

MIL-H-26633C(USAF)

10 Jun 85

SUPERSEDING

MIL-H-26633B(USAF)

11 Aug 1965

## MILITARY SPECIFICATION

## HOSE ASSEMBLY, POLYTETRAFLUORETHYLENE, OXYGEN

This specification is approved for use by the Department of the Air Force, and is available for use by all Departments and Agencies of the Department of Defense.

## 1. SCOPE

1.1 Scope. This specification covers an oxygen polytetrafluorethylene hose assembly having a nominal working pressure of 3,000 psig in the operating temperature range from -65° to +160°F.

\* 1.2 Specification part number. The definitive specification part number will be formatted to identify each item covered by this specification. The part number format will consist of the specification number, length (in feet), and coupling guard (as required) as follows (see 3.6):

Definitive Specification Part Number	MS26633 - XXX X
Military Specification Number	_____
Length in feet (3 places)	_____
Coupling guard (required add "A" - not required leave blank)	_____

Example: M26633-075A - A 75-foot hose assembly with coupling guard.

## 2. APPLICABLE DOCUMENTS

\* 2.1 Government documents.

2.1.1 Specifications and standards. Unless otherwise specified (see 6.2), the following specifications and standards of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation, form a part of this specification to the extent specified herein.

## SPECIFICATIONS

## FEDERAL

BB-N-411	Nitrogen, Technical
BB-A-1034	Air, Compressed For Breathing Purposes
PPP-B-601	Boxes, Wood, Cleated Plywood
PPP-B-636	Box, Shipping, Fiberboard
PPP-B-676	Boxes, Set-Up.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: the Engineering Division, San Antonio ALC/MMEDO, Kelly AFB, TX 78241 by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

FSC 4720

## MIL-H-26633C(USAF)

## MILITARY

MIL-P-116	Preservation, Methods of.
MIL-B-117	Bag, Sleeve and Tubing, Interior Packaging.
MIL-R-3065	Rubber, Fabricated Parts.
MIL-C-5501	Cap and Plug, Protective, Dust and Moisture Seal.

## STANDARDS

## MILITARY

MIL-STD-129	Marking for Shipment and Storage.
MIL-STD-143	Standards and Specifications, Order of Precedence for the Selection of.
MIL-STD-794	Part and equipment, Procedures for Packaging and Packing of.
MIL-STD-831	Test Reports, Preparation of.
MIL-STD-1186	Cushioning, Anchoring, Bracing, and Waterproofing; with Appropriate Test Methods.
MS28760	Fitting End, Attachable, Hydraulic and Pneumatic, High Pressure Hose (3,000 psi) Flared Tube.
MS33656	Fitting End, Standard Dimensions for Flared Tube Connection and Gasket Seal.

## Air Force - Naval Aeronautical

AN818	Nut, Tube Coupling, Short.
-------	----------------------------

\* (Copies of specifications, standards, handbooks, drawings, and publications required by manufacturers in connection with specific acquisition functions should be obtained from the contracting activity or as directed by the contracting officer).

\* 2.1.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. The issues of the documents which are indicated as DoD adopted shall be the issue listed in the current DoDISS and the supplement thereto, if applicable.

Uniform classification committee  
Uniform freight classification rules

(Application for copies should be addressed to the Uniform classification committee, Tarif Publication Officer, Room 1106, 222 South Riverside Plaza, Chicago, IL 60606).

## AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM D-1457	PTFE Molding and Extrusion Materials.
ASTM D-792-66R75	Plastics, Specific Gravity and Density Of, By Displacement
ASTM D-3951	Standard Practice for Commercial Packaging.

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

2.1.3 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.

## MIL-H-26633C (USAF)

## 3. REQUIREMENTS

3.1 Qualification. The hose assemblies furnished under this specification shall be products which are qualified for listing on the applicable qualified products list at the time set for opening of the bids (See 4. and 6.).

3.2 Selection of specifications and standards. Specifications and standards for necessary commodities and services not specified herein shall be selected in accordance with MIL-STD-143.

3.3 Materials.

3.3.1. Fungusproof materials. Materials that are nutrients for fungi shall not be used where it is practical to avoid them.

3.3.2 Rubber goods. Rubber goods utilized, such as seals, covers, friction layers, et cetera, shall be fabricated from rubber components conforming to MIL-R-3065.

3.3.3 Other materials. Materials not otherwise specified shall conform to applicable specifications and to the requirements specified herein. All materials that are not specifically described shall be of the highest quality and suitable for the purpose intended.

3.4 Design and construction. The hose assembly shall be designed for a 99.5 percent purity gaseous oxygen working pressure of 3,000 psig and a minimum hydrostatic burst pressure of 12,000 psig.

3.4.1 Reliability. The hose assembly shall have a minimum mean-time-between-failure (MTBF) of 870 cycles (0 to 3,000 to 0 psi) with a minimum reliability of 97 percent for a 20-cycle (0 to 3,000 to 0 psi) mission at a confidence factor of .90. (See 6.4.2 and 6.4.3)

3.4.2 Hose. The hose shall be constructed to meet the requirements specified herein and to retain the end fittings without slipping or leaking when tested as specified herein. The hose shall consist of an inner tube, reinforcement, and outer cover.

3.4.2.1 Inner tube. The inner tube shall be a seamless, uniform gage extrusion of virgin tetrafluorethylene resin. It shall be compounded and processed to permit the least amount of effusion of compressed gases consistent with the other requirements specified herein. The inner tube shall have a smooth bore, shall be free from pitting and other defects, and shall be cleaned to be free of dirt, foreign material, or mandrel lubricants.

3.4.2.1.1 Tetrafluorethylene material. The tetrafluorethylene hose resin shall conform to ASTM D 1457-8/A type III; except the specific gravity shall be 2.125 to 2.155 at 77° ± 2°F when determined in accordance with method A of ASTM D 792-66R75.

3.4.2.2 Reinforcement. The reinforcement shall consist of one or more spirally wrapped or braided (or combination thereof) plies of stainless-steel wires. Reinforcement separation materials, if used, shall permit gas effusion from the inner tube to escape to the atmosphere. There shall be no broken or spliced reinforcing wires nor shall any wires be omitted in any length of hose.

## MIL-H-26633C(USAF)

3.4.2.3 Outer cover. A cover at least .063 inch thick shall be furnished on the outside of the hose. The cover shall consist of an abrasion, oil, and ozone-resistant chloroprene polymer, or equivalent synthetic material compound to meet the requirements specified herein. The cover need not be bonded to the outermost reinforcement ply, but shall not be free to slip or turn along the length of hose. The cover shall permit gas that may effuse from the inner tube to escape to the atmosphere.

3.4.2.4 Diameter. The inside and outside diameters of the hose shall be within the limits shown on figure 1 (see 6.2).

3.4.2.5 Length. The hose assembly shall be furnished in lengths as specified by the procuring activity (see 6.2). The hose assembly length shall be measured as shown on figure 1.

3.4.3 End fittings. The hose assembly end fittings shall conform to the general configuration shown on MS28760, shall be made of stainless-steel, and shall mate with a -5 fitting conforming to MS33656. The swivel nut dimensions across flats shall conform to the -5 size of AN818. Provisions for wrenching by a hex or flats on the fitting body shall be optional. The nipple bore diameter shall conform to the limits shown on figure 1. The end fitting shall be designed for a working pressure of 3,000 psig and a minimum burst pressure of 12,000 psig. The end fittings shall be retained on the assembly without slipping or leaking when coupled to the hose and tested as specified herein.

3.4.3.1 Coupling guard. When specified (see 6.2), a coupling guard shall be securely attached to each end of the hose assembly. The coupling guard shall protect the end portions of the hose assembly as necessary to minimize hose failure due to bending at or near the coupling.

3.4.3.2 Lubricants. With the exception of clean water, lubricants shall not be used in the assembly of hose components unless such lubricants have been specifically approved by the procuring activity.

### 3.5 Performance.

3.5.1 Proof pressure. The hose assembly shall withstand a hydrostatic pressure of 6,000 psig (see 4.6.2).

3.5.2 Leakage. The hose assembly shall not leak when subjected to a pneumatic pressure of 3,000 psig (see 4.6.3).

3.5.3 Cold temperature flexing. The hose assembly shall withstand flexing through 180 degrees at  $-65^{\circ} \pm 2^{\circ}\text{F}$  (see 4.6.4).

3.5.4 Elongation and contraction. The hose assembly shall withstand pressurization to 3,000 psig without a change in its free length greater than  $\pm 3$  percent (see 4.6.5).

3.5.5 Tensile strength. The hose assembly shall withstand a tensile pull of 1,000 pounds while pressurized to 3,000 psi (see 4.6.6).

3.5.6 Burst pressure. The hose assembly shall withstand, without bursting, pressurization of 12,000 psig (see 4.6.7).

3.5.7 Overtightening torque. The end fittings specified in 3.4.3 shall withstand an overtightening-torque value of 315 pound-inches without failure or deformation (see 4.6.9).

## MIL-H-26633C(USAF)

3.5.8 Pressure impulse cycling. The hose assembly shall withstand 2,000 pressure impulse cycles when tested in accordance with 4.6.10.

\* 3.6 Identification of product. Each hose assembly shall be identified by a permanently attached snug-fitting aluminum or stainless-steel band around the hose near the end fitting. Where the hose assembly exceeds 4 feet in length, a band shall be attached near each end fitting of the assembly. The metal band shall be marked in raised, etched, or stamped lettering with the following information appropriately identified:

- a. Number and title of this specification.
- b. Date of assembly in month and year.
- c. The rated working pressure in psi, followed by the work "OXYGEN".
- d. Hose assembly manufacturer's name or trademark.
- e. Manufacturer's part number.
- f. Hose manufacturer's federal supply code number if different from hose assembly manufacturer.
- g. Federal supply classification number (FSC 4720) followed by the national item identification number (NIIN), if available. If not available, follow the class with NSL (Not Stock Listed).
- h. Specification part number (see 1.2).

3.7 General cleaning instructions. Prior to and during assembly, hose assembly components shall be cleaned in accordance with the highest commercial standards. Metal chips, hose cuttings, and other foreign material shall be removed during and after final assembly. Following completion of fabrication and assembly operations, the hose assembly shall be thoroughly cleaned.

3.7.1 The hose assembly shall be cleaned to assure compatibility with 99.5 percent purity oxygen at a pressure of 4,000 psig and compliance with the cleaning effectiveness requirements of 4.6.11. The cleaning methods and procedures shall be optional. The hose assembly shall not be adversely affected by the cleaning method or procedures.

3.7.1.1 Fluids for cleaning and flushing. Fluids used for cleaning and flushing or as a carrier for cleaning solutions shall be cleaned and grease-free and shall contain not more than 50 ppm of suspended or dissolved impurities. Water used for flushing or rinsing shall be demineralized and shall have a specific resistance of at least 50,000 ohms. Fluids or solutions that would react chemically with any part of the hose assembly shall not be used.

3.7.1.2 Gas used for purging and drying purposes shall be cleaned, dry, oil-free air or nitrogen having a dewpoint at 0 psig of not more than 30°F and shall contain not more than 3 parts per million by volume of total hydrocarbons expressed as methane equivalent. Only water pumped dry nitrogen per BB-N-411 (Type I, Class 1, Grade A or B) or water pumped dry air per BB-A-1034 (Source I Grade A or Source II, Grade C) shall be used for drying and purging purposes.

3.8 Workmanship. Workmanship shall be of the quality necessary to produce hose assemblies free from defects that will affect proper functioning in service.

## MIL-H-26633C (USAF)

## 4. QUALITY ASSURANCE PROVISIONS

\* 4.1 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 purchase 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 each inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.2 Classification of Inspection. The inspection and testing of the hose assembly shall be classified as follows:

- a. Qualification Inspection (see 4.3).
- b. Quality Conformance Inspection (see 4.4).

4.3 Qualification Inspection. (See 6.3).

4.3.1 Qualification sampling. Six hose assemblies, 24  $\pm$ 6 inches long, shall be fabricated from random samples of the bulk hose and end fittings using production processes and procedures and subjected to the qualification tests. Samples for tensile and burst tests may be reduced to 18  $\pm$ 6 inches long if necessary because of test equipment limitations. Allocation of test samples and testing shall be in accordance with the following schedule:

<u>Test</u>	<u>Sample Number</u>					
	1	2	3	4	5	6
Examination of product (see 4.6.1)	X	X	X	X	X	X
Proof pressure test (see 4.6.2)	X	X	X	X	X	X
Leakage test (see 4.6.3)	X	X	X	X	X	X
Cold temperature flexing test (see 4.6.4)	X	X				
Elongation and contraction test (see 4.6.5)	X	X				
Tensile strength test (see 4.6.6)			X	X		
Burst pressure test (see 4.6.7)			X	X		
Dimension inspection (see 4.6.8)	X	X	X	X	X	X
Overtightening torque test (see 4.6.9)	X	X				
Pressure impulse cycling (see 4.6.10)					X	X

4.3.2 Test report. Upon completion of the qualification tests, a test report in accordance with MIL-STD-831 shall be forwarded to the preparing activity.

4.3.3 Qualification retention. Retention of qualification is governed by provisions of DOD 4120.3-M.

## MIL-H-26633C(USAF)

4.4 Quality conformance inspections.

4.4.1 Inspection lot. A lot consists of 500 hose assemblies or fraction thereof offered for inspection at the same time.

4.4.2 Sampling. Each hose assembly shall be inspected as follows in the order listed:

- a. Examination of product (see 4.6.1)
- b. Proof pressure (see 4.6.2)
- c. Leakage (see 4.6.3)

4.4.2.1 Lot samples for quality conformance tests. From each lot, four assemblies, 18  $\pm$  6 inches long, shall be fabricated using production processes and procedures and tested as follows:

	<u>Sample number</u>			
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>
Dimension inspection (see 4.6.8)	X	X	X	X
Proof pressure (see 4.6.2)	X	X	X	X
Leakage (see 4.6.3)	X	X	X	X
Tensile strength (see 4.6.6)	X	X		
Burst pressure (see 4.6.7)	X	X		
Pressure impulse cycling (see 4.6.10)			X	X

4.4.3 Quality assurance certification records. Contractor shall maintain test records of 4.4.2.1 available for government inspection.

4.4.4 Noncompliance. If one sample fails the specified requirements of 4.4.2.1, two additional samples from the same lot shall be tested in the same manner. If more than one of the four original samples or either of the two additional samples fail, the entire lot shall be rejected.

4.5 Inspection of preparation for delivery. The inspection of the preservation, packaging, packing, and marking shall be in accordance with the requirements of section 5 herein.

4.6 Test methods.

4.6.1 Examination of product. The hose assembly shall be visually examined to determine compliance with the requirements specified herein with respect to materials, workmanship, length, and marking.

4.6.2 Proof pressure test. The hose assembly shall be subjected to 6,000 psig hydrostatic pressure for not less than 30 seconds nor more than 5 minutes. Clean water shall be used as the pressurizing fluid. Any indication of leakage, distortion, or other malfunction shall be cause for rejection. (see 3.5.1)



## MIL-H-26633C(USAF)

4.6.3 Leakage test. The hose assembly shall be pressurized to 3,000 psig pneumatic pressure with the assembly under clear water. The pressure shall be maintained for not less than 1 minute nor more than 15 minutes. Indication of rapid forming and breaking away of bubbles from any point on the outer surface of the hose or any part of the end fitting shall be cause for rejection. In the event of a dispute, the effusion from any 12 inch section of the hose assembly shall be collected in an inverted graduate for 15 minutes. At the end of 15 minutes, the amount of gas accumulated in the graduate shall not exceed 25 cc. (See 3.5.2)

4.6.4 Cold temperature flexing test. The hose assembly shall be placed in a cold chamber and soaked at  $-65^{\circ} \pm 2^{\circ}$  F for 24 hours. At the end of the soaking period, and with the assembly still at the specified temperature, the assembly shall be flexed through 180 degrees to the applicable bend radius shown on figure 1 and then straightened. The assembly shall again be flexed through 180 degrees to the same bend radius in such a direction that the portion of the hose under maximum compression during the first flexing will be under maximum expansion during the second. The sample shall be flexed in both directions within 4 seconds. The hose assembly shall be visually examined, and then subjected to the leakage test specified in 4.6.3. Any hose assembly showing evidence of cracking, splitting, distortion, or leakage shall be considered to have failed the test. (See 3.5.3)

4.6.5 Elongation and contraction test. The hose assembly shall be placed in a straight position with one end unrestrained. Before applying pressure, the free length of the assembly shall be measured. The assembly shall then be pressurized to 3,000 psig and maintained at that pressure for 5 minutes. At the end of 5 minutes and while still at the test pressure, the change in free length shall be measured and shall not exceed +3 percent (elongation) or -3 percent (contraction). (See 3.5.4)

4.6.6 Tensile strength test. The hose assembly shall be placed in a straight position and pressurized to 3,000 psig using a suitable liquid. While pressurized, the hose shall be pulled by the end fittings to 1,000 pounds tensile pull at the minimum rate of 1 inch per minute. Any failure below 1,000 pounds pull shall be cause for rejection. (See 3.5.5)

4.6.7 Burst pressure test. The hose assembly shall be placed in a straight position with one end unrestrained. The assembly shall be pressurized with a suitable fluid. The rate of pressure rise shall be 20,000  $\pm$  5,000 psi per minute until failure occurs. If any component of the hose assembly bursts or cracks at less than 12,000 psi, it shall be cause for rejection. (See 3.5.6)

4.6.8 Dimension inspection. The hose shall be checked to determine compliance with the dimension requirements specified on figure 1. A hose found to exceed the tolerance limits specified shall be cause for rejection. (See 3.4.2.4 and 3.4.2.5)

4.6.8.1 Fitting dimensions inspection. The hose assembly, with end fittings attached, shall be checked to determine compliance with the end fitting dimension requirements specified in 3.4.3. A hose assembly having end fittings outside the tolerance limits specified shall be cause for rejection.

4.6.9 Overtightening torque test. The flared end fittings of the hose assembly shall be assembled on a fitting of steel construction conforming to MS33656. The fitting shall be tightened to an overtightening torque of 315 pound-inches and loosened. The tightening and loosening sequence shall be



## MIL-H-26633C(USAF)

repeated until a total of not less than 15 cycles have been performed. The end fittings shall then be removed and examined for damage. Evidence of failure, thread damage, or deformation of the end fitting assembly, or difficulty in turning the swivel nut on the nipple by hand, shall be cause for rejection (see 3.5.7).

4.6.10 Pressure impulse cycling. The hose assembly shall be fixed in a semicircular position with the longitudinal axes of the end fittings parallel. The hose assembly shall then be subjected to a hydraulic or pneumatic pressure impulse cycle from 0 to 3,000 to 0 psig at a rate of not less than  $60 \pm 10$  cpm for not less than 2,000 cycles. The hose assembly shall be visually examined, and then subjected to the leakage test specified in 4.6.3. Any hose assembly showing evidence of cracking, splitting, distortion, or leakage shall be considered to have failed the test. (see 3.5.8)

4.6.11 Cleaning effectiveness. One hose assembly shall be selected at random from each lot of two hundred hose assemblies, or fraction thereof, that have been cleaned in accordance with 3.7.1 and subjected to the following test:

4.6.11.1 The hose assembly shall be filled with flushing water conforming to 3.7.1.1 and, while filled, the entire length of hose assembly including end fittings shall be brushed internally with a clean brush having a diameter at least .063 inch larger than the inside diameter of the hose.

4.6.11.2 After the brushing operation, the water shall be drained from the hose assembly into a clean beaker or similar container. The water in the beaker shall be vigorously agitated, and a  $50 \pm 5$  cc sample shall be transferred to an evaporating dish before any residue can again settle to the bottom of the beaker.

4.6.11.3 The measured sample shall then be evaporated to dryness of  $221^{\circ}\text{F}$  and the residue weighed and microscopically examined. Evidence of particle sizes larger than 100 microns or a total residue weight of more than 1 milligram per milliliter of original measured sample shall be cause for rejection of the lot. If the lot is rejected, the hose assemblies shall be recleaned in accordance with 3.7.1 and a new sample taken for compliance with this test. If the test shows the cleaning methods to be satisfactory, the hose assembly shall be dried with drying gas conforming to 3.7.1.2 and preserved and packaged with the remainder of the lot.

4.6.12 Reliability demonstration and test. Satisfactory completion of all tests specified herein demonstrates compliance with the quantitative reliability requirements of this specification.

\* 5. PACKAGING

\* 5.1 Preservation and packaging. Preservation and packaging shall be level A, C or commercial/industrial as specified (see 6.2).

\* 5.1.1 Level A. Immediately after cleaning and drying as specified in 3.7, the end fittings of each hose shall be capped or plugged with closures conforming to MIL-C-5501. Each hose assembly shall be coiled with a diameter not less than 10 inches and preserved in accordance with method 1C of MIL-P-116 without a contact preservative. Polyethylene heat-sealed, type I bags conforming to MIL-B-177 may be used for method 1C protection.

MIL-H-26633C(USAF)

- \* 5.1.2 Intermediate packaging. Hose assemblies packaged as specified in 5.1.1 shall be intermediately packaged in a container conforming to PPP-B-676. Closure shall be in accordance with the container specification or appendix thereto.
- \* 5.1.3 Level C. The level C preservation for hose assemblies shall conform to the MIL-STD-794 requirements of this level.
- \* 5.1.4 Commercial. Preservation of hose assemblies shall be in accordance with the requirements of ASTM D 3951.
- \* 5.2 Packing. Packing shall be level A, B, C or commercial/industrial, as specified (see 6.2).
- \* 5.2.1 Level A. Hose assemblies, preserved and packaged as specified in 5.1.1, shall be packed in containers conforming to PPP-B-601, overseas type. The closure shall be in accordance with the appendix of the container specification.
- \* 5.2.2 Level B. Hose assemblies, preserved and packaged as specified in 5.1.1, shall be packed in a container conforming to PPP-B-636, weather resistant. The closure shall be in accordance with the appendix of the container specification.
- \* 5.2.3 Level C. Hose assemblies, preserved and packaged, as specified in 5.1.1, shall be packed in a manner to insure carrier acceptance and safe delivery at destination. Containers shall be in accordance with either the uniform freight classification rules or regulations of the carriers applicable to the mode of transportation.

or

Commercial/industrial packing of hose assemblies shall be in accordance with the requirements of ASTM D 3951.

- \* 5.3 Physical protection. Shipping and intermediate containers shall be cushioned in accordance with MIL-STD-1186.
- \* 5.4 Marking. Interior packages and exterior shipping containers shall be marked in accordance with MIL-STD-129.

6. NOTES

6.1 Intended use. The hose assembly covered by this specification is intended for use as a servicing hose on ground servicing equipment. The hose assembly will be used in charging aerospace vehicle breathing oxygen systems.

- \* 6.2 Ordering data.
  - \* 6.2.1 Acquisition requirements. Acquisition documents should specify the following:
    - a. Title, number, and date of the specification.
    - b. Specification part number (see 1.2 and 3.6).

## MIL-H-26633C(USAF)

- c. When coupling guard is required (see 3.4.3.1).
- d. Condition and location for qualification testing (see 4.3).
- e. Applicable levels of packaging and packing (see section 5).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time set for opening of bids, qualified for inclusion in Qualified Products List (QPL No.) whether or not such products have actually been so listed by that date. The attention of the contractor is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or purchase orders for the products covered by this specification. The activity responsible for the Qualified Products List is SA-ALC/MMIRCC, Kelly AFB, TX 78241 and information pertaining to qualification of products may be obtained from that activity.

6.4 Definitions. For the purpose of this specification, the following definitions will apply:

6.4.1 Lot. A lot shall consist of hose assemblies manufactured under essentially the same conditions and submitted for inspection at substantially the same time.

6.4.2 Reliability. Reliability is defined as the probability of performing a specified function under given conditions without failure for a specified period of time. Recognizing that, in general, the rate of failure of equipment is fairly constant throughout the life of the equipment, the probability of non-failure over an operating time interval decreases exponentially as a function of the length of the interval, during which time there is a constant failure rate, and can be expressed as follows:

Confidence level : 90 percent

$$MTBF = e^{-x} \text{ where } x = \frac{\text{Mission time}}{MTBF}$$

The  $2.3 = \frac{4.61}{2}$  is based on the constant for the Poisson/Chi squared

distribution, assuming an exponential (2 degrees freedom) distribution even though the failure rate for the test time is zero.

6.4.3 Mean-time-between-failures. The mean-time-between-failures is the arithmetical mean (average) of the operating time between failures.

6.5. Supersession data. This specification supersedes the portion of MIL-H-4722A(ASG) that applies to the hose assembly now covered by MS22028.

## MIL-H-26633C(USAF)

6.6 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes (additions, modifications, corrections, deletions) 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 last previous issue.

Custodian:  
Air Force - 99

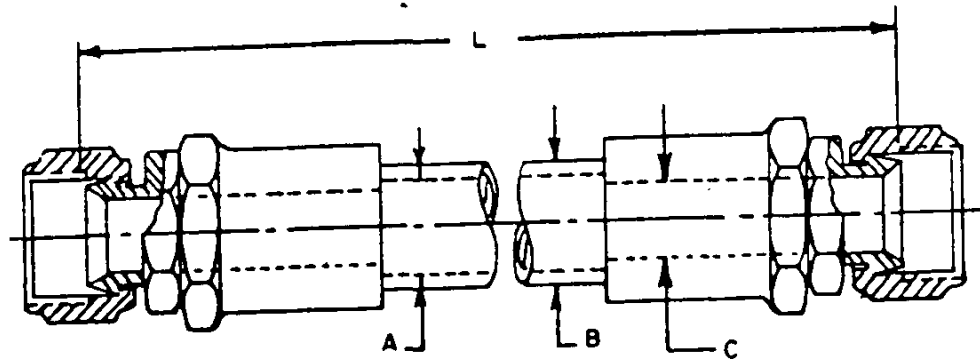
Preparing activity:  
Air Force - 82

Reviewer:  
DCSC - CS

User:  
Air Force - 11

.(Project 4720-F653)

MIL-H-26633C(USAF)



END FITTING TO MATE WITH MS 33858 DASH SIZE	HOSE DASH SIZE	NOMINAL O.D. OF RIGID TUBE (REF)	HOSE INSIDE DIA. MINIMUM "A"	HOSE OUTSIDE DIA. MAXIMUM "B"	COUPLING INSIDE DIA. MINIMUM "C"	HOSE MINIMUM INSIDE BEND RAD.
-5	-4	.250	0.212	0.703	0.100	3.250

## Notes:

1. Unless otherwise specified, dimensions in inches
2. Tolerances: Length L
  - $\pm .125$  (L under 24 inches)
  - $\pm .250$  (L from 24 to 36 inches)
  - $\pm .500$  (L from 36 to 50 inches)
  - $\pm 1$  percent (L over 50 inches)
3. Hose assemblies to be specified in the following length increments only:
  - 24 inches long and under, not less than .500 inch
  - 23 to 36 inches long, not less than 1 inch
  - over 36 inches long, not less than 2 inches.

FIGURE 1. Hose assembly details and length.

## STANDARDIZATION DOCUMENT IMPROVEMENT PROPOSAL

(See Instructions - Reverse Side)

1. DOCUMENT NUMBER MIL-H-26633C(USAF)		2. DOCUMENT TITLE Hose Assembly, Polytetrafluoroethylene, Oxygen	
3a. NAME OF SUBMITTING ORGANIZATION		4. TYPE OF ORGANIZATION (Mark one)	
		<input type="checkbox"/> VENDOR <input type="checkbox"/> USER <input type="checkbox"/> MANUFACTURER <input type="checkbox"/> OTHER (Specify): _____	
b. ADDRESS (Street, City, State, ZIP Code)			
5. PROBLEM AREAS			
a. Paragraph Number and Wording:			
b. Recommended Wording:			
c. Reason/Rationale for Recommendation:			
6. REMARKS			
7a. NAME OF SUBMITTER (Last, First, MI) - Optional		b. WORK TELEPHONE NUMBER (Include Area Code) - Optional	
c. MAILING ADDRESS (Street, City, State, ZIP Code) - Optional		8. DATE OF SUBMISSION (YYMMDD)	