

INCH-POUND

MIL-DTL-22706G
20 August 1997
SUPERSEDING
MIL-D-22706F(AS)
8 July 1991

DETAIL SPECIFICATION

DUCT AND SCUFF COVER, PNEUMATIC, FLEXIBLE

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

1. SCOPE

1.1 Scope. This specification covers flexible pneumatic ducts and scuff covers for delivery air at temperatures to 600°F as specified in 6.1.

1.2 Classification. The products are of the following types and classes:

1.2.1 Types.

Type I - Duct
Type II - Scuff Cover
Type III - Duct and Scuff Cover

1.2.2 Classes.

Class I - 30 foot length
Class II - 60 foot length

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Commander, Naval Air Warfare Center Aircraft Division, Code 414100B120-3, Highway 547, Lakehurst, NJ 08733-5100, by using the Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A

FSC 4720

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

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2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements documents cited in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications and standards. The following specifications and standards 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).

SPECIFICATIONS

FEDERAL

TT-I-735	-	Isopropyl Alcohol
TT-S-735	-	Standard Test Fluids, Hydrocarbon

DEPARTMENT OF DEFENSE

MIL-H-5606	-	Hydraulic Fluid, Petroleum Base; Aircraft, Missile, and Ordnance
MIL-L-7808	-	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base
MIL-L-23699	-	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number 0-156

STANDARDS

DEPARTMENT OF DEFENSE

MIL-STD-130	-	Identification Marking of U.S Military Property
MIL-STD-810	-	Environmental Test Methods and Engineering Guidelines
MIL-STD-831	-	Test Report, Preparation Of
MS17833	-	Connector, Pneumatic Starter Duct-Flanged (Male)
MS17835	-	Connector, Pneumatic Starter Duct-Flanged (Female)

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

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2.3 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 OF MECHANICAL ENGINEERS (ASME)

ASME - PTC 19.5 - Interim Supplement on Instruments and Apparatus Application, Part II of Fluid Meters (DoD Adopted)

(Application for copies of the ASME publication should be addressed to Publications Department, United Engineering Center, 345 East 47th Street, New York, NY 10017-2392.)

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM-D413 - Rubber Property, Adhesion to Flexible Substrate Standard Test Methods For (DoD Adopted)
ASTM-D629 - Quantitative Analysis Of Textile Standard Test Methods
For
(DoD Adopted)

(Application for copies should be addressed to the American Society for Testing and Materials 100 Barr Harbor Drive, Philadelphia, PA 19103.)

2.4 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Qualification. The items furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list before contract award (see 4.2 and 6.3).

3.1.1 Qualify by similarity. If approved by the contracting activity, qualification shall be granted to the Class II duct or scuff cover if the manufacturer is qualified to the Class I duct and scuff cover and the design, construction, and materials of the Class I duct and scuff cover and the Class II duct and scuff cover are the same.

3.2 Materials. Materials selected for construction of duct and scuff cover shall be of uniform quality and free of defects that may adversely affect the appearance, strength, endurance, and wear resistance of the finished products. The materials used shall be resistant to environmental deterioration such as temperature and humidity, corrosion, liquid absorption, or

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penetration, fungus growth, and sunshine. The materials shall meet the environmental requirements of MIL-STD-810 and shall be verified by the contractor in accordance with 4.4.11.

3.2.1 Protective treatment. Protective treatment shall be applied when materials subject to corrosion in salt air or other atmospheric conditions are used in the construction of the duct assembly. Materials shall be protected against corrosion in a manner that shall not prevent compliance with the performance requirements of this specification. The use of any protective coating that will crack, chip, or scale, with age or extreme atmospheric conditions shall not be used.

3.3 Design and construction. The duct and scuff cover assembly shall consist of a length specified by the contracting activity (see 1.2 and 6.2). An easily replaceable scuff cover (see figure 1) shall be used. The duct shall be manufactured to ensure that the temperature and pressure requirements are met when tested as specified in section 4 of this specification. The typical construction of duct and scuff cover are shown on figure 2. The ends of the duct shall be designed to be readily connected with MS17833 and MS17835 connectors (see Appendix A).

3.3.1 Duct.

3.3.1.1 Dimensions. The duct shall be of 30-foot or 60-foot length, as specified in 1.2.2. The duct shall have a uniform wall thickness with a tolerance of ± 0.032 inch, exclusive of the scuff cover. The inside diameter of the duct shall be not less than 3.5 inches or greater than 3.562 inches at standard day conditions (14.7 psi and 70°F). The outside diameter of duct shall be as small as possible consistent with the requirements specified herein but shall be not greater than 4.125 inches. The duct construction shall be uniform throughout the length of the duct assembly so that it shall be possible to cut off a section of the duct at any location and shall be able to reconnect to any of the standard beaded shank end connectors. No painting or any other special treatment of the cut surface shall be required.

3.3.1.1.1 Dimensional changes. The duct assembly shall be constructed that it shall not decrease in length more than two percent nor increase more than three percent when new or after exposure to any of the environmental conditions specified in 3.4. The inside diameter shall not decrease more than two percent or increase in outside diameter more than the maximum diameter specified in 3.3.1.1 after exposure to any of the environmental conditions specified in 3.4.

3.3.1.2 Fabric. The exterior fabric shall be material that is resistant to liquid absorption and penetration and shall be highly resistant to abrasion (see 4.4.12).

3.3.1.3 Serviceability. The duct assembly shall be able to resist to abrasion (see 4.4.12), exposure to solvents (see 4.4.10), and shall not leak when in service (see 4.4.3). It shall withstand continuous flexing when tested with low temperature soak test as specified in 4.4.4.

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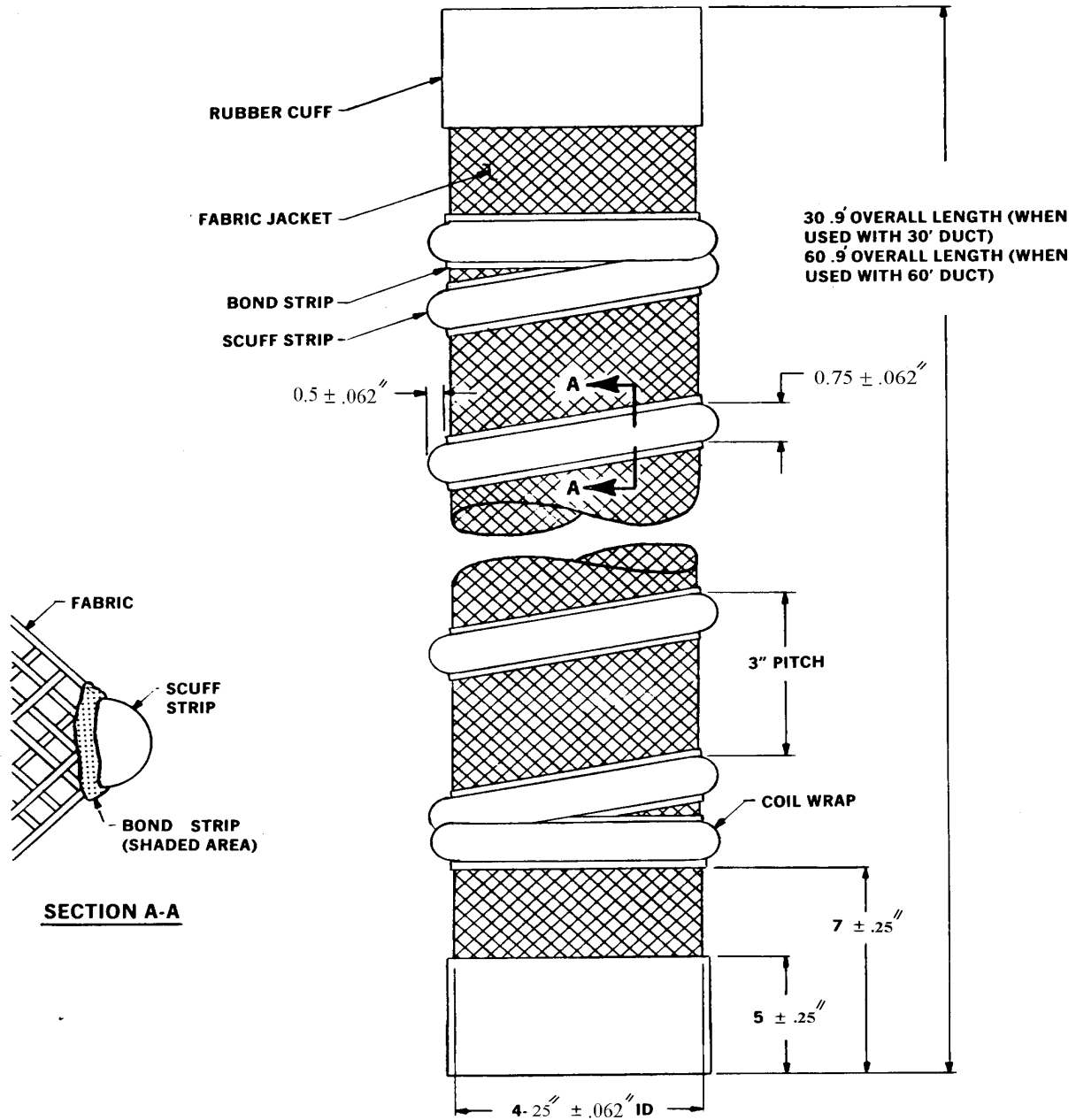


FIGURE 1. Duct assembly with scuff cover.

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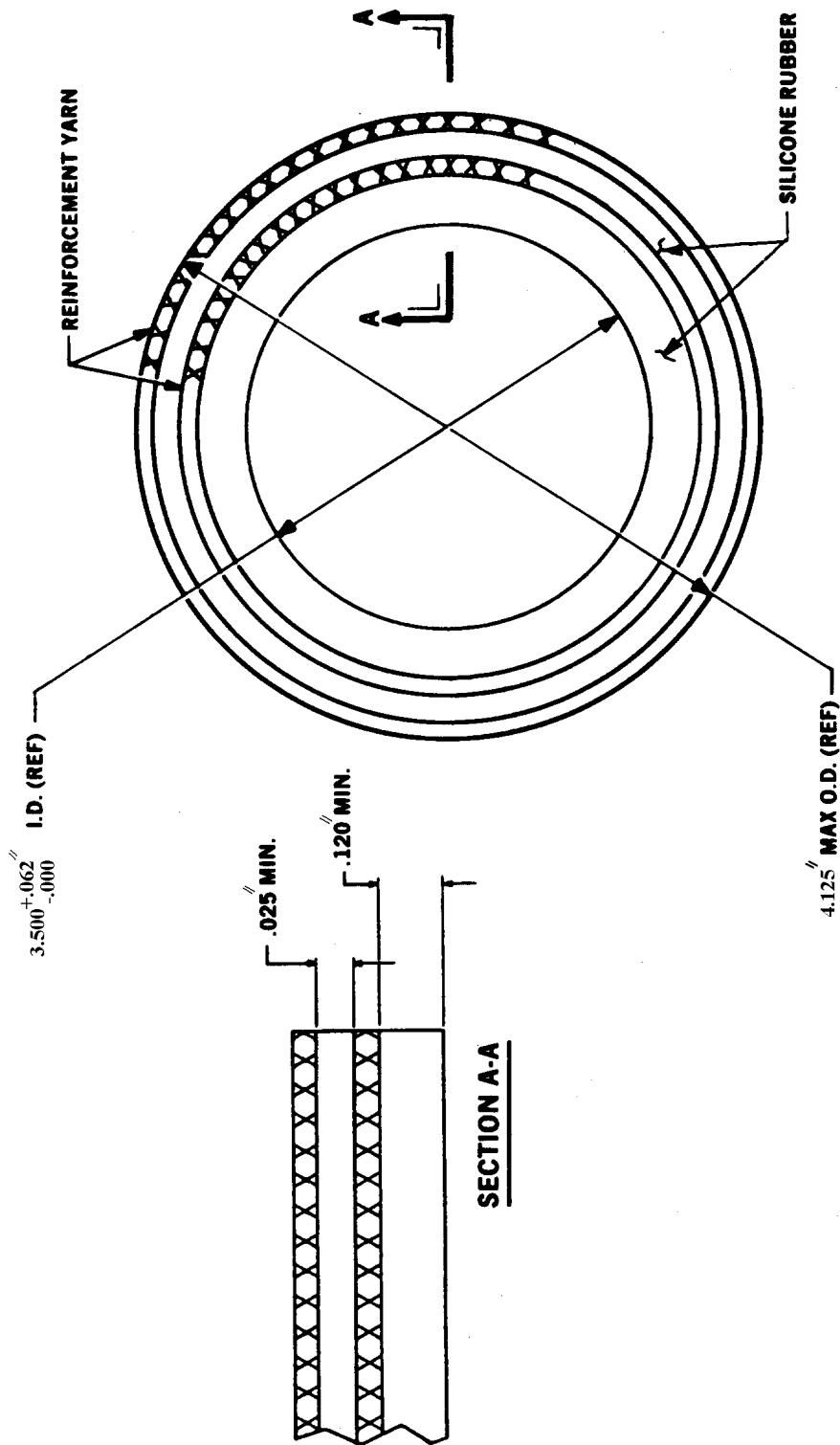


FIGURE 2. Detail construction of duct assembly.

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3.3.2 Scuff cover.

3.3.2.1 Dimensions. The scuff cover dimensions shall be as specified on figure 1.

3.3.2.2 Outer jacket. The outer jacket (see figure 1) shall be constructed with moisture resistant fabric having a maximum regain of 0.5 percent as measured by ASTM-D629. Materials shall be treated with a moisture resistant compound to meet this requirement. The fabric shall be of an open construction (weave or braid).

3.3.2.3 Scuff strip. The scuff strip shall be wound with a protective helical coil of natural or synthetic rubber with a minimum durometer of 60, permanently vulcanized to the fabric. A bonded strip shall be used between the scuff strip and the fabric. The bonded strip shall be vulcanized to the fabric so that the fabric, immediately below the bonded strip, is completely contained within the rubber material. There shall be no exposed fabric threads below the bonded strip. The last coil wrap at each end of the duct assembly shall be wrapped squarely around the fabric and vulcanized permanently to prevent separation or raveling of the strip (see figure 1).

3.3.2.4 Scuff cover ends (cuff). Each end of the scuff cover shall be vulcanized with a 5-inch minimum width rubber strip to prevent unraveling of the scuff cover and space for identification information (see 3.8.1).

3.4 Environmental conditions. The duct and scuff cover as designed shall be able to operate under the following environmental conditions (see 4.4.11).

- a. Exposure to salt sea atmosphere.
- b. Fungus growth as encountered in tropical conditions.
- c. Radiant energy as found under natural conditions.

3.5 Performance. The duct and scuff cover shall meet the following performance requirements and shall be capable to operate under the following conditions:

- a. Ambient temperature of $-65^{\circ} \pm 5^{\circ}\text{F}$ when air flowing at 200 ± 5 pounds per minute at 100 ± 2 psia, and $600 \pm 0^{\circ}\text{F}, -10^{\circ}\text{F}$ (see 4.4.4).
- b. Ambient temperature of $130 \pm 5^{\circ}\text{F}$ when air flowing at 200 ± 5 pounds per minute at 100 ± 2 psia, and $600 \pm 0^{\circ}\text{F}, -10^{\circ}\text{F}$ (see 4.4.9).
- c. Static proof pressure of 250 psia at normal ambient temperature of 70°F for 5 minutes with pressure trapped, the static pressure shall not drop 30 psi during that period (see 4.4.2).
- d. A minimum bend radius of 8 inches when the duct is under no pressure and a bend radius of 30 inches while under pressure of 30 psia (see 4.4.5).

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e. At pneumatic pressure of 150 psia (maximum operating pressure), pressure shall not leak more than the value specified in 4.4.3.

f. The duct assembly shall withstand abrasion resistance when tested in accordance with 4.4.12.

g. The scuff cover shall have a tensile strength of 1,500 pounds and shall pass this requirements when tested in accordance with 4.4.13.

h. The duct shall meet the adhesion requirements of ASTM-D413 when tested in accordance with adhesion test (see 4.4.8).

i. The pressure drop through the duct assembly shall not exceed the values specified in 4.4.7.

j. The duct assembly shall be resistant to various fluids and shall pass the fluid resistant requirements when tested in accordance with 4.4.10.

3.6 Part numbering of interchangeable parts. All parts having the same manufacturer's part number shall be functionally and dimensionally interchangeable.

3.7 Weight. The weight of the duct without the end flanges and the connectors but with scuff cover shall be not greater than 2.5 pounds per foot of length.

3.8 Marking.

3.8.1 Identification of product. The duct, flanges, and scuff covers shall be marked for identification in accordance with MIL-STD-130. The identification shall be permanent and shall not peel off, crack, or loosen with age and extreme environmental conditions. The location and other details selected for marking shall be in accordance with figure 3.

3.9 Workmanship. Workmanship shall be high quality to ensure that the ducts furnished under this specification are free of defects that compromise, limit, or reduce performance, or intended use.

4. VERIFICATION

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

a. Qualification inspection (see 4.2).

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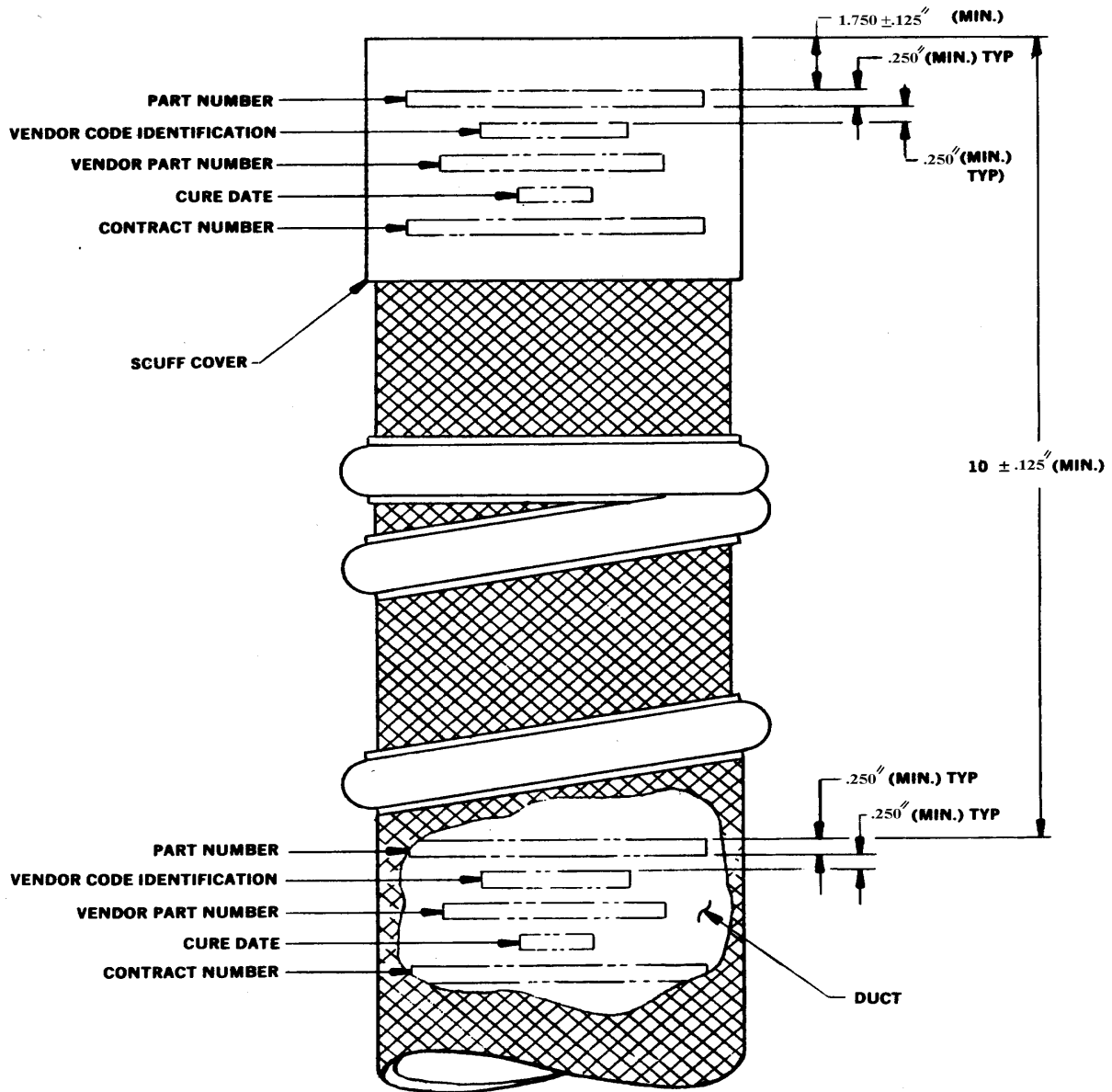


FIGURE 3. Duct and scuff cover identification markings typical each end.

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b. Conformance inspection (see 4.3).

4.2 Qualification inspection. Qualification inspection shall be as specified in table I.

4.2.1 Qualification test samples. The supplier shall furnish two Type III, Class I ducts or one Type III, Class II duct for testing to determine conformance with the requirements of this specification. Class II ducts furnished as test samples shall be cut in half by the testing activity and tested as two 30-foot ducts.

4.2.2 Test sequence. The test samples specified in 4.2.1 for qualification tests shall be conducted in the order listed in table I.

4.2.3 Qualification test report. The contractor shall prepare a report of the qualification test in accordance with MIL-STD-831 showing that the samples tested conform to this specification. Two copies shall be furnished to the contracting activity. Two additional copies shall be furnished to the qualifying activity with the verification test sample.

4.2.4 Test methods. The qualification tests shall follow the inspection methods specified in 4.4. When the scuff cover is used, it shall be considered as an integral part of the duct and unless otherwise specified in the contract, all tests shall be conducted on the entire duct assembly.

4.3 Conformance inspection. Conformance inspection shall consist of:

a. Individual inspection (see 4.3.1).

b. Sampling tests (see 4.3.2).

4.3.1 Individual inspection. Each duct shall be subjected to examination of product in accordance with 4.4.1. Failure to pass the examination shall be cause for rejection of the duct.

4.3.2 Sampling tests. One duct from each lot of 100 or fraction thereof shall be randomly selected and subjected to a 150 cycle-endurance test in accordance with 4.4.9, followed by a static proof pressure test performed in accordance with 4.4.2. Immediately upon completion of the static proof pressure test, conduct the adhesion test in accordance with 4.4.8.

4.3.3 Production lot. A production lot shall consist of ducts fabricated from a single batch of raw material and produced as one continuous run.

4.4 Inspection methods.

4.4.1 Examination of product. Each duct and scuff cover shall be examined to determine conformance to the requirements specified herein with respect to materials, workmanship, marking, weight, and dimensions.

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TABLE I. Qualification inspection.

Sample 1		Sample 2		Sample 3	
Name of test	Test paragraph	Name of test	Test paragraph	Name of test	Test paragraph
Examination of product	4.4.1	Examination of product	4.4.1	Tensile strength	4.4.13
Static proof pressure	4.4.2	Static proof pressure	4.4.2	Scuff strip adhesion	4.4.14
Leakage	4.4.3	Leakage	4.4.3		
Low temperature soak	4.4.4	High temperature soak <u>1/</u>	4.4.6		
Bend radius	4.4.5	Pressure drop	4.4.7		
Abrasion resistance	4.4.12	Endurance	4.4.9		
Fluid resistance	4.4.10	Adhesion	4.4.8		
Environmental	4.4.11				
Adhesion	4.4.8				

1/ Without scuff cover

4.4.2 Static proof pressure. The duct shall be sealed and restrained at both ends and subjected to a static pressure of 250 psia with air, water, or nitrogen at normal ambient temperatures for five minutes to ensure compliance with the static proof pressure requirements specified in 3.5. Special caution shall be given to the test when using air or nitrogen at this high pressure.

4.4.3 Leakage. The test shall be conducted at ambient prevailing temperatures. With the test duct blocked at both ends, the duct shall be pressurized with air or nitrogen to 150 psia and with the pressure trapped, the static pressure shall not drop 30 psi in less than one hour.

4.4.4 Low temperature soak. The duct assembly shall be placed in a chamber and cooled to and maintained at a temperature of $-65^{\circ} \pm 5^{\circ}\text{F}$ for a period of 8 hours. At the end of the soak period and at $-65^{\circ} \pm 5^{\circ}\text{F}$, a 2,000 lb. force shall be applied on the duct. The force shall cover 6 inches of duct length and overhang the width of the duct when flattened. The force shall be removed after one minute. This test shall be repeated 25 times with an examination of the duct upon completion of the test. While at $-65 \pm 5^{\circ}\text{F}$, the duct shall be subjected to 100 flexing cycles near each end to permit internal inspection without destroying the duct. A flexing cycle shall consist of folding the duct back on itself and then returning it to the straight configuration. With the duct initially at $-65 \pm 5^{\circ}\text{F}$, it shall be subjected to 25 cycles of the endurance test (see 4.4.9). Damage to the duct as a result of any of the tests above shall be cause for rejection of the duct assembly.

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4.4.5 Bend radius and length. At a stabilized -65°F temperature, the unpressurized duct assembly shall be subjected to bending until it will not bend further without damage. The minimum bend radius shall not exceed eight inches as measured to the center line of the duct. Subsequently, the duct assembly shall be pressurized with air to 30 psia, and the bend radius re-determined. The bend radius shall not exceed thirty inches without crimping as measured to the center of the duct. The temperature shall then be stabilized at 130°F and repeated the test pressurized and unpressurized. After the pressurized bend radius has been determined, the pressure shall be decreased to 15 psia with a decrement of 5 psia and the change in length shall be not greater than the value specified in 3.3.1.1.1 The duct assembly shall then be subjected to the static proof pressure test and leakage test as specified in 4.4.2 and 4.4.3, respectively.

4.4.6 High temperature soak. The duct shall be placed in a chamber and heated to and maintained at a temperature of $500^{\circ} \pm 10^{\circ}\text{F}$ for a period of 30 minutes. At the end of this time, while in the chamber at $500^{\circ} \pm 10^{\circ}\text{F}$, the duct shall be subjected to a static proof pressure of 150 ± 2 psia for 5 minutes. Ballooning, bursting, or otherwise failure of the duct to withstand the above pressure shall be cause for rejection of the duct assembly.

4.4.7 Pressure drop. The pressure drop through a 30-foot section of duct assembly shall not exceed 6 psi when installed as shown on figure 4 under the flow conditions of 4.4.9.

4.4.8 Adhesion. The outer wall of sample I duct shall have a reinforcement to rubber adhesion of 15 pounds per linear inch (PLI) minimum when tested in accordance with ASTM-D413, strip specimen, type A, 180 degree peel machine method. The sample II duct, upon completion of the 1,000 cycle endurance test, shall be tested at both folded locations (see figure 4) in accordance with the above procedure, except the ply adhesion shall be 9 pounds PLI minimum.

4.4.9 Endurance. While installed as shown on figure 4, the duct shall be subjected to a 1,000 cycle test. Each cycle shall consist of air flowing through the duct at the rate of 200 ± 5 pounds per minute at 100 ± 2 psia total pressure with an inlet temperature of $600 \pm 0^{\circ}\text{F}$, -10°F for one minute followed by one minute of no air flow. The duct shall be flexed 18 inches from the inlet end as described in 4.4.4 during the no flow portion of the cycle. This total elapsed time of 2 minutes shall constitute one cycle. The duct shall be in an environment with an ambient temperature of $130 \pm 5^{\circ}\text{F}$, -10°F . A warm-up period of 10 cycles is permissible to establish the 130°F ambient temperature within the tolerances specified. The 1,000 cycle test may be conducted continuously for a minimum of eight hours.

4.4.10 Fluid resistance. Six exterior adjacent one-foot sections approximately at the center of a 30-foot duct assembly shall be saturated with each of the following fluids for five minutes:

- a. Test fluid conforming to TT-S-735, Type III.
- b. Test fluid conforming to TT-S-735, Type VI.

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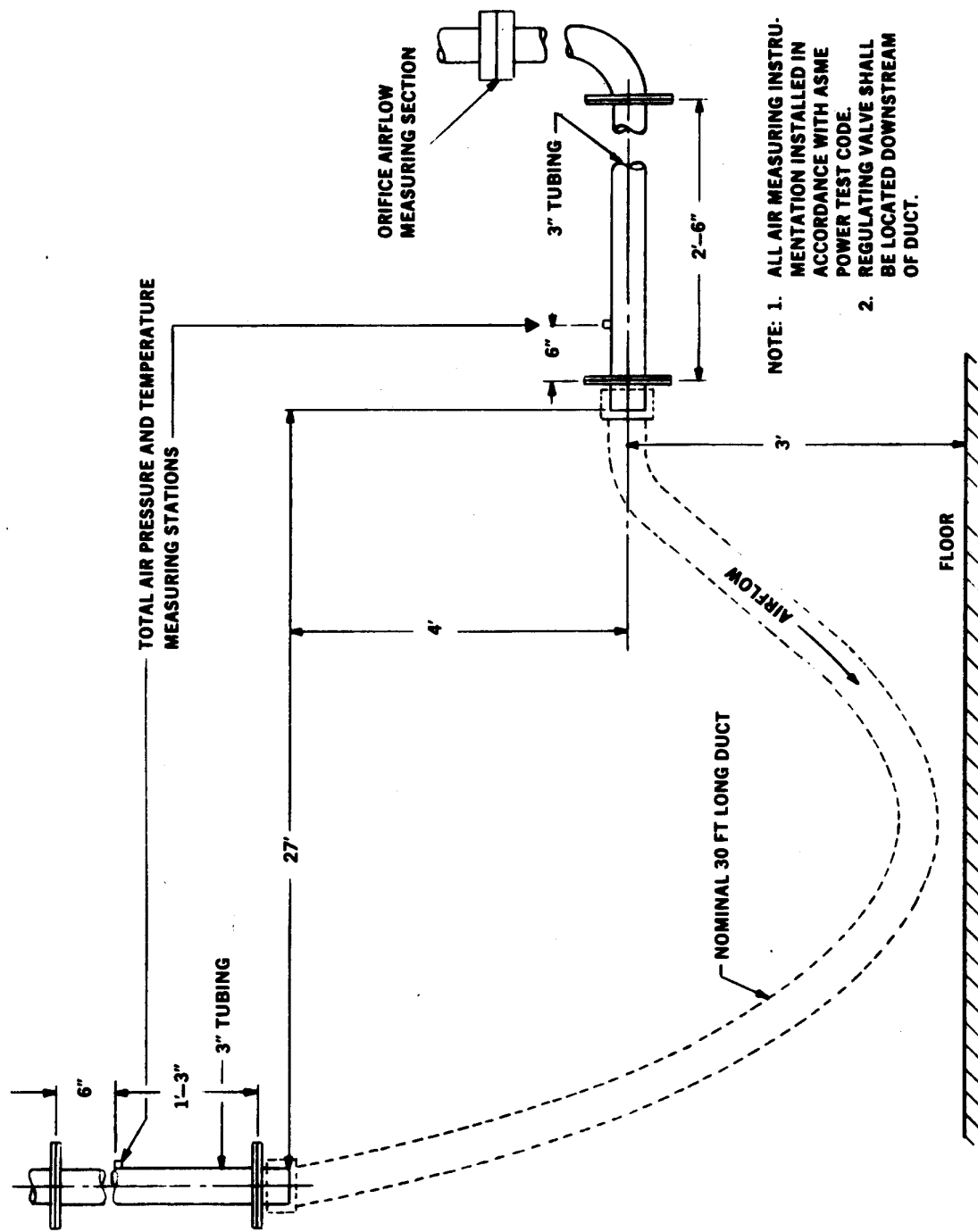


FIGURE 4. Duct test installation.

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- c. Engine lubricating oil conforming to MIL-L-7808 or MIL-L-23699.
- d. Anti-icing fluid conforming to TT-I-735.
- e. Hydraulic fluid conforming to MIL-H-5606.
- f. Salt water (5 percent by weight).

This saturation shall be repeated five times at 24 hour intervals, after which it shall be tested in sequence proof pressure test (4.4.2) and leakage test (4.4.3).

4.4.11 Environmental. The manufacturer shall verify and document environmental reliability of the materials. Reliability of the materials shall be verified by the following tests in accordance with the procedures as specified in MIL-STD-810:

- a. Fungus resistance - The fungus resistance test shall be conducted in accordance with Method 508.
- b. Sunshine - The sunshine test shall be in accordance with Method 505 for 100 hours.
- c. Salt fog - The salt fog test shall be conducted in accordance with Method 509.

4.4.12 Abrasion resistance. The duct assembly (duct/scuff cover) shall be attached to a towing vehicle at one end of the assembly. The towing vehicle attachment point shall not be more than one foot above ground level. The duct assembly thus attached shall be dragged at a minimum of 5 miles per hour for 20,000 feet without rotation, on concrete (a dry, brushed surface subject to approval by the qualifying activity (see 6.3)). The test shall be repeated with the duct assembly being dragged by its opposite end. The test shall be repeated with the duct assembly bent 180 degrees at its midpoint and both ends attached to the towing vehicle. After the test, the duct assembly shall be tested for leakage in accordance with 4.4.3.

4.4.13 Tensile strength. The scuff cover shall withstand a 1,500 pound pull applied axially at the ends of the cover. Plugs shall be installed and clamped into each end of the cover. The plugs shall have attached hooks and one end shall be hooked to a fixed support while a 1,500 pound pull is applied to the other end for a minimum of 5 minutes. Any separation of components, breaks in the braid cover, or breaks in the scuff cover strip shall be cause for rejection. The test shall be repeated after heating the scuff cover to 200°F for 24 hours.

4.4.14 Scuff strip adhesion. The scuff strip and bond strip interface shall be cut with a sharp knife. The two strips shall then be pulled away from each other. Separation of the scuff strip and band strip shall occur as tearing of the rubber rather than by pulling apart of one distinct strip from the other. If separation occurs along an apparent parting surface, this shall be cause for rejection of the duct assembly.

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5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When actual packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the Military Department's System Command. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

6.1 Intended use. The duct and scuff cover covered by this specification are intended for use in delivering of high-flow, low-pressure air to aircraft starting and air conditioning systems.

6.2 Acquisition requirements. Acquisition documents must specify the following:

- a. Title, number, and date of this specification.
- b. Type and class (see 1.2).
- c. Part number (see 6.4).
- d. Special marking, if required (see 3.8).
- e. Packaging (see 5.1).
- f. Qualify by similarity (see 3.1.1).

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are at the time of award of contract, qualified for inclusion in Qualified Products List QPL-22706, whether or not such products have actually been so listed by that date. The attention of the contractors 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. Information pertaining to qualification of products should be obtained from the Commander, Naval Air Warfare Center, Department of the Navy, Support Equipment Department, Building 562, Lakehurst, NJ 08733-5037, Attention: Code 4.8.

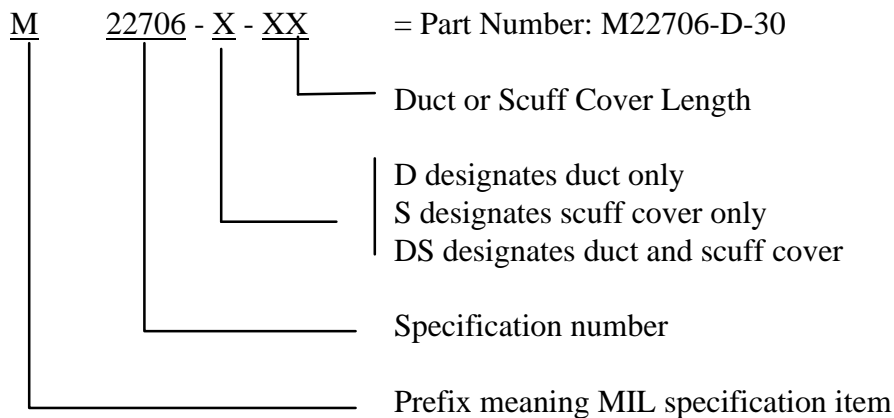
6.4 Part number description.

<u>Part number</u>	-	<u>Part description</u>
M22706-D-30	-	For Type I, Class I duct, thirty feet length

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M22706-D-60	- For Type I, Class II duct, sixty feet length
M22706-S-30	- For Type II, Class I scuff cover, thirty feet length
M22706-S-60	- For Type II, Class II scuff cover, sixty feet length
M22706-DS-30	- For Type III, Class I duct and scuff cover, thirty feet in length
M22706-DS-60	- For Type III, Class II duct and scuff cover, sixty feet in length

6.5 Part identifying number (PIN) structure.

Example of Part Number:



6.6 Preservation. The following preservation, packing, and packaging are an information for contractor only as they were used successfully in the previous revision of this document.

6.6.1 Level A. Ducts and scuff covers should be preserved in accordance with MIL-STD-2073/1.

6.6.2 Commercial packaging. Ducts and scuff covers should be preserved and packaged in such a manner as to ensure adequate protection during shipment to the initial destination for immediate use.

6.7 Packing.

6.7.1 Level A. Ducts and scuff covers should be packed in accordance with exterior type shipping containers conforming to PPP-B-585, PPP-B-601, PPP-B-621 or PPP-B-576. Exterior containers should be of uniform shape and size, of minimum cube and tare consistent with the protection required, and should contain identical quantities. The gross weight of each pack should not be greater than 200 pounds. Containers should be provided with a case liner and should be sealed to protect rain and moisture.

6.7.2 Commercial packaging. Packages which require overpacking for acceptance by carrier should be packed in exterior type shipping containers in a manner that will ensure safe

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transportation at the lowest rate to the point of delivery. Containers should meet Consolidated Freight Classification rules or regulations of other common carriers, as applicable to the mode of transportation.

6.7.3 Physical protection. Cushioning, blocking, bracing and bolting as required should be in accordance with MIL-STD-1186 except that waterproofing requirements for cushioning materials and containers should be waived for domestic shipments. The drop tests of MIL-STD-1186 should be waived when the item is preserved, packaged, and packed for immediate use.

6.8 Subject term (key word) listing.

Hose air
Turbine air
Engine start

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.

CONCLUDING MATERIAL

Custodians:

Army - AV
Navy - AS
Air Force - 99

Preparing activity
Navy - AS

(Project 4720-0171)

Review activities:

Navy - MC
Air Force - 82
DLA - CC

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APPENDIX A

SECURING DUCT AND SCUFF COVER ASSEMBLY TO MS17833 AND MS17835 CONNECTORS

A.1 SCOPE

A.1.1 Scope. This appendix covers procedures for attaching MS17833 and MS17835 connectors to the duct and scuff cover. This appendix is not a mandatory part of this specification and the information contained herein is guidance only.

A.2 Installation procedure. The duct shall be secured to male (MS17833) and female (MS17835) connectors with Band-It buckles (part number C-256) and bands (part number C-206). To install the bands and buckles, place three 3/4 inch bands and three buckles on each end of the duct assembly for the purpose of attaching the duct to the MS17833 and MS17835 fittings. The first two banks of MS17833 fittings (closest to the flanged end) shall have one band on each bank that will secure only the duct to the fitting. The third bank shall have a band on the exterior of the scuff cover to secure the cover to the fitting. radially locate the buckles 120° apart around the duct. Install the clamps using the tool (C001) and nut (C040) manufactured by Band-It. Torque the clamps to a value of 100 inch pounds. While torquing, tap around the clamp to seat it firmly. Use the same procedures for the MS17835 connector on the opposite end.

A.2.1 General information. The above installation procedure is provided by the apparatus manufacturer "Band-It Division, Houdaille Industries Inc., Denver, CO 80216, Code Identification No. 70847." Further information should be contacted to the above address.

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.

I RECOMMEND A CHANGE:

1. DOCUMENT NUMBER
MIL-DTL-22706G

2. DOCUMENT DATE (YYMMDD)
1997 August 20

3. DOCUMENT TITLE

Duct and Scuff Cover, Pneumatic, Flexible

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:

7. DATE SUBMITTED
(YYMMDD)

(2) DSN:
(If Applicable)

8. PREPARING ACTIVITY

a. NAME
COMMANDER
NAVAL AIR WARFARE CENTER
AIRCRAFT DIVISION

b. TELEPHONE NUMBER (Include Area Code)
(1) Commercial (732) 323-2947 (2) DSN 624-2947

c. ADDRESS (Include Zip Code)
CODE 4.1B120-3
HIGHWAY 547
LAKEHURST, NJ 08733-5100

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 DSN 289-2340