

INCH-POUND

WW-C-633D
11 May 1992
 SUPERSEDING
 WW-C-633C
 December 5, 1980

FEDERAL SPECIFICATION.

COUPLING HALVES, CAP AND WYE; QUICK DISCONNECT

PNEUMATIC HOSE, TWO-LUG UNIVERSAL TYPE

This specification was approved by the Assistant Administrator, Office of Federal Supply and Services, General Services Administration, for the use of all Federal Agencies.

1. SCOPE AND CLASSIFICATION

1.1 Scope. This specification covers two-lug universal, pneumatic hose, quick disconnect coupling halves, cap and wye.

1.2 Classification. The pneumatic hose fittings shall be of the following types, sizes and materials as specified in tables I and II.

Types -

- Type I - Coupling half, quick disconnect with male hose fitting end (figure 1).
- Type II - Coupling half, quick disconnect with female NPT fitting end (figure 2).
- Type III - Coupling half, quick disconnect with male NPT fitting end (figure 3).
- Type IV - Coupling half, quick disconnect, wye (figure 4).
- Type V - Coupling half, quick disconnect, cap (figure 5).

Sizes - inside diameter (ID) of hose

- | | |
|----------|----------|
| 1/4 inch | 5/8 inch |
| 3/8 inch | 3/4 inch |
| 1/2 inch | 1 inch |

Beneficial comments, recommendations, additions, deletions, and any data which may improve this document should be sent to: USA Belvoir Research, Development, and Engineering Center, ATTN: STRBE-TSE, Fort Belvoir, VA 22060-5606.

AMSC N/A

FSC 4730

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Material

Bronze
Malleable iron

2. APPLICABLE DOCUMENTS

2.1 Government documents.

2.1.1 Specifications and standards. The following specification and standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DoDISS) and supplement thereto, cited in the solicitation (see 6.2).

Military Specification

MIL-H-775 - Hose, Hose Assembly, Rubber Plastic, Fabric, or Metal (Including tubing) and Associated Hardware: Packaging of.

Military Standards

MIL-STD-105 - Sampling Procedures and Tables for Inspection by Attributes.
MIL-STD-129 - Marking for Shipment and Storage.
MIL-STD-130 - Identification Marking of U.S. Military Property.
MIL-STD-889 - Dissimilar Metals.

(Activities outside the Federal Government may obtain copies of Federal specifications, standards, and commercial item descriptions, as outlined under General Information in the Index of Federal Specifications and Standards, and Commercial Item Descriptions. The Index, which includes cumulative bimonthly supplements as issued, is for sale on a subscription basis by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(Single copies of this specification, other Federal specifications, and commercial item descriptions required by activities outside the Federal Government for bidding purposes are available without charge from General Services Administration Business Service Centers in Boston, MA; New York, NY; Philadelphia, PA; Washington, DC; Atlanta, GA; Chicago, IL; Kansas City, MO; Fort Worth, TX; Houston, TX; Denver, CO; San Francisco, CA; Los Angeles, CA; and Auburn, WA.)

(Federal Government activities may obtain copies of Federal standardization documents and the Index of Federal Specifications, Standards, and Commercial Item Descriptions from established distribution points in their agencies.)

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(Unless otherwise indicated, copies of military specifications and standards are available from the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

2.2 Non-Government publications. The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 47 - Ferritic Malleable Iron Castings.
- A 197 - Cupola Malleable Iron.
- B 61 - Steam or Valve Bronze Castings.
- B 584 - Copper Alloy Sand Castings for General Applications.
- B 633 - Electrodeposited Coatings of Zinc or Iron and Steel.
- D 3951 - Standard Practice for Commercial Packaging.

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.)

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- B 1.20.1 - Pipe Threads, General Purpose (Inch).

(Application for copies should be addressed to the American National Standards Institute, 1430 Broadway, New York, NY 10018).

(Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.)

3. REQUIREMENTS

3.1 Description. All pneumatic hose fittings, hereinafter called fittings, shall have the same size quick disconnect ends for interconnection of hoses regardless of hose sizes.

3.2 First article. Unless otherwise specified (see 6.2), a sample shall be subjected to first article inspection (see 6.3), in accordance with 4.3.

3.3 Materials. Materials shall be as specified herein (see 1.2). Materials not specified shall be selected by the contractor and shall be subject to all provisions of this specification.

3.3.1 Material deterioration prevention and control. The fittings shall be fabricated from compatible materials, inherently corrosion resistant or treated to provide protection against the

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various forms of corrosion and deterioration that may be encountered in any of the applicable operating and storage environments to which the fittings may be exposed.

3.3.1.1 Dissimilar metals. Dissimilar metals shall not be used in intimate contact with each other unless protected against galvanic corrosion. Dissimilar metals and methods of protection are defined and detailed in MIL-STD-889.

3.3.1.2 Identification of materials and finishes. The contractor shall identify the specific material, material finish or treatment for use with component and subcomponent, and shall make information available upon request to the contracting officer or designated representative.

3.3.2 Regulator requirements. In accordance with Federal Acquisition Regulation, section 23.403, 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.

3.3.3 Malleable iron. Malleable iron castings shall conform to ASTM A 197 or ASTM A 47, grade 32510.

3.3.4 Bronze. Bronze castings shall conform to ASTM B 61 or ASTM B 584, UNS C85700.

3.4 Coating. Malleable iron fittings shall be zinc-coated in accordance with ASTM B 633. Minimum film thickness shall not be less than .0015 mil.

3.5 Preformed packing. Preformed shall withstand an internal air pressure of 110 pounds per square inch (psi) and shall be furnished with each fitting.

3.6 Air pressure. Fittings shall withstand an internal air pressure of 110 pounds per square inch (psi) with the use of the preformed packing.

3.7 Physical requirements. The fittings shall be commercial design and shall provide for interconnection between all types of fittings covered by this specification. The fittings shall have external lugs to provide a locking arrangement that will permit connection or disconnection of any two of the fittings by turning one into the other a quarter of a turn. The fittings shall be furnished with lockwire holes. When the fittings are snapped together at least one of the lockwire holes on each fitting shall line up to receive a lockwire or safety pin.

3.8 Type I coupling. The type I coupling halves shall conform to the configuration shown in figure 1 (see 6.4), and shall be the size specified (see 1.2).

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3.9 Types II and III coupling halves. Type II and III coupling halves shall conform to the configuration shown in figures 2 and 3, respectively (see 6.4), and shall be the size specified (see 1.2) with ANSI B 1.20.1 NPT threads.

3.10 Types IV and V coupling halves. Type IV wye and type V cap shall conform to the configurations shown in figures 4 and 5, respectively (see 6.4).

3.11 Identification marking. The fittings shall be identified in accordance with MIL-STD-130. Marking shall include the letters "US" and the manufacturer's identification.

3.12 Workmanship. The fittings shall be clean and free from sand, dirt, sprues, scale and other harmful extraneous material. External surfaces shall be free from burrs, sharp edges, and corners except when sharp edges and corners are required.

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 specified herein. Except as otherwise specified in the contract, 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 assure that supplies and services conform to prescribed requirements.

4.1.1 Responsibility for compliance. All fittings must 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 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.

4.1.2 Component and material inspection. The contractor is responsible for ensuring that components and materials are manufactured, examined, and tested as specified in referenced specifications and standards, as applicable.

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

- a. First article inspection (see 4.3).
- b. Quality conformance inspection (see 4.4).
- c. Inspection of preparation for delivery (see 4.6).

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4.3 First article inspection.

4.3.1 First article examination. The first article shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.3.2 First article tests. The first article shall be tested as specified in 4.5.2. Failure of any test shall be cause for rejection.

4.4 Quality conformance inspection.

4.4.1 Sampling. Sample size for examination shall be determined in accordance with MIL-STD-105 (general inspection level I, using table I and table IIA).

4.4.2 Examination. Samples selected in accordance with 4.4.1 shall be examined as specified in 4.5.1. Presence of one or more defects shall be cause for rejection.

4.4.3 Tests. Samples selected in accordance with 4.4.1 shall be specified in 4.5.2. Failure of any test shall be cause for rejection.

4.5 Inspection procedure.

4.5.1 Examination. The fittings shall be examined as specified herein for the following defects.

101. Material not as specified (see 3.3).
102. Material not resistant corrosion and deterioration, or treated to be resistant to corrosion and deterioration for the applicable storage and operating environments (see 3.3.1).
103. Dissimilar metals, as defined in MIL-STD-889, are not effectively insulated from each other (see 3.3.1.1).
104. Contractor does not have documentation available for identification of material, material finishes, or treatment (see 3.3.1.2).
105. Used, rebuilt or remanufactured components, pieces, or parts incorporated in the fittings (see 3.3.2).
106. Malleable iron castings not as specified (see 3.3.3).
107. Bronze castings not as specified (see 3.3.4).
108. Coating for malleable iron fittings not as specified (see 3.4).
109. Preformed packing not as specified (see 3.5).
110. Air pressure not as specified (see 3.6).
111. Physical requirements not as specified (see 3.7).
112. Type I coupling not as specified (see 3.8).
113. Type II and III coupling halves not as specified (see 3.9).
114. Type IV and V coupling halves not as specified (see 3.10).
115. Identification marking not as specified (see 3.11).
116. Workmanship not as specified (see 3.12).

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4.5.2 Test. A leakage test shall be conducted by subjecting a pair of fittings, in which preformed packing is installed, to an internal pressure of 110 psi. Evidence of leakage shall constitute failure of this test.

4.6 Inspection of preparation for delivery. The preservation and packing shall be examined and tested in accordance with the quality assurance provisions of MLL-H-775. The marking shall be examined in accordance with MLL-STD-129.

5. PREPARATION FOR DELIVERY

5.1 Preservation. Preservation of the fitting shall be in accordance with the level A or C requirements of MIL-H-775, as specified (see 6.2).

5.2 Packing. Packing of the fittings shall be in accordance with the level A, B, or C requirements of MLL-H-775, as specified (see 6.2).

5.3 Marking.

5.3.1 Military agencies. Marking for military levels of protection shall be in accordance with MLL-STD-129. Commercial marking shall be in accordance with ASTM D 3951.

5.3.2 Civil agencies. Marking shall be as specified in the contract or purchase order.

6. NOTES

6.1 Intended use. The coupling halves, cap and wye, are intended for use with pneumatic hose and hose accessories that are commonly used with air compressors and pneumatic tools.

6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of the specification.
- b. Type, size and material requirement (see 1.2).
- c. Issue of DoDISS to be cited in the solicitation, and if required, the specific issue of individual documents referenced (see 2.1.1 and 2.2).
- d. When a first article is not required for inspection (see 3.2 and 4.3).
- e. Level of preservation and packing required (see 5.1 and 5.2).

6.3 First article. The first article should consist of one or more units. The contracting officer should include specific instructions in acquisition documents regarding arrangements for examinations, approval of the first article test results and disposition of the first articles. Invitation for bids should provide that the Government reserves the right to waive the requirement for samples for first article inspection to those

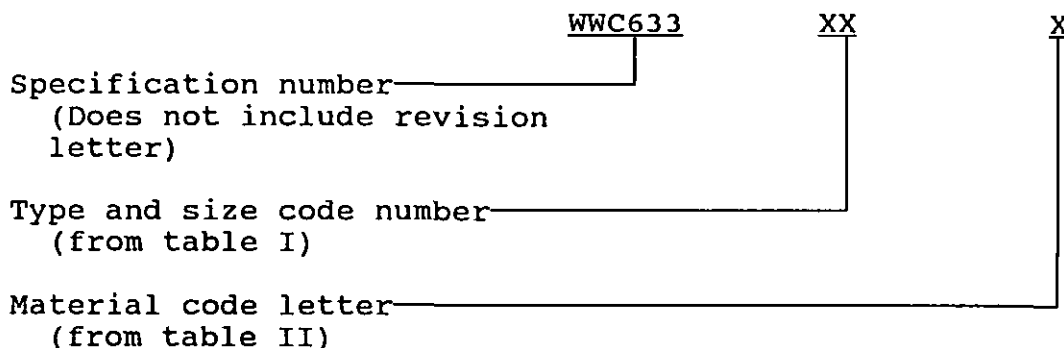
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bidders offering a product which has been previously acquired or tested by the Government, and that bidders offering such products, who wish to rely on such production or test, must furnish evidence with the bid that prior Government approval is presently appropriate for the pending contract. Bidders should not submit alternate bids unless specifically requested to do so in the solicitation.

6.4 Information figures. Figures 1 through 5 show the types of fittings which have been found acceptable; however, the fittings are included for illustration only and are not intended to preclude the furnishing of other fittings which conform to this specification.

6.5 For civil agency procurement. When level B packaging is required for civil agency procurements, the level A requirements in 5.1 should apply.

6.6 Part or identifying number. The part or identifying number (PIN) for the pneumatic hose fittings covered by this specification should be designated as follows:



6.6.1 Type and size of fitting. The size (see 6.2) and type of hose fittings are identified by two digits (see table 1).

.. TABLE I. Type and size code number.

Size	Types				
	I	II	III	IV	V
None				16	17
1/4		06	11		
3/8	01	07	12		
1/2	02	08	13		
5/8	03				
3/4	04	09	14		
1	05	10	15		

6.6.2 Material. The material of which the pneumatic hose fitting is made is identified by a single letter (see table II).

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TABLE II. Material code letter.

Code Letter	Material
B M	Bronze Malleable iron

Example of part number: WWC633-04-B for a 3/4-inch, type I, bronze fitting with male hose.

6.7 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.

6.8 Subject term (key word) listing.

Air compressor fittings
Pneumatic hose coupling halves
Pneumatic tools fittings
Two-lug, universal type, quick disconnect couplings

6.9 Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

MILITARY INTERESTS:

Custodians:

Army - ME
Navy - YD

Review activity:

DLA - CS

User activities:

Army - AL
Navy - OS, SA, MC

CIVIL AGENCY COORDINATING ACTIVITIES:

GSA - FSS - 7FXE
DOT - ACO, FAA
HSS - FEC
USDA - AFS

Preparing activity:

Army - ME

Project 4730-0611

Orders for this publication are to be placed with General Services Administration, acting as an agent for the Superintendent of Documents. See section 2 of this specification to obtain extra copies and other documents referenced herein.

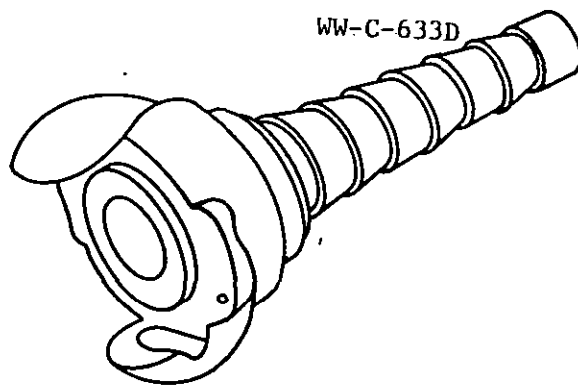


FIGURE 1. HOSE END COUPLING, TYPE I.

X-2623

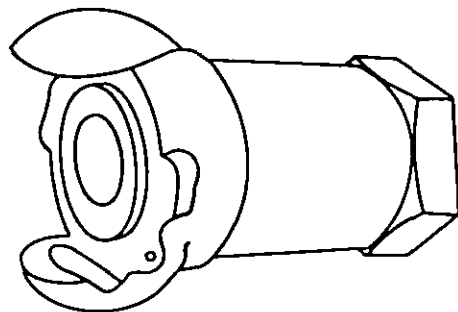


FIGURE 2. FEMALE-THREAD COUPLING, TYPE II.

X-2624

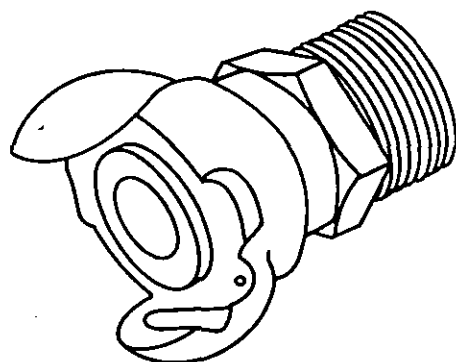


FIGURE 3. MALE-THREAD COUPLING, TYPE III.

X-2625

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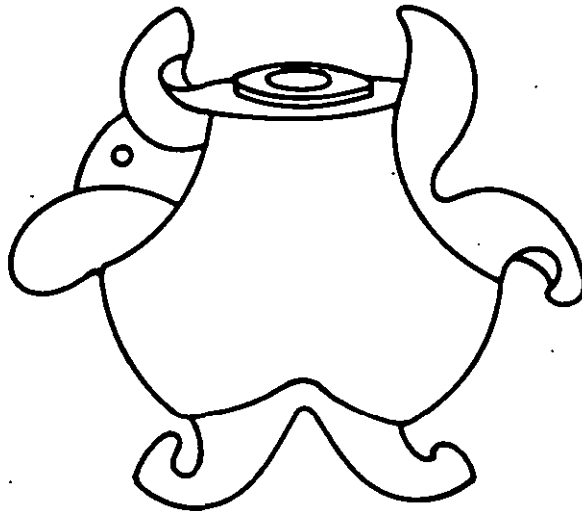


FIGURE 4. Three-way (wye) coupling, Type IV

X-2626A

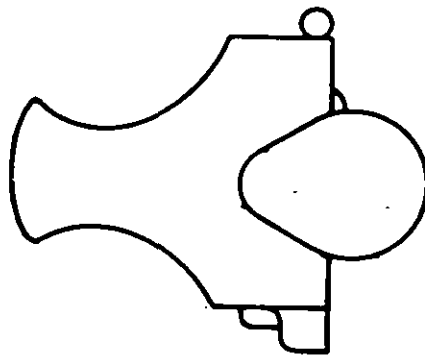


FIGURE 5. Dead-end (cap) coupling, Type V

X-2627A

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.

RECOMMEND A CHANGE:	1. DOCUMENT NUMBER W-C-633D	2. DOCUMENT DATE (YYMMDD) 920511
3. DOCUMENT TITLE Coupling Halves, Cap and Wye; Quick Disconnect Pneumatic Hose, Two-Lug Universal Type		
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 (if applicable) (2) AUTOVON	7. DATE SUBMITTED
8. PREPARING ACTIVITY		
a. NAME Carolyn B. Johnson	b. TELEPHONE (Include Area Code) (1) Commercial (703) 704-3468	(2) AUTOVON 654-3468
c. ADDRESS (Include Zip Code) US Army Belvoir RDE Center ATTN: STRBE-TSE Fort Belvoir, VA 22060-5606	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	