and construction. Cocks supplied under this CID shall be made of the materials specified under the salient characteristics in their respective slash sheet. When specified, one or both end connections shall be of the compression type.

Comments, suggestions, or questions on this document should be addressed to: Defense Supply Center, Columbus, Attn: DSCC-VAI, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to Construction@dsccl.dla.mil. Since contact information can change you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

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3.4 Applications. Table I, gives information on the applications and rated working pressures for each A-A-59440 slash sheet.

TABLE I. Application and rated working pressures.

CID	Steam		Water, Oil, Gas (WOG)	
	Pressure psig (bar)	Temperature °F (°C)	Pressure psi (bar)	Temperature °F (°C)
A-A-59940/1			150 (10.34)	150 (66)
A-A-59940/2			150 (10.34)	150 (66)
A-A-59940/3			50 (3.45)	150 (66)
A-A-59940/4	150 (10.34)	351 (177)		
A-A-59940/5	150 (10.34)	351 (177)		
A-A-59940/6			125 (8.62)	150 (66)
A-A-59940/7			150 (10.34)	150 (66)
A-A-59940/8			50 (3.45)	150 (66)
A-A-59940/9	125 (8.62)	351 (177)		

3.5 Dimensions and configurations. Dimensions and configurations shall be as specified in their respective CID slash sheet.

3.5.1 Cock bodies. The cock's bodies shall be provided with hexagonal wrenching surfaces.

3.5.2 Handles. Handles for the cocks shall be of the materials specified in their respective CID slash sheet.

3.5.3 Threads.

3.5.3.1 Screw threads. Screw threads shall be in accordance with FED-STD-H28.

3.5.3.2 Pipe threads. The threads of the cocks shall be in accordance with ASME B1.20.3 and ASME B1.20.5. as specified in their respective CID slash sheet.

3.5.3.2.1 Threads. Threads are dryseal NPTF-1 in accordance with ASME B1.20.3. NPTF-1 dryseal threads are designed to seal pressure tight joints without sealant compound. ASME B1.20.3 explains the engineering principle and engineering design. Each of the letters in the symbol "NPTF-1" has a definite significance as follows:

N = National (American) Standards

P = Pipe

T = Taper

F= Fuel and Oil.

1= Specific inspection of root and crest truncation is not required.

3.6 Plugs and stems. Plugs and stems shall be made of the materials defined in their respective slash sheet. The ports in the plugs shall be either round, oval or flat-way except that in no case shall the flow area through the port be less than the area of the adjacent flow passages.

3.6.1 Spring-adjusted plugs. Spring-adjusted plugs shall be held tight against the seat by a spring in accordance with the respective CID slash sheet.

3.6.2 Screw-adjusted plugs. Screw-adjusted plugs shall be secured by means of a slotted-head brass screw, a brass nut, or in accordance with the respective slash sheet, in such a manner as to eliminate the tendency of the screw or nut to be loosened by the operation of the plug. The fit of the screw or nut shall be sufficiently tight to prevent loosening by vibration.

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3.7 Performance.

3.7.1 Seat test pressure. Each sample cock shall be subjected to a seat pressure test using the pressure specified in table II. The following details shall apply:

- a. During the test the cocks shall be closed tightly.
- b. Any internal leakage past the seat is not acceptable.
- c. Spring key cocks, any external leakage at the plug stem shall not exceed 2 cubic centimeters per hour.
- d. Cocks with screw stems and screw keys, there shall be no external leakage past the stem or plug at the specified seat test pressure (see table II).
- e. The leakage limitations shall be attained with the plug or stem adjusted so that the maximum tangential force required to operate the cock will not exceed an amount produced by normal manual application without the use of extension levers or special tools or wrenches.
- f. The cocks shall also be capable of being operated against the full working pressure applied to one side of the closed cocks without the use of auxiliary levers or wrenches.

TABLE II. A-A-59440 Test Pressures.

CID	Shell psig (bar) <u>1/</u>	Seat psig (bar)
A-A-59940/1	150 (10.34)	50 (3.45)
A-A-59940/2	150 (10.34)	50 (3.45)
A-A-59940/3	80 (5.52)	10 (0.69)
A-A-59940/4	300 (20.68)	150 (10.34)
A-A-59940/5	300 (20.68)	150 (10.34)
A-A-59940/8	80 (5.52)	10 (0.69)
A-A-59940/9	250 (17.24)	125 (8.62)
A-A-59940/6	125 (8.62)	125 (8.62)
A-A-59940/7	150 (10.34)	50 (10.34)

1/ Metric equivalents are given for information only.

3.7.2 Shell test. Each sample cock shall be subjected to a hydrostatic or pneumatic shell test using the pressure specified in table II. The following details shall apply:

- a. Drain cocks shall be tested at the inlet with the stem closed.
- b. Other cocks shall be tested with the plug or stem open and both ends closed.
- c. The duration of the test on each sample shall be 30 seconds.
- d. Any external leakage attributable to defects in castings or workmanship shall constitute failure of the test.

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3.7.3 Seat test. Each sample cock passing the shell test, shall be subjected to a seat test using the pressure for the seat test as specified in table II. The following details shall apply:

- a. The test shall be either hydrostatic or pneumatic at the option of the supplier.
- b. The test pressure shall be applied to one side of the plug or stem.
- c. If no leakage is visible after the test pressure has been applied, the test may be discontinued.
- d. If measurable leakage is visible during the initial observation period, the test shall be continued for a length of time sufficient to permit an accurate determination of the leakage rate.
- e. For hydrostatic tests any leakage exceeding the maximum permissible rate specified in 3.7 shall constitute failure of the test.
- f. For pneumatic tests, leakage exceeding a rate of 25 cubic centimeters per minute of free air at standard atmospheric conditions shall constitute failure of the test.
- g. During the seat tests, the cocks shall also be observed for leakage past the plug or stem, and any leakage exceeding the specified limits shall also constitute failure of the test.

3.7.4 Operating force. After the shell test, the full working pressure shall be applied to the inlet side of plug cocks. The following details shall apply:

- a. The cock shall then be manually opened.
- b. For the seat test, the plug or the stem of the cock shall be manually closed before the seat test begins.
- c. The need for applying levers, wrenches, or impact force to operating levers and handles to effect satisfactory operation shall constitute failure of the test.

3.8 Size. The tables for the individual types of cocks found in their respective slash sheet, list the permissible variation in dimensions for each individual illustration. The external dimensions of the cocks should not limit procurement unless the end applications restrict these dimensions, aside from the external dimensions of the cocks.

3.9 Handles. Handles shall be as specified in the slash sheets and in accordance with the manufacturer's (MFR's) standard practice.

3.10 End connection. Cocks shall be as specified in the slash sheets and in accordance with the MFR's standard practice.

3.11 Finish. All surfaces of the cocks shall have the natural or machined finish normally produced by commercial manufacturing processes and techniques established as standard practice by the cock and fitting industry. Seating surfaces shall be finished as required to insure compliance with the performance tests in 3.6.

3.12 Interface and physical dimensions. Cocks supplied to this CID shall be as specified on the applicable CID slash sheet.

3.13 Marking. Drain cocks supplied to this CID shall be marked with the MFR's standard commercial PIN.

3.14 Workmanship. The quality of workmanship shall be consistent with the level of quality established by the cock and fittings industry for drain and shutoff cocks produced for commercial distribution. Castings shall be free from cracks, hot tears, blowholes, porosity, or other defects affecting structural soundness. Castings which must be plugged, impregnated, brazed, or burned-in to correct defects will not be acceptable. Inside and outside surfaces of castings shall be clean. All flow channels must be clean. Machined parts shall be free of cracks or other defects which will interfere with proper functioning of the cock.

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4. **REGULATORY REQUIREMENTS.** 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 CID, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5.2 Market acceptance. The following market acceptance criteria are necessary to document the quality of the product to be provided under this CID:

- a. The company producing the item must have been producing a product meeting the requirements of this CID for at least 5 years.
- b. The company must have an annual corporate sales volume over \$400,000.
- c. Average annual sales over the last 5 years of 2000 units that either entirely, or in part, meet the requirements of this CID.

6. **PACKAGING.** Preservation, packing, and marking shall be as specified in the contract or order.

7. **NOTES.**

7.1 PIN. The PIN should be used for Government purposes to buy commercial products to this CID. See section 2 for PIN format example.

7.2 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these shutoff cocks to DSCC under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.3 Source of documents.

Federal Standard

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

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Commercial Item Descriptions

A-A-59940/1	-	Cocks, Center Drain, Internal Seat or External Seat, 150 psi, Brass, Non-Flammable Liquid or Gas, NPTF-1 Threads
A-A-59940/2	-	Cock, Drain, with Hose Bib, 150 psi, Non-Flammable Liquid or Gas, NTF-1 Threads
A-A-59940/3	-	Cock, Drain, Spring Key, Brass, 50 psi, Water, Oil, Gas (WOG), NPTF-1 Threads
A-A-59940/4	-	Cock, Drain, Ground Key, 150 psi, Brass, Steam Pressure, NPTF-1 Threads
A-A-59940/5	-	Cock, Drain, Ground Key, Bib Nozzle 150 psi Steam Pressure, Brass, NPTF-1 Threads
A-A-59940/6	-	Cock, Plug, Three-Way, Threaded Type, Brass, 125 psi, NPTF-1 Threads, water, Oil, Gas (WOG)
A-A-59940/7	-	Cock, Shut-Off, Screw Stem, Threaded Type, 150 psi, Brass, Water, Oil, and Gas (WOG), NPTF-1 Threads
A-A-59940/8	-	Cock, Shut-Off, Screw Stem, Threaded Type, 50 psi, Brass, Water, Oil and Gas (WOG), NPTF-1 Threads
A-A-59940/9	-	Cock, Plug, Ground Key, Threaded Type, Brass, 125 psi Steam, NPTF-1 Threads

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

General Services Administration

FAR - Federal Acquisition Regulation

(Copies of these documents are available online at <http://www.arnet.gov/far/> or Federal Acquisition Policy Division, FAR Secretariat (MVP), Washington, DC 20405.)

Other Publications

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B1.20.1	-	Pipe, Threads, General Purpose (Inch)
ASME B1.20.3	-	Dryseal Pipe Threads (Inch)
ASME B1.20.5	-	Gaging for Dryseal Pipe Threads (Inch)

(Copies of these documents are available online at <http://www.asme.org> or from ASME International, Three Park Avenue, New York, NY 10016-5990.)

7.4 Ordering Data. The contract or order should specify the following:

- a. CID document number, revision, and CID PIN
- b. Product conformance provisions.
- c. Packaging requirements.

7.5 Government Users. To acquire information on obtaining these cocks from the Government inventory system, contact Defense Supply Center, Columbus, ATTN: DSCC Call Center (DSCC-NAB), P.O. Box 3990, Columbus, OH 43218-3990, or telephone (614) 692-2271 or (614) 692-3191.

7.6 Supersession data. Table III specifies the supersession data.

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TABLE III. Supersession data.

CID	Superseded MS sheet
A-A-59940/1	MS35782
A-A-59940/2	MS35783
A-A-59940/3	MS35784
A-A-59940/4	MS35785
A-A-59940/5	MS35787
A-A-59940/6	MS35932
A-A-59940/7	MS35934
A-A-59940/8	MS35930
A-A-59940/9	MS35931

7.7 Supersession data for non standard information type II style C and style D. The following information was carried over from MIL-C-1203 for Type II style C and style D. This information will have to be ordered as non standard parts since the manufacturers do not have these parts as off the shelf parts.

7.7.1 Non standard parts. No MS standards exist for the following cocks.

7.7.1.1 Type II, style C cocks. Two-way, two-port plug, 90° turn, square head with removable lever handle.

- a. 150 psig (10.34 bar) WOG at 150°F (65.6°C).
- b. Test pressures:
 - (1) Shell 150 psig
 - (2) Seat 50

7.7.1.1.1 Handle. Malleable iron.

7.7.1.2 Type II, style D cocks. Two-way, two-port plug, 90° turn, fixed lever handle, stop-and-waste.

- a. 150 psig (10.34 bar) WOG at 150°F (65.6°C).
- b. Test pressures:
 - (1) Shell 150 psig
 - (2) Seat 50

7.7.1.2.1 Handle. Material in accordance with the manufactures standard practice. Lever handles on two-way plug cocks shall be designed to be in-line with the port.

7.7.1.3 Non standard parts thread types. Type II style C and style D cocks shall be furnished with either Dryseal (NPTF-1 (see 3.5.3.2)) or standard (NPT) taper pipe threads conforming to ASME STD B1.20.1 For type II, style C and style D cocks the nominal sizes of the end connections shall be from 1/2-inch through 2-inch.

7.8 Intended application. The drain cocks specified herein are intended for use in the automotive field for drainage of radiators, tanks, and similar components. Shutoff cocks are used for gauging stations, fuel lines, air vents, oil lines, and similar applications.

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7.9 Key words.

Automotive
Brass
Cock
Drainage
Gas
Oil
Radiator
Steam
Valve
Water

7.10 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:

Army - CR4
Navy - SH
Air Force - 99
DLA - CC

Review activities:

Army - CE, GL, MI
Navy - MC
Air Force - 71

CIVIL AGENCY AND COORDINATING ACTIVITIES:

GSA - FSS

Preparing activity:

DLA - CC

Project 4820-0880-000

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