

INCH-POUND

A-A-59326D

October 7, 2011

**SUPERSEDING**

A-A-59326C

April 14, 2011

## COMMERCIAL ITEM DESCRIPTION

### COUPLING HALVES, QUICK-DISCONNECT, CAM-LOCKING TYPE, GENERAL SPECIFICATION FOR

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

#### 1. SCOPE

1.1 This commercial item description (CID) covers 23 types of quick-disconnect cam-locking, coupling halves and their fittings used in fuel and water handling equipment.

#### 2. CLASSIFICATION

2.1 The couplings will conform to the following types, classes, sizes and styles.

2.2 Types. The following are types of quick-disconnect, cam-locking, coupling halves and adapters.

Type I	Coupling Half, Male by Internal Pipe Thread	A-A-59326/1
Type II	Coupling Half, Male by Hose Shank	A-A-59326/2
Type III	Coupling Half, Male by External Pipe Thread	A-A-59326/3
Type IV	Coupling Half, Male by Flange, TTMA (Truck Trailer Manufacturers Association)	A-A-59326/4
Type V	Coupling Half, Female by Internal Pipe Thread	A-A-59326/5
Type VI	Coupling Half, Female by Hose Shank	A-A-59326/6
Type VII	Coupling Half, Female by External Pipe Thread	A-A-59326/7
Type VIII	Coupling Half, Female by Flange, TTMA	A-A-59326/8
Type VIII A	Coupling Half, Female by Flange, Hexagon	A-A-59326/9
Type IX	Coupling Half, Cap, Dust	A-A-59326/10
Type X	Coupling Half, Plug, Dust	A-A-59326/11

Beneficial comments, recommendations, additions, deletions, clarifications, etc. and any data that may improve this document should be sent to [DAMI\\_STANDARDIZATION@conus.army.mil](mailto:DAMI_STANDARDIZATION@conus.army.mil) or U.S. Army RDECOM, Tank Automotive Research, Development and Engineering Center, ATTN: RDTA-EN/STND/TRANS MS #268, 6501 E. 11 Mile Road, Warren, MI 48397-5000. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <https://assist.daps.dla.mil>.

AMSC N/A

FSC 4730

Distribution Statement A. Approved for public release; distribution is unlimited.

Type XI	Reducer, Male by Female and Female by Male	A-A-59326/12
Type XII	Reducer, Male by External Pipe Thread	A-A-59326/13
Type XIII	Reducer, External Pipe Thread by Female	A-A-59326/14
Type XV	Adapter, 45°, Female Thread Swivel Collar by Male	A-A-59326/15
Type XVI	Coupling Half, Female by External Straight Threads	A-A-59326/16
Type XVII	Coupling Half, Male by Internal Straight Threads	A-A-59326/17
Type XVIII	Coupling Half, Female Reducer by Internal Pipe Thread	A-A-59326/18
Type XIX	Nipple Adapter, Male by External Grooved Pipe	A-A-59326/19
Type XX	Y Connection, Flanged	A-A-59326/20
Type XXI	Adapter, Male by Male	A-A-59326/21
Type XXII	Adapter, Female by Female, Cam Locking Type	A-A-59326/22
Type XXIII	Nipple Adapter, Female by External Grooved Pipe	A-A-59326/23

2.3 Classes. Coupling halves and adapters will be of the following classes, based on the material of construction.

- Class A - Aluminum Alloy with anodized coating
- Class B - Copper Alloy (Brass or Bronze)
- Class BA - Aluminum Bronze
- Class SS - Stainless Steel

2.4 Sizes. The coupling halves and adapters will conform to the sizes specified in the applicable table of the specification sheets, for the configuration shown on the accompanying figure and will be designated by a dash number.

2.5 Styles. The coupling halves shall have the following styles:

Style 1 - Style 1 couplings do not require the incorporation of a positive locking mechanism to lock the cam arms in the closed position but the cam arms shall stay in the closed position when the coupling halves are assembled.

Style 2 - Style 2 couplings shall incorporate a positive locking mechanism to lock the cam arms in the closed position when the coupling halves are assembled. The locking mechanism shall be manually released (the release doesn't have to stay in the released position) before the cam arms can be moved to the open position.

### 3. SALIENT CHARACTERISTICS

3.1 Description. These coupling halves and adapters are suitable for use with suction hoses, discharge hoses, nozzles, and for various fittings and manifolds. Requirements shall be as defined herein and on the individual specification sheets. In the event that there is a conflict between the two documents, the specification sheet shall govern.

3.2 Materials. Materials shall be of sufficient durability to meet all performance requirements, in any of the environments, specified herein. Couplings and accessories shall not be made from hazardous materials (HazMats), ozone depleting chemicals (ODCs) or leach or otherwise develop toxins.

3.2.1 Fuel distribution service. Couplings and accessories shall be manufactured from any materials suitable for use with gasoline and the following diesel fuels and kerosene-based petroleum fuels. Copper or copper alloys shall not be used where it could come into contact with the fuel.

- a. MIL-DTL-83133 (JP-8) (NATO F-34)
- b. MIL-DTL-5624 (JP-5) (NATO F-44)
- c. ASTM D975
- d. ASTM D1655 (Jet A-1) (NATO F-35)

3.2.2 Drinking water service. Couplings and accessories shall be manufactured from any materials suitable for potable water service. Lead shall not be used. The components shall contain no materials or substances that could leak or disintegrate and cause the water to become non-potable. All surfaces that contact the water shall conform to the applicable Federal regulations for use with potable water.

3.2.3 Recovered materials. Recovered materials, collected from solid waste and reprocessed to become a source of raw material, may be used in the manufacture of the couplings (see 4.0). However, used, rebuilt, or re-manufactured components and parts shall not be incorporated

3.2.4 Dissimilar metals. The couplings and accessories shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the various forms of corrosion and deterioration to which they are susceptible. Dissimilar metals except for stainless steel pins and key rings shall not be used in intimate contact with each other unless protected against galvanic corrosion.

3.3 Configuration. The coupling halves and fittings shall conform to these interface requirements (see figures 1 and 2).

3.3.1 Assemblies. The coupling half assembly shall conform to figure 1 and table I.

3.3.2 Male coupling half. Male coupling halves shall conform to figure 2 and table II.

3.3.2.1 Wrenching surfaces. The flats or lugs on the coupling half shall be of sufficient size to permit a positive grip by standard tools for manipulation of the coupling half. A boss, or other means, to accept the ring or s-hook, of a retaining chain shall be incorporated on or adjacent to one of the flats or lugs. The ring attaching feature shall be of sufficient strength to withstand the repeated free fall of a dust cap in accordance with A-A-59326/10. It shall be of sufficient durability to withstand repeated use, without deformation, and shall not bind or abrade the ring or s-hook.

3.3.3 Female coupling half. Female coupling halves shall conform to figure 3 and table III. For 6-inch coupling halves, more than two cam arms (preferably four cam arms) can be provided for the 150 psi rated coupling halves.

3.3.3.1 Pull rings. The cam arms shall incorporate assembled pull rings, of sufficient strength and durability to withstand repeated openings of the arms using the rings. The pull rings shall be made of corrosion resistant steels. Neither the rings nor arms shall be abraded or deformed. The pull ring shall not bind, nor rust for the life of the coupling half.

3.3.4 Gaskets. Female coupling halves shall contain gaskets conforming to figure 4 and table IV. A "G" designation shall be used in lieu of Type and Class designations. A PIN for separate procurement of gaskets (see 7.5) shall be AA59326-G-X in other words gaskets will be designated by A-A-59326-G-X or AA59326-G-X or AA59326-G-XX.

3.3.5 Flanges. Flanges for types IV, VIII, and XX shall conform to figure 5 or Outlet Flange for TTMA RP No. 28-04. Unless otherwise mentioned, threads shall be tapered national pipe (NPT) threads. See specification sheets for thread sizes.

3.4 Performance. The coupling assembly shall not leak or distort when subjected to the required hydrostatic pressure for 5 minutes.

3.4.1 Hydrostatic test pressure. Unless otherwise indicated on the specification sheet, ½-inch through 4-inch couplings shall withstand hydrostatic pressure of not less than 300 pounds per square inch gage (psig). The 6-inch, 75 psi rated, female cam-locking type coupling halves shall withstand a hydrostatic pressure of not less than 150 psi. The 6-inch, 150 psi rated female cam-locking type coupling halves shall withstand a hydrostatic pressure of not less than 225 psi. The 6-inch male cam-locking type coupling halves shall withstand a hydrostatic test pressure of 300 psig.

3.4.2 Working pressure. Unless otherwise indicated on the specification sheet, ½-inch through 4-inch couplings shall be rated for a minimum of 150 pounds per square inch (psi). The 6-inch couplings shall be rated either for 75 psi or 150 psi as appropriate. The female 6-inch 150 psi rated coupling shall use more than two cam arms, preferably four (4) cam arms. Unless specified otherwise (see 7.3) 6-inch female cam-locking coupling halves shall be rated for 150 psi.

3.4.3 Torque. The torque required to completely close each cam arm shall be as specified in table III, and the amount of gasket compression shall be as specified in table IV.

3.4.4 Interchangeability. All parts having the same type and size, irrespective of manufacturer, shall be capable of being interchanged, without modification, with no impairment of functional or physical characteristics.

3.5 Identification marking. Couplings shall be legibly and permanently marked in  $.25 \pm .03$  inch high characters. On small fittings, characters shall be  $.130 \pm .03$  inch or the couplings may be identified on a securely attached tag or marked on the packaging medium. The markings shall include, as a minimum, the manufacturer's identification and a part number.

4. REGULATORY REQUIREMENTS. The offerer/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with paragraph 23.403 of the Federal Acquisition Regulation (FAR).

4.1 Regulations. The coupling halves shall comply with all applicable Federal and State mandatory requirements and regulations relative to the manufacture, packaging and labeling.

## 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 market. The Government reserves the right to require proof of such conformance.

5.2 Market acceptability. The item offered shall be of the latest model of the standard product of the supplier that shall have been used in the field for at least one year by commercial organizations.

5.3 Examination. Each coupling assembly shall be examined for compliance with requirements specified in 3.2 through 3.5. Any modification necessary following failure to meet the specified requirements shall receive particular attention for adequacy and suitability. This element of inspection shall encompass all examinations of performance and dimensional requirements. Non-compliance with any specified requirements or the presence of one or more defects lessening required efficiency shall constitute cause for rejection.

## 6. PACKAGING

6.1 Packaging. Preservation, packing, and marking shall be as specified in the contract or order.

## 7. NOTES

(This section contains information of an explanatory nature that may be helpful but is not mandatory.)

7.1 Intended use. The quick disconnect couplings and accessories covered by this CID are primarily to be used in suction hose, discharge hose, and nozzles for various fittings and manifolds for the handling of liquid products, such as aviation fuel, diesel fuel, potable water, or waste water.

7.2 Conformance data requirements. When this CID is used for procurement, the product conformance clause should appear in the solicitation.

7.3 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this CID and the related CID specification sheet(s).
- b. Type, Size, Class, style and the quantity required.
- c. Component material designations (see 3.2).
- d. When working pressure specifies 75 psi for the 6-inch female coupling halves.
- e. When other than stainless steel pull rings are required (see 7.4.5)
- f. Packaging requirements (see 6.1)

7.4 Material specification. The contracting officer will select from the following options for materials and finishes.

7.4.1 Housing. Unless otherwise indicated on the specification sheet, materials used in the manufacture of the coupling assembly housings will be as follows:

- Class A (Aluminum alloy) - UNS A03560 in T6 Temper, A07120 in T5 Temper per ASTM B26/B26M for castings and Alloy 2011 or 6061 per ASTM B211 for bar stock.
- Class B (Copper Alloy) - UNS C37700, C83600, C83800, C84400, C90500, or C92200 per ASTM B584 for castings or C36000 per ASTM B16/B16M for bar stock, or copper alloy C37700 per ASTM B283/B283M.
- Class BA (Aluminum Bronze) - UNS C60600, C61300, C61400, C62400, C63000, C64200 or C64210 per ASTM B150/B150M or per ASTM B148 for castings.
- Class SS (Stainless Steel) - UNS S30400 or S31600 per ASTM A276 or ASTM A582/A582M for bar stock or per ASTM A314 for forgings or ASTM A743/A743M for castings in grades CF-8 and CF-8M.

7.4.1.1 Finish. Unless otherwise indicated on the specification sheet, coupling assembly housings will be finished as follows:

- Class A (Aluminum alloy) - Anodic coating, non-dyed, 0.0004 inch minimum thickness
- Class B (Copper alloy) - Plain (no finish)
- Class BA (Aluminum Bronze) - Plain (no finish)
- Class SS (Stainless Steel) - Plain (no finish) or per ASTM A351/A351M for castings

7.4.2 Gaskets. Gaskets should be of nitrile material for use in temperatures above -20 °F. Nitrile gaskets should conform to ASTM D2000, Grade M2BG610 B14EA14EF21F17Z1Z2.

Z1: The compression set after 22 hours @ 70°Centigrade will not exceed 60 percent when tested in accordance with ASTM D395.

When polyurethane is selected, use the following water resistance test:

Z2: After 14 days in distilled water @ 70°Centigrade the maximum change in strength will be 40 percent when tested in accordance with ASTM D471.

7.4.2.1 For temperatures below -20 °F, Gaskets should be of made of elastomers suitable for use up to -70 °F.

7.4.3 Unless otherwise indicated on the specification sheet, materials used in the manufacture of the cam arms will be Copper Alloy UNS C36500, C37700, C46400, C48200, or C48500 per ASTM B124/B124M for forgings, or Stainless Steel UNS S30400, or S31600 per ASTM A480/A480M or per ASTM A743/A743M for casting or suitable powdered metal per MPIF STD 35, or suitable investment cast metal per ASTM A351/A351M.

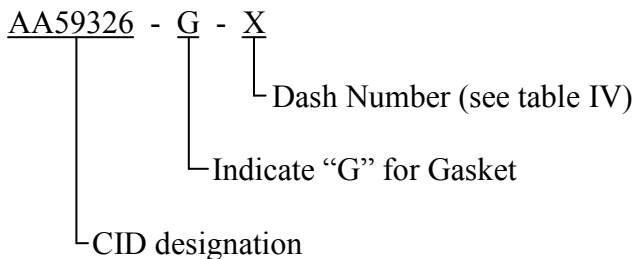
7.4.4 Cam pins. Unless otherwise indicated on the specification sheet, materials used in the manufacture of the cam pins will be CRES Alloy UNS S30323, S30300 per ASTM A582/A582M, or Class S30430 or S31600, condition A, per ASTM A276.

7.4.5 Pull rings. Unless otherwise indicated (see 7.3), materials used in the manufacture of the pull rings will be CRES Alloy UNS S30400 or S30200 per ASTM A313/A313M.

7.5 Part Identification Number (PIN). The following part identification numbering procedure is for government purposes and does not constitute a requirement for the contractor. Identification by cross-referenced numbering systems (see 7.6) will be acceptable.

The PIN to be used for a coupling half acquired using this CID and associated commercial item description specification sheets will be indicated in each specification sheet.

The PIN used for a gasket only using this CID is generated as follows: Gaskets conforming to this CID are interchangeable with gaskets conforming to MS 27030.



Example: AA59326-G-6 is a 2-inch Nominal size coupling gasket

7.6 Cross reference data. Coupling assemblies conforming to this CID are interchangeable with coupling assemblies conforming to MIL-C-27487. The following listing provides cross-references to the equivalent Military Standards.

CID Spec sheet	Mil-Standard sheet
A-A-59326/1	MS27020
A-A-59326/2	MS27021
A-A-59326/3	MS27022
A-A-59326/4	MS27023
A-A-59326/5	MS27024
A-A-59326/6	MS27025
A-A-59326/7	MS27026
A-A-59326/8	MS27027
A-A-59326/9	MS70091
A-A-59326/10	MS27028
A-A-59326/11	MS27029

CID Spec sheet	Mil-Standard sheet
A-A-59326/12	MS49000
A-A-59326/13	MS49001
A-A-59326/14	MS49002
A-A-59326/15	MS70088
A-A-59326/16	MS70096
A-A-59326/17	MS70095
A-A-59326/18	MS70097
A-A-59326/19	MS70100
A-A-59326/20	MS39336
A-A-59326/21	MS39352

7.7 Subject term (key word) listing.

- Fitting
- Hose coupling
- Kamlok
- Qdisc

7.8 Addresses for obtaining copies of referenced documents.

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

7.8.2 Non-Government documents.

7.8.2.1 ASME documents. Copies of ASME documents are available online at <http://www.asme.org> or from American Society of Mechanical Engineers, Orders/Inquiries, P.O. Box 2300, Fairfield, NJ 07007-2300.

7.8.2.2 ASTM documents. Copies of ASTM documents are available from [www.astm.org](http://www.astm.org) or ASTM International, P.O. Box C700, West Conshohocken, PA 19428-2959.

7.8.2.3 MPIF documents. Copies of MPIF documents are available from [www.mpif.org](http://www.mpif.org) or MPIF 105 College Road East, Princeton, NJ 08540-6692



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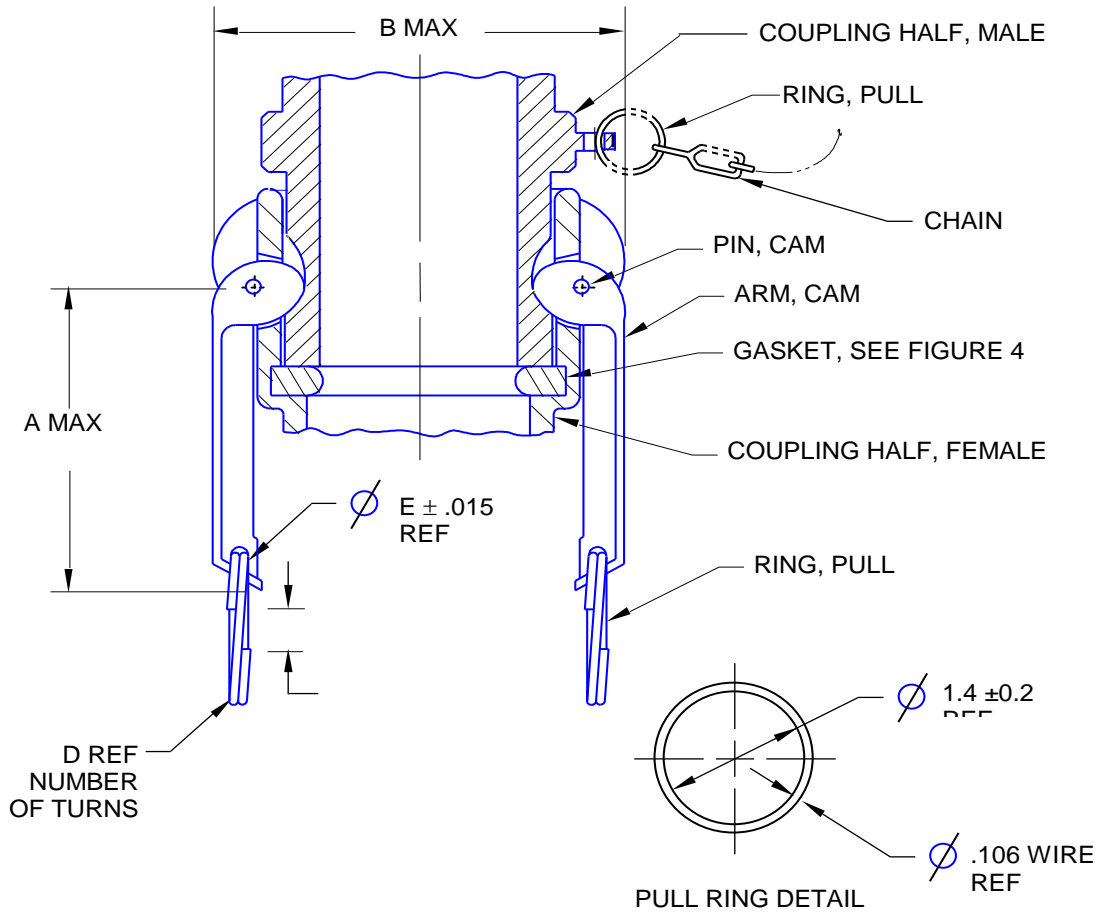


FIGURE 1. Coupling assembly, quick-disconnect, cam-locking type.

TABLE I. Coupling assembly, quick-disconnect, cam-locking type.

Nominal Size	Dimensions			
	A	B	D	E
1/2	1.50	2.88	2	0.156
3/4	1.50	2.88	2	0.156
1	1.75	3.00	2	0.156
1 1/4	3.00	3.69	2	0.156
1 1/2	3.00	3.94	2	0.156
2	3.00	4.38	2	0.156
2 1/2	3.00	4.88	2	0.156
3	3.25	5.75	3	0.250
4	3.25	6.88	3	0.250
6	4.25	10.10	3	0.250

Note: Dimensions are in inches, tolerance shall be  $\pm .02$  for two place decimals,  $\pm .005$  for three place decimals, unless otherwise specified hereon.

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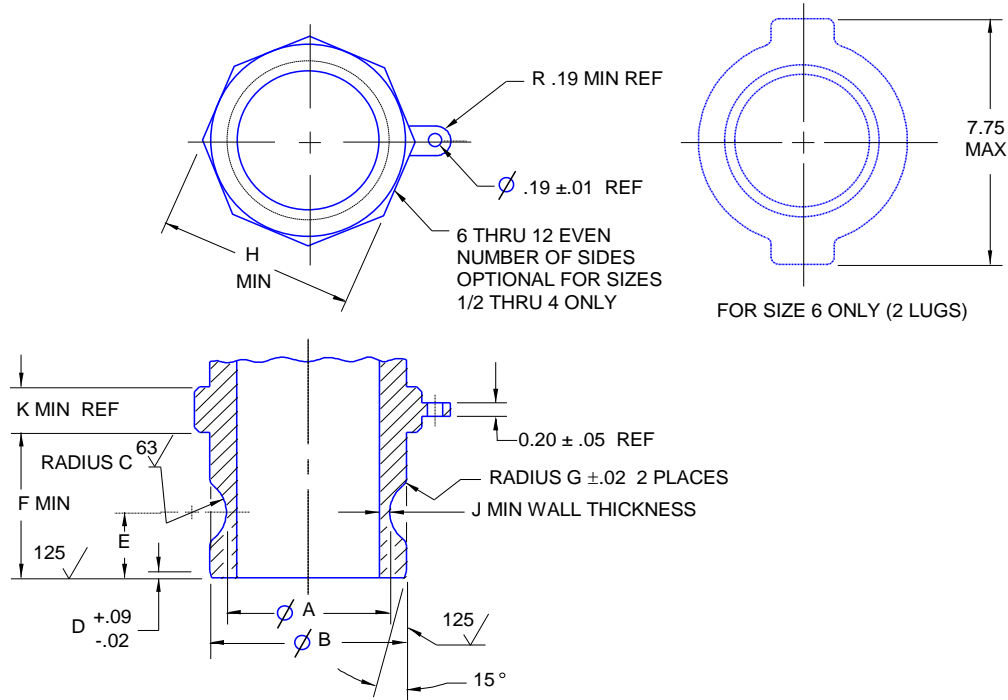


FIGURE 2. Coupling half, male.

TABLE II. Coupling half, male.

Nominal Size	Dimensions									
	A	B	C	D	E	F	G	H	J	K
1/2	1.035	1.264	.378	0.09	.471	1.00	0.06	1.264	.10	.58
	1.030	1.259	.372		.465			1.259		
3/4	1.035	1.264	.378	0.09	.471	1.00	0.06	1.264	.10	.58
	1.030	1.259	.372		.465			1.259		
1	1.144	1.446	.378	0.13	.565	1.32	0.09	1.446	.10	.58
	1.139	1.441	.372		.559			1.441		
1 1/4	1.388	1.792	.441	0.13	.690	1.56	0.12	1.792	.13	.58
	1.383	1.787	.435		.684			1.787		
1 1/2	1.690	2.105	.441	0.13	.690	1.62	0.12	2.105	.13	.58
	1.685	2.100	.435		.684			2.100		
2	2.065	2.484	.441	0.13	.848	1.87	0.12	2.484	.13	.58
	2.060	2.479	.435		.842			2.479		
2 1/2	2.545	2.985	.441	0.19	.848	1.94	0.12	2.985	.16	.75
	2.540	2.980	.435		.842			2.980		
3	3.202	3.604	.503	0.19	.895	2.00	0.12	3.604	.16	.75
	3.197	3.599	.497		.889			3.599		
4	4.307	4.708	.503	0.22	.895	2.07	0.12	4.708	.22	1.00
	4.302	4.703	.497		.889			4.703		
6	6.362	6.929	.659	0.22	.963	2.25	0.12	6.929	.25	1.00
	6.357	6.924	.653		.957			6.924		

Note: Dimensions are in inches; tolerance shall be  $\pm 0.02$  for two place decimals,  $\pm 0.005$  for three place decimals; angles  $\pm 2^\circ$ , unless otherwise specified hereon.

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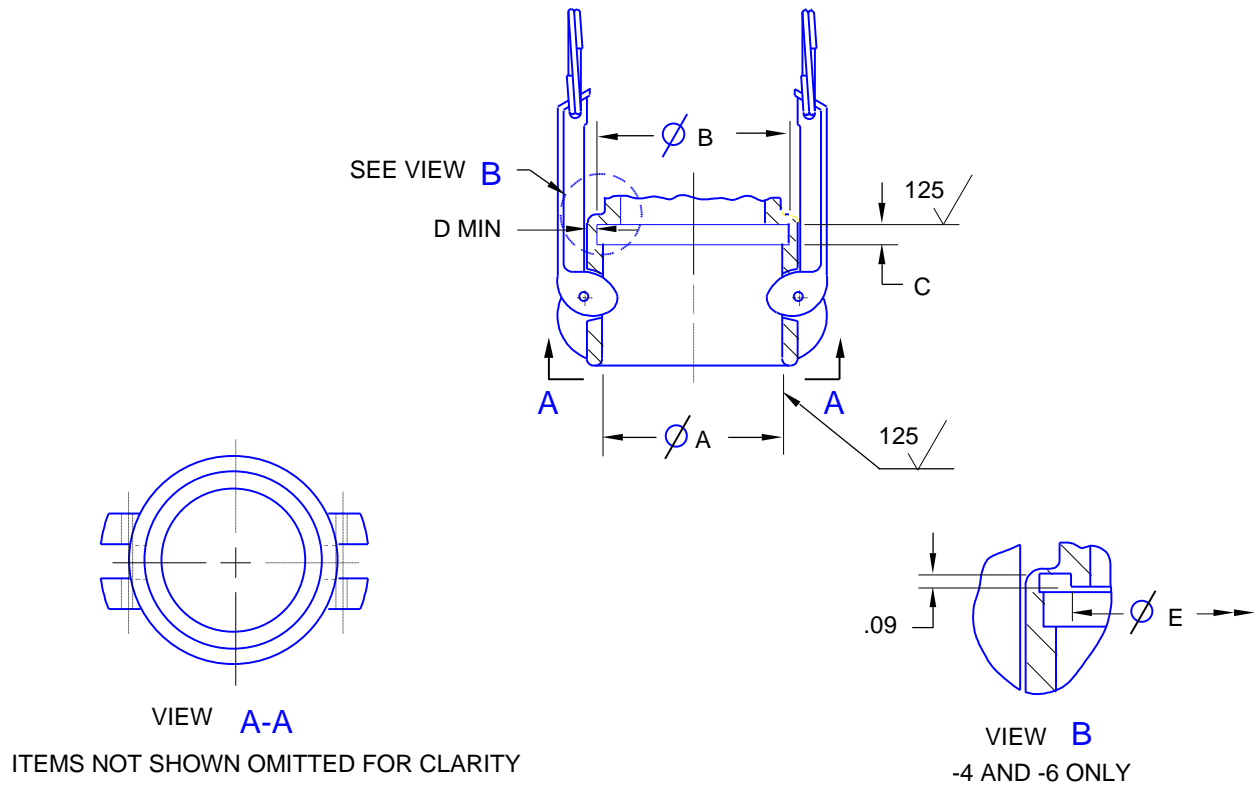


FIGURE 3. Coupling half, female.

TABLE III. Coupling half, female.

Nominal Size	Dimensions					Gasket (see figure 4)	Torque to close cam arms
	A	B	C	D	E		
½	1.276	1.42	.25	.094	NA	-1	60 inch lbs., max
¾	1.276	1.42	.25	.094	NA	-2	60 inch lbs., max
1	1.466	1.59	.28	.094	NA	-3	70 inch lbs., max
1¼	1.812	2.00	.28	.125	NA	-4	100 inch lbs., max
1½	2.125	2.25	.28	.125	NA	-5	100 inch lbs., max
2	2.510	2.69	.28	.125	NA	-6	100 inch lbs., max
2½	3.011	3.19	.28	.156	NA	-7	100 inch lbs., max
3	3.630	3.78	.28	.156	NA	-8	120 inch lbs., max
4	4.734	4.94	.28	.219	3.906	-9	150 inch lbs., max
6	6.950	7.14	.28	.219	5.906	-10	200 inch lbs., max

Note: Dimensions are in inches; tolerance shall be  $\pm .02$  for two place decimals,  $\pm .005$  for three place decimals; angles  $\pm 1^\circ$  unless otherwise specified hereon.

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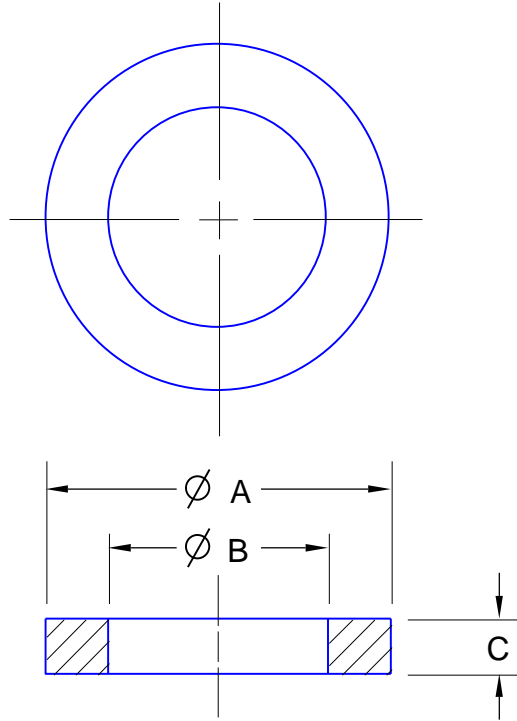


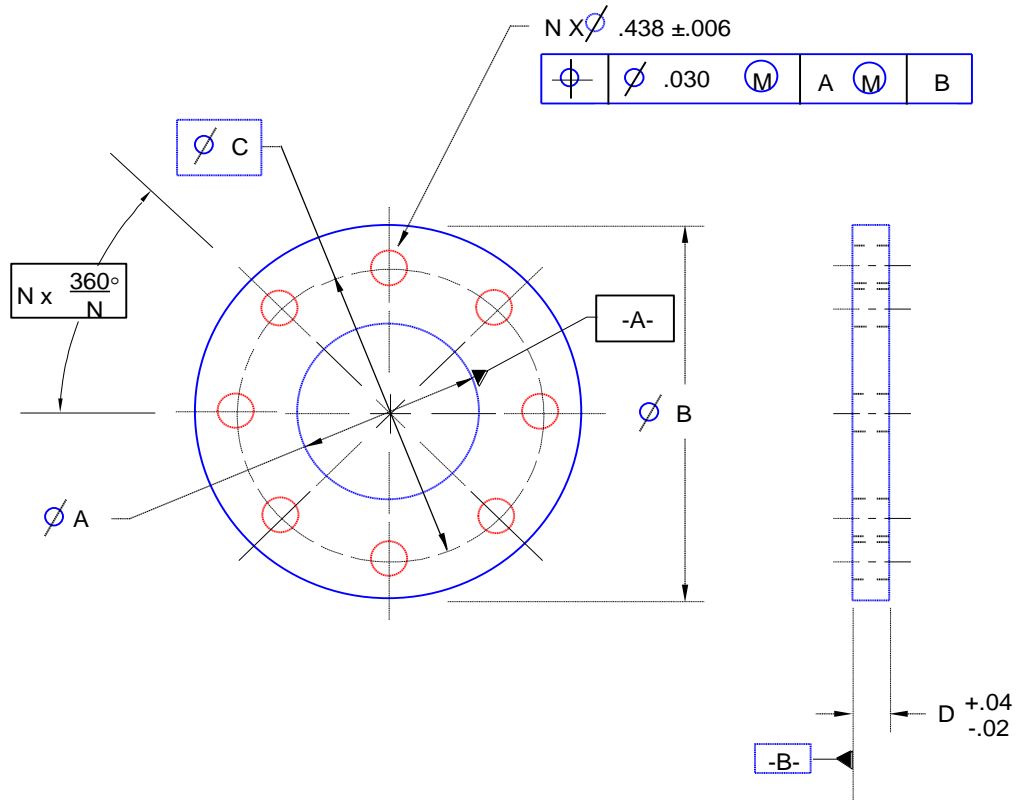
FIGURE 4. Gasket.

TABLE IV. Gasket dimensions and specifications.

Dash Number	Coupling Nominal Size	Dimension			Minimum gasket compression
		A	B	C	
-1	½	1.375	.875	.218	0.025 Ref
-2	¾	1.375	.875	.218	0.025 Ref
-3	1	1.563	1.063	.250	0.025 Ref
-4	1¼	1.938	1.359	.250	0.025 Ref
-5	1½	2.188	1.625	.250	0.025 Ref
-6	2	2.625	2.000	.250	0.025 Ref
-7	2½	3.125	2.375	.250	0.025 Ref
-8	3	3.719	3.000	.250	0.025 Ref
-9	4	4.875	4.000	.250	0.025 Ref
-10	6	7.063	6.000	.250	0.025 Ref

Note: Dimensions are in inches; tolerance for gaskets shall be  $\pm .015$  for three place decimals, unless otherwise specified.

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NOTE: For interpretation of geometric tolerancing symbology, see ASME Y14.5M.

FIGURE 5. Flange drilling template.

TABLE V. Flange dimensions.

Nominal size	Dimension				N (No. of holes)
	A	B	C	D	
2	2.00	4.500	3.750	.375	6
2½	2.50	5.000	4.250	.375	6
3	3.00	5.625	4.875	.375	8
4	4.00	6.625	5.875	.375	8
6	6.00	8.875	8.125	.500	12
1 X 2	1.00	4.500	3.750	.375	6
2 X 3	2.00	5.625	4.875	.375	8
2 X 4	2.00	6.625	5.875	.375	8
3 X 4	3.00	8.625	5.875	.375	8

Note: Dimensions are in inches, tolerance shall be  $\pm .02$  for two place decimals,  $\pm .005$  for three place of decimals, unless otherwise specified hereon.

MILITARY INTERESTS:

Custodians:

Army - AT  
Navy - YD  
Air Force - 99

Review Activities:

Army - AV, GL  
Navy - MC, SH  
Air Force - 71  
DLA - CC

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FAS

Preparing Activity:

Army - AT

(Project 4730-2011-090)

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