

INCH-POUND

A-A-50431A

November 7, 1991**SUPERSEDING**

A-A-50431

March 29, 1990

COMMERCIAL ITEM DESCRIPTION**COUPLINGS - QUICK DISCONNECT, BOWES TYPE
(AIR HOSES AND PIPING)**

The General Services Administration has authorized the use of this commercial item description.

This commercial item description covers quick-acting, self-locking couplings for pneumatic hose and piping connections where rapid coupling and uncoupling are required:

Coupling halves and fittings shall be of the following classes and sizes:

Class H.M. - Male coupling half with hose end for 7/16 inch, 1/2 inch, 5/8 inch, 3/4 inch, and 1-1/4 inch hose.

Class H.F. - Female coupling half with hose end for 7/16 inch, 1/2 inch, 5/8 inch, 3/4 inch and 1-1/4 inch hose.

Class O.M. - Male coupling half with pipe end (external thread) for 7/16 inch through 3/4 inch, or 1-1/4 inch pipe.

Class O.F. - Female coupling half with pipe end (external thread) for 7/16 inch through 3/4 inch, or 1-1/4 inch pipe.

Class Y.M. - Y-fitting with one female coupling inlet and two male coupling outlets for 7/16 through 3/4 inch size, or 1-1/4 inch size.

Salient characteristics:

Materials: Naval brass shall be used for all structural parts except that class Y.M. fittings may be made of cast bronze. Locking springs and retaining clips shall be made of phosphor-bronze. Gaskets shall be of oil resistant molded rubber suitable for compressed air service.

AMSC N/A

FSC 4730

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Naval brass shall be in accordance with ASTM Standard B 21, Copper Alloy UNS No. either C46400 or C48500. Cast bronze shall be in accordance with ASTM B 61, Copper Alloy UNS No. C92200.

The contractor shall provide a certificate of compliance, signed by the authorized quality representative, that certifies that all materials supplied comply with the purchase order and this commercial item description and its referenced standards.

Interchangeability: Coupling ends of all coupling halves and fittings for use with 7/16-inch, 1/2-inch, or 5/8-inch hose, as well as for 1/2-inch or 3/4-inch pipe, shall be completely interchangeable, lock effectively and maintain an airtight seal.

Coupling ends of all couplings for use with 1-1/4 inch hose and 1-1/4 inch pipe shall be completely interchangeable, lock effectively and maintain an airtight seal.

Where tolerances are not specifically mentioned, a plus or minus tolerance of 0.010 inch will be permitted in all dimensions for which such variations will not affect interchangeability.

Coupling Assembly and Details: Coupling assembly and details shall conform to figure 1.

Description of Classes:

Class H.M. The coupling half shall have a male Bowes type coupling half (fitted with self-locking clutch including spring, spring clip, and clutch-retaining ring) at one end, and a serrated hose shank at the other end, all conforming to figures 1, 2, and 3.

Class H.F. The coupling half shall have a female Bowes type coupling half (fitted with a U-shaped rubber gasket with lip facing hose shank) at one end, and a serrated hose shank at the other end, all conforming to figures 1, 2, and 3.

Class O.M. The coupling half shall have a male Bowes type coupling half (fitted with self-locking clutch including spring, spring clip, and clutch-retaining ring) at one end, and the opposite end shall be threaded with American National standard taper pipe threads, all conforming to figures 1, 2, and 3.

Class O.F. The coupling half shall have a female Bowes type coupling half (fitted with a U-shaped rubber gasket with lip facing hose shank) at one end, and the opposite end shall be threaded with American National standard taper pipe threads, all conforming to figures 1, 2, and 3.

Class Y.M. The Y-fitting shall have a female Bowes type coupling half (fitted with a U-shaped rubber gasket with lip facing opposite end) at one end, and two male Bowes type coupling halves (each fitted with self-locking clutch including spring, spring clip, and clutch-retaining ring) at the other end. The male ends shall be located approximately 30 degrees of arc on each side of the axis of the female end. If machined from bar stock, a class Y.M. shall be composed of a branch fitting and two class O.M. male pipe-end coupling halves, properly assembled as shown on figure 3. Alternatively, the fitting may be cast in a single piece. If of one piece construction, the fitting shall be in substantial compliance with the essential characteristics shown on figure 3.

Marking: Each coupling half or fitting shall be marked in a plain and permanent manner with the manufacturer's name or with a trademark of such known character that the source of manufacture can be readily determined.

Workmanship: Exposed surfaces shall be free from projections which may cause the coupling to unlock when the hose is dragged over uneven surfaces. Couplings shall be machined and free from rough surfaces which might injure the hands of the operator, except that the locking clutch shall be knurled and grooved or otherwise constructed to ensure a firm grip for the fingers.

Quality assurance provisions:

Responsibility for inspection. Unless otherwise specified in the contract or purchase order, the contractor is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the contractor may use his own 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.

Responsibility for compliance. All items must meet all requirements herein. 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 the specification shall not relieve the contractor of the responsibility of assuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling in quality conformance does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

For the purposes of inspection and testing, a lot shall consist of not more than 500 couplings of the same class and size, produced under essentially the same conditions, from the same lot of raw materials, offered for delivery at one time.

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A random sample of eight couplings shall be selected from each lot. The samples selected shall be subjected to the following tests and examinations, and if any sample fails to conform, the lot shall be subject to rejection:

Couplings shall withstand, without leakage or any other indication of failure, a hydrostatic pressure test of 250 pounds per square inch.

The compressive force to operate the couplings shall be 5 to 7 pounds. Samples shall be measured for compliance with this requirement.

Samples selected shall be visually and dimensionally examined to verify compliance with this commercial item description.

Regulatory requirements. In accordance with section 23.403 of the Federal Acquisition Regulations, the Government's policy is to acquire items composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing the contractor's employees to undue hazards from the recovered materials.

Preservation, packaging, packing, labeling, and marking. The preservation, packaging, packing, labeling, and marking shall be as specified in the contract order.

Notes. Purchaser should specify class and size of coupling halves or fittings required.

ASTM Standards B 21 and B 61 are available from the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

MILITARY INTERESTS:

CIVIL AGENCY COORDINATING ACTIVITIES:

Military Coordinating Activity:

GSA-FSS

Navy - SH

Custodians:

Navy - SH

Army - AR

Preparing activity:

Navy - SH

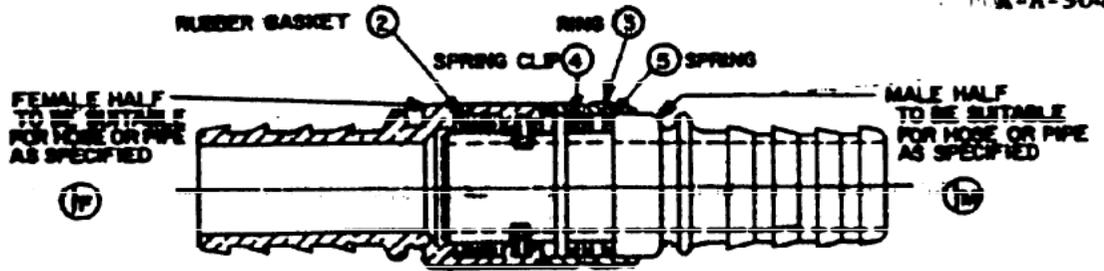
(Project 4730-0153)

User activities:

Navy - YD

Army - AL

FSC 4730



TYPICAL COUPLING ASSEMBLY (HOSE ENDS SHOWN)

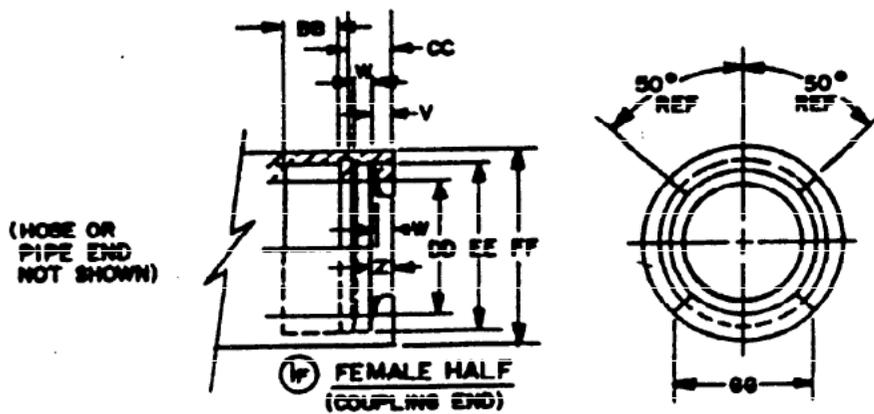
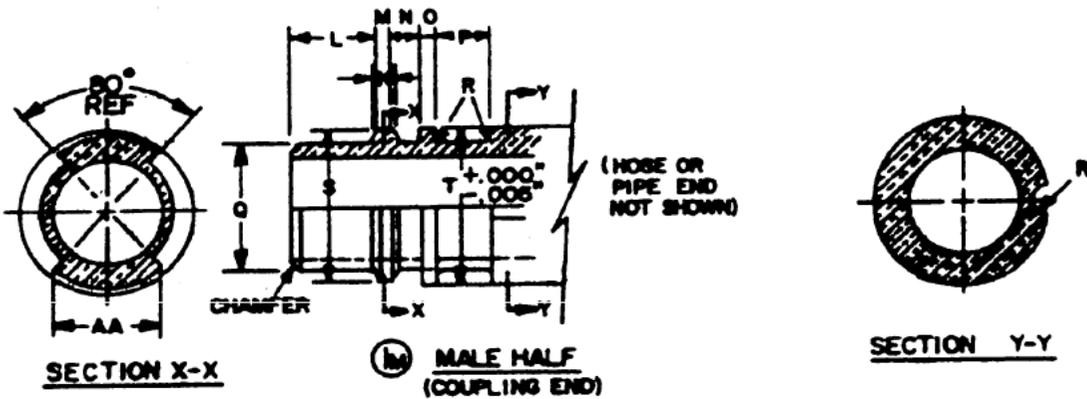
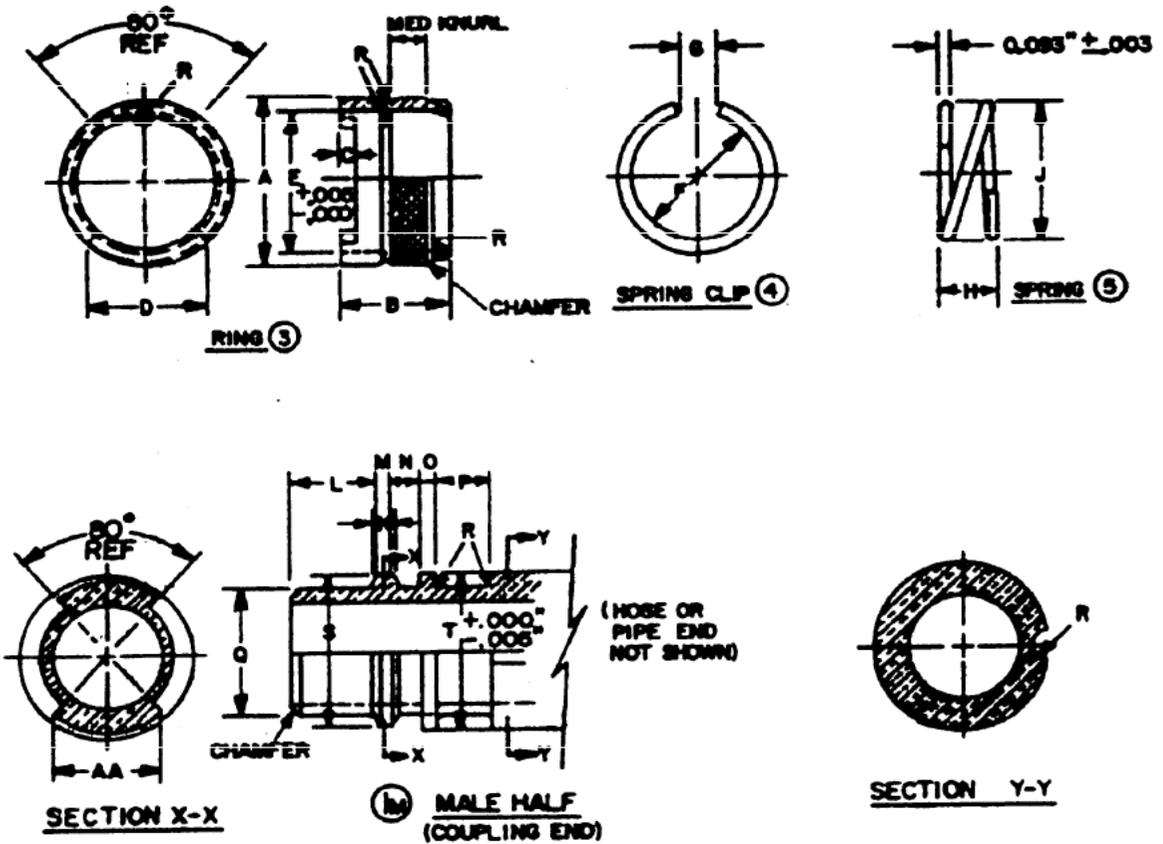
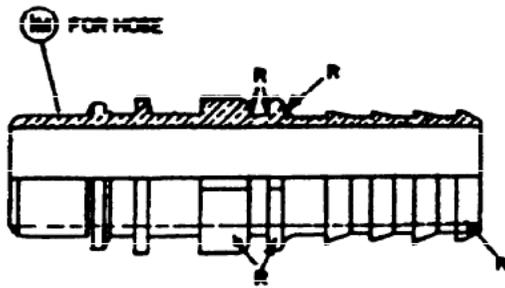


FIGURE 1. Coupling details.

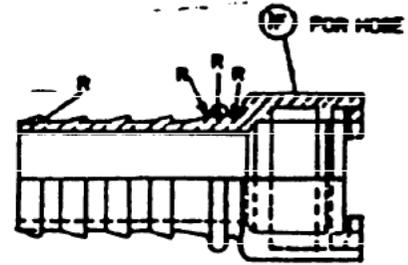
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Dimension (inches)	Nominal size of hose or pipe (inches)	
	7/16, 1/2, 5/8, 3/4	1-1/4
A	1-3/8	1-7/8
B	1-7/64	1-3/16
C	1/8	5/32
D	15/16	1-5/16
E	1-1/8	1-5/8
F	61/64	1-1/2
G	3/8	7/16
H	19/32	9/16
J	1-7/64	1-9/16
K	1/8	3/16
L	9/16	13/16
M	7/64	5/32
N	13/64	9/32
O	1/8	1/8
P	19/32	9/16
Q	3/4	1-9/32
R	Radius	Radius
S	1-1/64	1-37/64
T	1-1/8	1-5/8
U	1/8	3/16
V	7/64	9/64
W	3/32	1/8
Z	1/8	5/32
AA	23/32	1-1/16
BB	11/32	17/32
CC	1/4	11/32
DD	25/32	1-5/16
EE	1-1/16	1-5/8
FF	1-3/8	1-7/8
GG	15/16	1-5/16

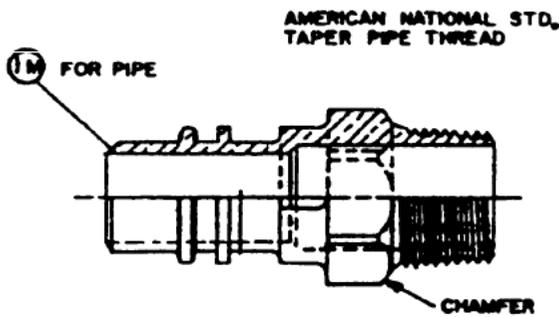
FIGURE 2. List of dimensions.



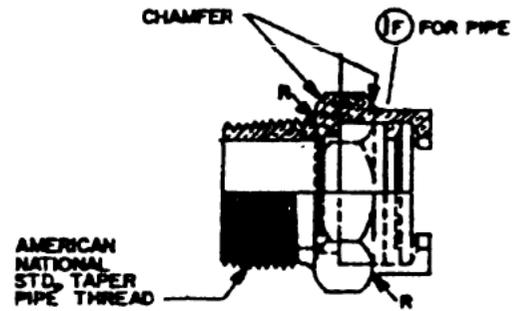
CLASS H, M, MALE COUPLING HALF WITH HOSE END



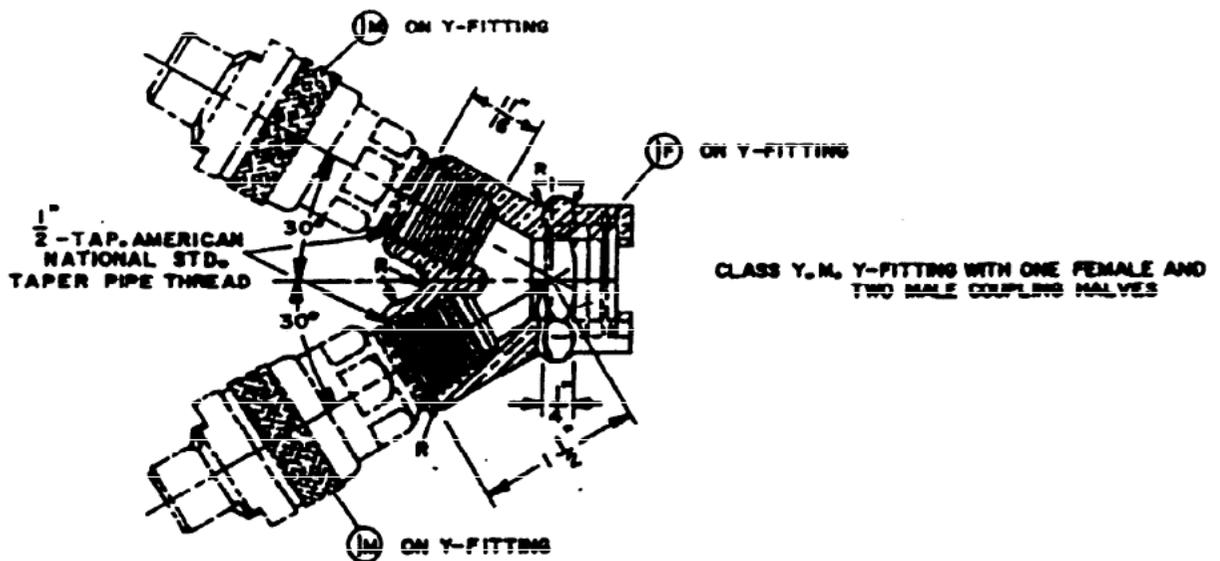
CLASS H, F, FEMALE COUPLING HALF WITH HOSE END



CLASS O, M, MALE COUPLING HALF WITH PIPE END



CLASS O, F, FEMALE COUPLING HALF WITH PIPE END



CLASS Y, M, Y-FITTING WITH ONE FEMALE AND TWO MALE COUPLING HALVES

FIGURE 3. Classes.

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.

1. DOCUMENT NUMBER	2. DOCUMENT DATE (YYMMDD)
A-A-50431A	911107
3. DOCUMENT TITLE	
COUPLINGS - QUICK DISCONNECT, BOWES TYPE (AIR HOSES AND PIPING)	
4. NATURE OF CHANGE (Identify paragraph number and include proposed rewrite, if possible. Attach extra sheets as needed.)	
5. REASON FOR RECOMMENDATION	
8. PREPARING ACTIVITY	
a. NAME TECHNICAL POINT OF CONTACT: Mr. Carl Banks, SEA 56Y23	b. TELEPHONE (Include Area Code) (1) Commercial (2) AUTOVON 703-602-0367 332-0367
c. ADDRESS (Include Zip Code) Commander, Naval Sea Systems Command SEA 5523 Washington, DC 20362-5101	IF YOU DO NOT RECEIVE A REPLY WITHIN 45 DAYS, CONTACT: Defense Quality and Standardization Office 5203 Leesburg Pike, Suite 1403, Falls Church, VA 22041-3466 Telephone (703) 756-2340 AUTOVON 289-2340