

MIL-C-19064B
30 September 1964
Superseding
MIL-C-19064A(Aer)
26 November 1957

MILITARY SPECIFICATION

CONNECTOR, OXYGEN HOSE TO REGULATOR

This specification is mandatory for use by all Departments and Agencies of the Department of Defense.

1. SCOPE

1.1 This specification covers one type of connector for connecting the oxygen regulator hose to the demand mask breathing hose.

2. APPLICABLE DOCUMENTS

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of the specification to the extent specified herein.

SPECIFICATIONS

Federal

PPP-B-636	Boxes, Fiberboard
PPP-T-76	Tape, Pressure-Sensitive Adhesive Paper, Water Resistant, (For Carton Sealing)

Military

MIL-P-116	Preservation, Methods of
MIL-F-22191	Films, Transparent, Flexible, Heat Sealable, for Packaging Applications
MIL-O-27210	Oxygen, Aviator's Breathing, Liquid and Gas

STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
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Military (Continued)

MIL-STD-129	Marking for Shipment and Storage
MIL-STD-130	Identification Marking of U.S. Military Property
MS22016	Connector, Oxygen Mask Hose, Type MC-3A
MS22058	Connector, Oxygen Hose to Regulator
MS33586	Metals, Definition of Dissimilar

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

3. REQUIREMENTS

3.1 Preproduction - The connector furnished under this specification shall be a product which has been inspected and passed the preproduction inspection specified herein.

3.2 No data is required by this specification, or by applicable documents referenced in Section 2, unless specified in the contract or order (see 6.2).

3.3 Materials - Materials shall conform to applicable specifications and shall be as specified herein and on applicable drawings. Materials which are not covered by specifications, or which are not specifically described herein, shall be of the best quality, of the lightest practicable weight, and suitable for the purpose intended.

3.3.1 Metal parts - All metal parts shall be of a corrosion-resistant material or treated in a manner to render them adequately resistant to corrosion.

3.3.1.1 Dissimilar metals - Unless suitably protected against electrolytic corrosion, dissimilar metals shall not be used in intimate contact with each other. Dissimilar metals are defined in MS33586.

3.4 Design and construction - The design and construction of the connector shall be in accordance with MS22058, or as specified in the contract or order (see 6.2).

3.5 Performance -

3.5.1 Proof pressure - The connector shall pass the requirements when subjected to the proof pressure test.

3.5.2 Disconnection force - The connector shall pass the requirements when subjected to the disconnection force test.

3.5.3 Endurance - The connector shall pass the requirements when subjected to the endurance test.

3.6 Interchangeability - All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable.

3.7 Identification of product - The connectors shall be marked for identification in accordance with MIL-STD-130.

3.8 Workmanship - The connectors shall be uniform in quality and shall be free from irregularities, defects, or foreign matter which could adversely affect safety, performance, reliability, or durability.

4. QUALITY ASSURANCE PROVISIONS

4.1 Responsibility for inspection - Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified, the supplier may utilize his own facilities or any commercial laboratory acceptable to 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 supplies and services conform to prescribed requirements.

4.2 Classification of inspection - The examination and testing of the regulators shall be classified as follows:

- (a) Preproduction inspection - Preproduction inspection consists of examinations and tests performed on samples which are representative of the production item after award of a contract to determine that the production item meets the requirements of this specification.
- (b) Quality conformance inspection - Quality conformance inspection consists of examinations and tests performed on individual products or lots to determine conformance of the products or lots with the requirements set forth in this specification.

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4.3 Preproduction inspection - Preproduction inspection shall consist of all the examinations and tests of this specification.

4.3.1 Preproduction samples - Unless otherwise specified, as soon as practicable after the award of the contract or order, the manufacturer shall submit five connectors. The samples shall be representative of the construction, workmanship, components, and materials to be used during production. When a contractor is in continuous production of these connectors from contract to contract, submission of a further preproduction sample on the new contract may be waived at the discretion of the procuring activity. Approval of the preproduction samples or the waiving of preproduction inspection does not preclude the requirements of submitting to the quality conformance inspection. The preproduction samples shall be forwarded to the Supply Officer, Naval Air Engineering Center, Philadelphia, Pennsylvania 19112, Attention: Director, Aerospace Crew Equipment Laboratory. The preproduction samples shall be plainly identified by securely attached durable tags marked with following information:

Samples submitted by (name) (date) for
preproduction inspection in accordance
with the requirements of MIL-C-19064B
under Contract No.

4.3.1.1 Upon completion of the preproduction inspection, all the applicable inspection reports and when applicable, recommendations and comments pertinent for use in monitoring production shall be forwarded to the Government quality control representative. One approved connector shall be returned to the manufacturer for use in monitoring production. The other samples shall be consumed or destroyed in the preproduction inspection and shall not be considered as part of the quantity to be delivered under contract.

4.4 Quality conformance inspection - Quality conformance inspection shall consist of the following examinations and tests:

Visual examination
Dimensions
Proof Pressure
Disconnection force
Endurance
Preparation for delivery

4.4.1 Sampling -4.4.1.1 Inspection lot -

4.4.1.1.1 Connector - An inspection lot size shall be expressed in units of connectors made under essentially the same conditions and from the same materials and components. The sample unit shall be one connector.

4.4.1.1.2 Preparation for delivery - An inspection lot size shall be expressed in units of one fully prepared shipping container, containing connectors fully prepared for delivery made from essentially the same materials and components. The sample unit shall be one shipping container, containing connectors fully prepared for delivery with the exception that it need not be sealed.

4.4.1.2 Sampling for tests and examinations of connectors - The sample size, acceptance criteria, tests, and examinations required for the connectors shall be as specified in Table 1.

TABLE 1
SAMPLE SIZE, ACCEPTANCE CRITERIA, TESTS, AND
EXAMINATIONS OF THE CONNECTORS

INSPECTION	TYPE OF INSPECTION	METHOD	SAMPLE SIZE	ACCEPTANCE CRITERIA
Visual examination (See classification of defects)	Critical	4.6.1.1	Every connector for critical defects.	Reject all units with any critical defects. An acceptable quality level of 2.5 defects per hundred units for minor defects.
	Minor		Inspection level II 1/ for minor defects.	
Dimensions	Major	4.6.1.1.1	Inspection Level S-2 1/	Acceptance number zero, rejection number one.
Proof Pressure	Major	4.6.2	Inspection Level S-2 1/	Acceptance number zero, rejection number one.
Disconnection force	Critical	4.6.3	Every connector	Reject all defective units.
Endurance 2/	Major	4.6.4	Inspection Level S-2 1/	Acceptance number zero, rejection number one.
Preparation for delivery	Minor	4.6.1.2	Inspection Level S-2 1/	Total acceptable quality level of 4.0 percent defective.

1/ The sample size shall be based only on the applicable sample size code letter corresponding to the specified inspection level of MIL-STD-105.

2/ This is a destructive test (see 6.2).

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4.5 Test conditions-

4.5.1 Gas - Unless otherwise specified, the gas used in testing the connectors shall be oxygen conforming to MIL-O-27210, type I.

4.5.2 Temperature and pressure - Unless otherwise specified, inspections shall be conducted at local ambient temperature and barometric pressure. Corrections shall be made to provide agreement with the temperature and pressure calibration of the instruments. Inspection data provided by an instrument not calibrated to normal temperature and pressure (NTP) shall be corrected to determine (NTP) requirements. (NTP) conditions are 29.92 inches of mercury and 70° F.

4.6 Inspection methods -4.6.1 Visual examination -

4.6.1.1 Connector - Every connector shall be examined visually (for critical defects) to determine conformance to this specification and to MS22058. The classification of defects, Table II, shall be used to classify the defects found.

4.6.1.1.1 Dimensions - The connector shall be checked dimensionally to determine conformance to MS22058.

TABLE II
CLASSIFICATION OF DEFECTS FOR VISUAL EXAMINATION
OF THE CONNECTOR

CRITICAL	MINOR
1. Material imperfections-foreign matter embedded	201. Marking - missing, insufficient, incorrect, illegible, or not permanent.
2. Surface - unclean, rough, misaligned, or containing cracks, nicks, or other flaws.	
3. Any component missing, malformed, fractured, or otherwise damaged	
4. Any component loose or otherwise not securely retained.	
5. Incorrect assembling or improper positioning of components	
6. Any functioning part that works with difficulty	
7. Faulty workmanship or other irregularities	

4.6.1.2 Preparation for delivery - Each of the fully prepared shipping containers, containing connectors selected as a sample unit from the lot shall be examined to determine that the packaging, packing, and marking conform to this specification. The classification of defects, Table III, shall be used to classify the defects found.

TABLE III
LIST OF DEFECTS FOR PREPARATION FOR DELIVERY

ITEM	DEFECTS
Exterior and interior markings	Missing, incorrect, incomplete, illegible; of improper size, location, sequence; or method of application; markings not the same on the interior and exterior containers.
Packaging and Packing materials	Any non-conforming component, any component missing, damaged, or otherwise defective.
Workmanship	Inadequate application of the components such as incomplete closure of the unit package, intermediate package, container flaps, loose strappings, etc.; bulging or distortion of the containers.
Exterior and interior weight or content	Number per container is more or less than required; gross or net weight exceeds the requirements.

4.6.2 Proof pressure - The connector shall be installed in a connector conforming to MS22016 and subjected to a temperature of $160 \pm 2^\circ \text{F}$ for 1 hour. After the conditioning period and while still at this temperature, the connector shall be subjected to an internal pressure of 5 psig and maintained for 2 minutes. There shall not be any evidence of leakage. This test procedure shall be repeated utilizing a temperature of $-65 \pm 2^\circ \text{F}$ for 1 hour. Under these conditions, there shall not be any evidence of leakage.

4.6.3 Disconnection force - The connector shall be installed in a connector conforming to MS22016. The disconnection force shall be between 12 and 20 pounds.

4.6.4 Endurance - The connector shall be subjected to 1000 cycles of connections and disconnections utilizing a connector conforming to MS22016. After the cycling period, the disconnection force shall be between 12 and 20 pounds. The connector shall then be subjected to and pass the proof pressure test.

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5. PREPARATION FOR DELIVERY

5.1 Preservation and packaging - Preservation and packaging shall be Level A or C as specified (see 6.2).

5.1.1 Level A - Each connector shall be cleaned and packaged in accordance with MIL-P-116, Method IC-1X. The connector shall be cleaned by any appropriate procedures of MIL-P-116 that do not employ petroleum or hydrocarbon products. Each connector shall then be packaged within a bag fabricated of transparent flexible barrier conforming to MIL-F-22191, type II, and heat sealed. The bag shall be sufficiently oversized to provide cushioning protection for the item.

5.1.2 Intermediate packaging - Unless otherwise specified, ten connectors, packaged as specified in paragraph 5.1.1, shall be packaged within a container conforming to PPP-B-636, type 1, class 2, W6c. The container shall be equipped with criss-crossed corrugated fiberboard separators which shall segregate and hold each connector snugly. The closure shall be accomplished by tape sealing all seams and joints with pressure sensitive tape conforming to PPP-T-76, two inch minimum width.

5.1.3 Level C - Each connector shall be cleaned and packaged in a manner that will afford the item the degree of protection necessary to prevent chemical deterioration and physical damage during transit from contractor's plant to the receiving activity. No petroleum or hydrocarbon compound shall be used in the cleaning or packaging procedure.

5.2 Packing - Packing shall be Level A, B or C as specified (see 6.2).

5.2.1 Level A - Unless otherwise specified, no more than ten intermediate containers of ten connectors each, packaged as specified in paragraphs 5.1.1 and 5.1.2 shall be packed in an exterior shipping container conforming to PPP-B-636, type 1, class 2. The intermediate containers shall be arranged within the shipping container in two stacks of five each in a manner that will conserve volume without impairing container rigidity. The gross weight of each packed shipping container shall not exceed the limitations of the container specification. The container closure shall be accomplished in accordance with procedures in the appendix of the specification.

5.2.2 Level B - Packing procedures shall be the same as specified in paragraph 5.2.1, except that containers to be used shall be domestic service grade conforming to PPP-B-636, type 1, class 1.

5.2.3 Level C - The packaged connectors, which the carrier requires to be packed, shall be packed for domestic shipment in shipping containers that will assure safe arrival at the lowest possible transportation rate to the point of delivery. Containers and procedures employed shall conform to the latest issue of rules and regulations applicable to the mode of transportation utilized.

5.3 Marking - Nomenclature tags shall be inserted in each bag showing title, part number or other data as required by procuring activity. In addition, interior and exterior containers shall be marked in accordance with MIL-STD-129.

5.3.1 Precautionary marking - The following precautionary marking shall appear on each package;

"CAUTION: DO NOT ALLOW CONTAMINANTS OF
ANY KIND TO BE USED ON OR ABOUT
THE OXYGEN CONNECTORS."

6. NOTES

6.1 Intended use - The connector covered by this specification is intended for use in connecting the oxygen regulator hose to the oxygen mask breathing hose through a connector assembly, conforming to MS22016, in the installation of high-pressure and low-pressure breathing oxygen equipment in aircraft.

6.2 Ordering data - Procurement documents should specify the following:

- (a) Title, number, and date of this specification.
- (b) Data required (see 3.2).
- (c) Applicable drawings and part number of connector required (see 3.4).
- (d) Whether preproduction inspection is required (see 4.3.1).
- (e) Selection of applicable levels of preservation, packaging, and packing.
- (f) Applicable methods of cleaning and preservation.
- (g) Samples subjected to destructive tests are not to be considered or shipped as part of the contract or order (see Table I).

Custodians:

Army - MO
Navy - WP
Air Force - 11

Preparing Activity:

Navy - WP

Project No. (1660-0026)

Review Activities:

AF- 11
Army - MO
Navy - WP

NOTICE - Review/user information is current as of date of this document. For future coordination of changes to this document, draft circulation should be based on the information in the current DODISS.

