

INCH-POUND

A-A-59440/3D

02 July 2020

SUPERSEDING

A-A-59440/3C

06 December 2018

COMMERCIAL ITEM DESCRIPTION SPECIFICATION SHEET

COCK-VALVE, DRAIN, SPRING KEY, BRASS, 50 PSI,
WATER, OIL, AND GAS (WOG), NPTF-1 THREADS

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

The complete requirements for procuring the cock-valve, drain, spring key, brass, 50 psi, water, oil, and gas (WOG), NPTF-1 threads described herein shall consist of this document and the issue in effect of A-A-59440.

CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN). This commercial item description (CID) specification sheet uses a classification system which is included in the PIN as shown in the following example (see NOTES).

AA59440	/03	-	011
└───┘	└───┘		
CID number	Applicable CID spec sheet (two digits)		Dash number (see figure 1)

SALIENT CHARACTERISTICS.

Interface and physical dimensions. Cock-valves, drain, spring key, brass, 50 psi, water, oil, and gas (WOG), NPTF-1 threads supplied to this CID specification sheet shall be as specified herein (see figure 1).

Sizes. Nominal sizes of 1/8 inch through 3/8 inch with NPTF-1 threads.

Intended application. These items are for use in liquid or gas systems where the pressure does not exceed 50 psi (3.45 bar) at 150°F (65.6°C) and the liquid is compatible with brass. Spring material is phosphor bronze, carbon steel, or corrosion resistant stainless steel (CRES) (see figure 1). Not for use in potable water systems.

Permissible variations in dimensions. Figure 1 lists the permissible variation in dimensions for each size. The external dimensions of the cock-valve should not limit procurement unless the end item applications restrict these dimensions.

Optional designs. Figure 1 is for identification purposes only and is not intended to restrict designs or shapes not dimensioned.



Threads. Threads are dryseal NPTF-1 in accordance with ASME B1.20.3 per A-A-59440.

Material.

Material body, handle, stem, and screw. Body, handle, stem, and screw shall be brass in accordance with the following commercial standards:

For use in non-potable water systems (lead brass alloys) :

ASTM B16/B16M	ASTM B121/B121M	ASTM B427	SAE AMS4845
ASTM B22	ASTM B124/B124M	ASTM B505/B505M	SAE AMS4855
ASTM B30	ASTM B148	ASTM B584	SAE AMS4860
ASTM B36/B36M	ASTM B176	ASTM B763	SAE AMS4862
ASTM B61	ASTM B271/B271M	ASTM B770	SAE AMS4890
ASTM B62	ASTM B369	ASTM B806	

Carbon steel. Cast, forged, or machined carbon steel shall be in accordance with QQ-S-698.

Spring material. Spring material as specified by the corresponding dash number in figure 1 and shall be in accordance with one of the following:

- Phosphor bronze in accordance with ASTM B134/B134M, ASTM B159/B159M, or ASTM B206/B206M alloy number 510.
- Carbon steel in accordance with ASTM A227/A227M or ASTM A229/A229M.
- Corrosion resisting steel in accordance with ASTM A313/A313M, composition 302, 304, 305, 316, condition B spring temper.

Spring finish.

- Phosphor bronze: None.
- CRES: None.
- Carbon steel:
 - ** Cadmium in accordance with SAE-AMS-QQ-P-416, type II, class 2.
 - * Zinc in accordance with ASTM B633; type V or VI, Fe/Zn 8.
 - ** Zinc-nickel in accordance with SAE-AMS2417, 12% to 16% nickel, type 2, grade B. (315 1/4 inches (81/4m) minimum)
 - ** Zinc-Aluminum in accordance with ASTM F1136/F1136M, grade 3, NC.

NOTES:

- Cadmium shall not be used in potable water or oxygen systems. Cadmium is prohibited from use in NAVSEA-owned shipboard systems, unless otherwise approved by NAVSEA. The use of cadmium plating for Army ground vehicles is prohibited unless otherwise explicitly stated in the contract as a requirement. Zinc-nickel may be substituted for cadmium for Army ground vehicle applications.
- Brass with lead contents shall not be used in potable water systems.
- Finishes shall not contain hexavalent chromium
- * - For use in low corrosion environments.
** - For use in medium to high corrosion environments.

NOTE: The following restrictions do not apply to manufactures of the cock valve and is applicable only to OEM's and users.

Cadmium is not recommended. To the users of this document, it is recommended that the use of carbon steel material with cadmium plating be used only when other materials and finishes specified in this document cannot meet performance requirements.

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The use of cadmium plating or coatings depositing hexavalent chromium for Army vehicles is prohibited unless otherwise explicitly stated in the contract as a requirement.

For new designs PIN codes 017 and 018 are not to be supplied to Army and Marine ground forces.

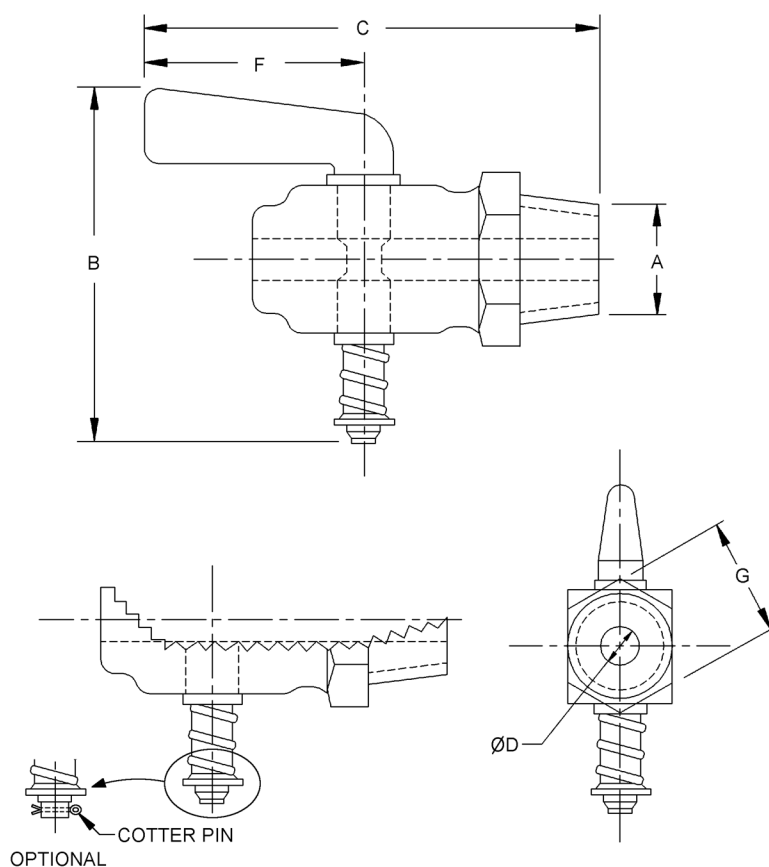
Class I and II ozone depleting substances (ODS) shall not be used in A-A-59440/3 or any referenced procedures.

NOTE: End of restrictions only applying to OEM's and users.

Phosphor bronze springs. Phosphor bronze springs when specified are used to avoid possible spark and explosion.

Test pressures.

- a. Shell: 80 psig (5.12 bar).
- b. Seat: 10 psig (0.69 bar)



See Notes at end of figure.

FIGURE 1. Cock-valve, drain, with hose bib.

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Dash Number	Spring Material	A Pipe thread NPTF-1	B max (mm)	C max (mm)	D diameter min (mm)	F max (mm)	G across flats ±.015 (0.38 mm) <u>1/</u>
011	Phosphor Bronze	1/8-27	1.75 (44.7)	1.91 (48.5)	.16 (4.1)	1.00 (25.4)	.44 or .50 (11.2 or 12.7)
012	Phosphor Bronze	1/4-18	1.88 (47.6)	2.47 (62.7)	.19 (4.8)	1.22 (31.0)	.56 or .62 (14.2 or 15.7)
013	Phosphor Bronze	3/8-18	2.75 (69.9)	2.97 (75.4)	.23 (5.8)	1.50 (38.1)	.69, .75 or .88 (17.5, 19.1, or 22.4)
016 <u>2/</u>	CRES	1/4-18	1.88 (47.6)	2.47 (62.7)	.19 (4.8)	1.22 (31.0)	.56 or .62 (14.2 or 15.7)
017 <u>2/</u>	Carbon Steel (cadmium plated)						
018 <u>2/</u>	(Zinc plated)						
019 <u>2/</u>	(Zinc-nickel)						
020 <u>2/</u>	(Zinc-aluminum)						

1/ Hexflat measurement. Hexagonal hex flats can be a standard wrench pad.

2/ Caution: If other than phosphor bronze spring is used be aware of possible spark and explosion.

NOTES.

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified tolerances are ±.010 inch (0.25 mm).
4. Diameter of hole shall be adequate to allow drainage through the valve.

FIGURE 1. Cock-valve, drain, with hose bib - Continued.

NOTES.

PIN. The PIN should be used for Government purposes to buy commercial products to this CID specification sheet. See the classification section for PIN format example.

Source of documents.

FEDERAL SPECIFICATION

QQ-S-698 - Steel, Sheet and Strip, Low Carbon

COMMERCIAL ITEM DESCRIPTIONS

A-A-59440 - Cock-Valves and Valves, General Requirements for

(Copies of these documents are available online at <https://quicksearch.dla.mil/> or <https://assist.dla.mil/>).

Other Publications

ASME INTERNATIONAL

ASME B1.20.3 - Dryseal Pipe Threads (Inch)

(Copies of these documents are available online at <https://www.asme.org>)

ASTM INTERNATIONAL

ASTM A313/A313M	-	Stainless Steel Spring Wire
ASTM A227/A227M	-	Steel Wire, Oil-Tempered for Mechanical Springs
ASTM A229/A229M	-	Steel Wire, Cold-Drawn for Mechanical Springs
ASTM B16/B16M	-	Free-Cutting Brass Rod, Bar and Shapes for use in Screw Machines
ASTM B22	-	Bronze Castings for Bridges and Turntables
ASTM B30	-	Copper Alloys in Ingot Form
ASTM B36/B36M	-	Brass Plate, Sheet, Strip, and Rolled Bar
ASTM B61	-	Steam or Valve Bronze Castings
ASTM B62	-	Composition Bronze or Ounce Metal Castings
ASTM B121/B121M	-	Leaded Brass Plate, Sheet, Strip, and Rolled Bar
ASTM B124/B124M	-	Copper and Copper Alloy Forging Rod, Bar, and Shapes
ASTM B134/B134M	-	Standard Specification for Brass Wire
ASTM B148	-	Aluminum-Bronze Sand Castings
ASTM B159/B159M	-	Phosphor Bronze Wire
ASTM B176	-	Copper-Alloy Die Castings
ASTM B206/B206M	-	Copper-Nickel-Zinc (Nickel Silver) Wire and Copper-Nickel Alloy Wire
ASTM B271/B271M	-	Copper-Base Alloy Centrifugal Castings
ASTM B369	-	Copper-Nickel Alloy Castings
ASTM B427	-	Gear Bronze Alloy Castings
ASTM B505/B505M	-	Copper Alloy Continuous Castings
ASTM B584	-	Copper Alloy Sand Castings for General Applications
ASTM B633	-	Electrodeposited Coatings of Zinc on Iron and Steel
ASTM B763	-	Copper Alloy Sand Castings for Valve Applications
ASTM B770	-	Copper-Beryllium Alloy Sand Castings for General Applications
ASTM B806	-	Copper Alloy Permanent Mold Castings for General Applications
ASTM F1136/F1136M	-	Zinc/Aluminum Corrosion Protective Coatings for Fasteners

(Copies of these documents are available online at <http://www.astm.org> or from the ASTM International, P.O. Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

SAE INTERNATIONAL

SAE-AMS-QQ-P-416	-	Plating, Cadmium (Electrodeposited)
SAE AMS4845	-	Tin Bronze Castings, Sand and Centrifugal 87.5CU - 10SN - 2ZN as Cast
SAE AMS4855	-	Leaded Red Brass, Sand and Centrifugal Castings 85CU - 5.0SN - 5.0PB - 5.0ZN as Cast
SAE AMS4860	-	Manganese Bronze, Sand and Centrifugal Castings 58CU - 39ZN - 1.2FE - 1.0AL - 0.80MN as Cast
SAE AMS4862	-	Manganese Bronze, Sand and Centrifugal Castings 63CU - 24ZN - 6.2AL - 3.8MN - 3.0FE High Strength, as Cast
SAE AMS4890	-	Copper-Beryllium Alloy Castings 97CU - 2.1BE - 0.52CO - 0.28SI Solution Heat Treated (TBOO)
SAE-AMS2417	-	Plating, Zinc-Nickel Alloy

(Copies of these documents are available on line at www.sae.org from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, and Tel: 877-606-7323 [inside USA and Canada] or 724-776-4970 [outside USA], email at CustomerService@sae.org.)

Commercial products. As part of the market analysis and research effort, this CID specification sheet was coordinated with the following manufacturers of commercial products. At the time of CID specification sheet preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID specification sheet. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict procurement to only the manufacturers shown.)

<u>MFR's CAGE</u>	<u>MFR's name and address</u>
01276	Eaton Aeroquip Inc. 14615 Lone Oak Rd. Eden Prairie, MN 55344 952-294-2032/888-258-0222 jeffenoe@eaton.com
93061	Parker-Hannifin Corp Brass Products Division 300 Parker Drive Otsego, MI 49708-1472 260-636-2104 dwsanders@Parker.com
20969	Essex Brass Corp 23500 Pinewood Warren, MI 48091-3122 586-757-8200

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Military standard (MS) supersession data. This CID replaces the following MS as shown in table I.

TABLE I. MS supersession data.

CID PIN	Superseded MS
AA59440/3-011	MS35784-1
AA59440/3-012	MS35784-2
AA59440/3-013	MS35784-3
AA59440/3-016 <u>1/</u>	MS35784-2 CRES
AA59440/3-017 <u>1/</u>	MS35784-2 Carbon steel (cadmium plated)
AA59440/3-018 <u>1/</u>	MS35784-2 Carbon steel (zinc plated)

1/ These parts were originally listed in MS35784 as a single part type. Due to special handling/disposal and corrosion resistance requirements the parts have been separated in this CID.

Part number P/N supersession data. These CID specification sheet PINs supersede the following MFR's P/N's as shown in table II. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE II. P/N supersession data.

CID PIN (see figure 1) AA59440/3	MFR's CAGE	MFR's P/N <u>1/</u>
011	20969 70411	AC63L 30CJ
012	20969	AC64L
013	20969	AC14
016	20969	N/A
017	20969	N/A
018	20969	N/A

1/ The manufacturer's P/N shall not be used for procurement to the requirements of this CID specification sheet. At the time of preparation of this CID specification sheet, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements, see marking paragraph of A-A-59440.

National stock number (NSN). The following is a list of NSN's assigned which correspond to this CID specification sheet. The list in table III is for information only and may not be indicative of all possible NSN's associated with the CID specification sheet. For up to date information on assigned NSN's, please contact the aforementioned DLA Land and Maritime office listed in A-A-59440.

TABLE III. NSN's.

Dash number (see figure 1) AA59440/3	NSN
011	4820-00-555-9761
012	4820-00-287-4268
013	4820-00-272-3346

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

MILITARY INTERESTS:

CIVIL AGENCY AND COORDINATING ACTIVITIES:

Custodians:

Army - AR
Navy - SH
Air Force - 71
DLA - CC

GSA - FSS

Preparing activity:

DLA - CC

Review activities:

Army - AT, CR4
Navy - AS, SA

(Project 4820-2020-005)

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 <https://assist.dla.mil>.