INCH-POUND

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MILITARY SPECIFICATION

CONNECTOR ACCESSORIES, ELECTRICAL GENERAL SPECIFICATION FOR

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

1. SCOPE

*1.1 Scope. This specification covers connector accessories for use with electrical connectors under environmental or non-environmental conditions. Applicable connector accessories defined in this specification are delineated for the suppression of Electromagnetic Interference (EMI) and Radio Frequency Interference (RFI).

*1.1.1 Connector accessory categories. Connector accessories covered in this specification shall include but are not limited to the following categories:

Category	Item	Description
1A Heavy Duty	Connector Accessory, Cable Sealing, Environmental	Provides water proofing and environmental sealing under specified hydrostatic pressure. Straight, 90°, or 45° configurations. May include termination features for individual or overall EMI/RFI shielding. May include strain relief. Withstands most severe shock, vibration, cable pullout, and external bending moment.

1/ Supersedes only Figure 11 of MIL-C-38999.

Beneficial comments (recommendations, additions, deletions) and any pertinent data which may be of use in improving this document should be addressed to: Systems Engineering and Standardization Department (SESD) (Code 53), Naval Air Engineering Center, Lakehurst, NJ 08733-5100, by using the self-addressed Standardization Document Improvement Proposal (DD Form 1426) appearing at the end of this document or by letter.

AMSC N/A FSC 53

Category	Item	Description
1B Medium Duty	Connector Accessory, Cable Sealing, Environmental	Same as for Category 1A. Withstands less severe shock, vibration, cable pullout, and external bending moment than Category 1A.
1C Light Duty	Connector Accessory, Cable Sealing, Environmental	Same as for Category 1A. Withstands less severe shock, vibration, and external bending moment than Category 1B. No cable pullout capability.
2A Heavy Duty	Connector Accessory, Environmental	Does not provide waterproofing and environmental sealing under hydrostatic pressure. Straight, 90°, or 45° configurations. May include termination features for individual or overall EMI/RFI shielding. May include strain relief. Withstands most severe shock, vibration, cable pullout and external bending moment.
2B Medium Duty	Connector Accessory, Environmental	Same as for Category 2A. Withstands less severe shock, vibration, cable pullout and external bending moment than Category 2A.
2C Light Duty	Connector Accessory, Environmental	Same as for Category 2A. Withstands less severe shock, vibration, and external bending moment than Category 2B. No cable pullout capability.
3A Heavy Duty	Connector Accessory, Nonenvironmental	May provide termination features for individual or overall, wire or cable, shielding. May extend working area for wire or cable termination. Straight, 90°, or 45° configurations. May include termination features for individual or overall EMI/RFI shielding. May include strain relief. Withstands most severe shock, vibration, cable and external bending moment.

Category	Item	Description
3B Medium Duty	Connector Accessory, Nonenvironmental	Same as for Category 3A. Withstands less severe shock, vibration, cable pullout and external bending moment than Category 3A.
3C Light Duty	Connector Accessory, Nonenvironmental	Same as for Category 3A. Withstands less severe shock, vibration, and external bending moment than Category 3B. No cable pullout capability.
4A Heavy Duty	Connector Accessory, Strain Relief, Nonenvironmental	Provides mechanical strain and side loading relief to wire bundles and cable support to jacketed cables. Straight, 90°, or 45° configurations. May be attached to wire bundle or cable by means of metal clamp, plastic straps, lacing cord, or twine. Withstands same shock, vibration, cable pullout, and external bending moment as medium duty connector accessories of Categories 1, 2 and 3.
4B Medium Duty	Connector Accessory, Strain Relief, Nonenvironmental	Same as Category 4A. Withstands less severe shock, vibration, cable pullout, and external bending moment than Category 4A.
4C Light Duty	Connector Accessory, Strain Relief, Nonenvironmental	Same as Category 4A. Withstands less severe shock, vibration, cable pullout and bending moment than Category 4A. No cable pullout capability.
5	Connector Accessory, Adapter, Shrink Boot and Ring, Potting Boot	Provides means of attaching heat shrinkable boot to connector. Provides means of attaching potting boot to connector.
6	Boots and Sleeves, Heat Shrinkable	Cancelled.

Category	Item	Description
7	Connector Accessory, Miscellaneous Devices	Examination of product. This category defines connector accessories which require relatively few test procedures for qualification. Additional requirements and test procedures shall be defined in the individual specification sheet.
8A	Connector Accessory, Adapter, Conduit, Cable Sealing	Provides waterproofing and environmental sealing under hydrostatic pressure. Straight or angled.
8B	Connector Accessory, Adapter, Conduit, Nonenvironmental	Provides termination area for connectors on conduit. Straight or angled.

*1.2 Classification. Connector accessories shall be of the size, style, finish, and class as specified on the applicable military specification sheet (see 3.1).

2. APPLICABLE DOCUMENTS

*2.1 Government documents.

*2.1.1 Specifications and standards. The following specifications and standards form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of these documents shall be those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, cited in the solicitation.

SPECIFICATIONS

FEDERAL

QQ-P-35	Passivation Treatments for Austentic, Ferretic, and Corrosion Resisting Steel
*QQ-A-225	Aluminum and Aluminum Alloy Bar, Rod, Wire, or Shapes; Rolled, Drawn, or Cold Finished
QQ-A-250	Aluminum and Aluminum Alloy Plate and Sheet
QQ-A-591	Aluminum Alloy Die Castings
*QQ-A-601	Aluminum Alloy Sand Castings
QQ-P-416	Plating, Cadmium (Electrodeposited)
*QQ-S-763	Steel Bars, Wires, Shapes and Forgings Corrosion-Resisting

MILITARY

*MIL-C-915	Cable and Cord, Electrical, for Shipboard Use
MIL-C-5015	Connectors, Electrical, Circular Threaded, AN Type
MIL-S-7742	Screw Threads, Standard, Optimum Selected Series
MIL-A-8625	Anodic Coating, for Aluminum and Aluminum Alloys
MIL-C-22992	Connectors, Plugs and Receptacles, Electrical, Waterproof, Quick Disconnect, Heavy Duty Type, General Specification for
MIL-C-24308	Connectors, Electric, Rectangular, Miniature Polarized Shell, Rack and Panel
MIL-R-25988	Rubber, Fluorosilicone Elastomer, Oil and Fuel Resistant, Sheets, Strips, Molded Parts, and Extruded Shapes
MIL-C-26074	Coatings, Electroless Nickel, Requirements for
MIL-C-26482	Connectors, Electrical (Circular, Miniature, Quick Disconnect, Environment Resisting), Receptacles and Plugs
MIL-C-27599	Connector, Electrical, Miniature, Quick Disconnect (for Weapons Systems), Established Reliability
MIL-C-28804	Connector, Electric, Rectangular, High Density, Polarized Center Jackscrew, General Specification for
MIL-C-38999	Connectors, Electrical, Circular, Miniature, High Density, Quick Disconnect (Bayonet, Threaded, and Breech Coupling), Environment Resistant, Removable Crimp and Hermetic Solder Contacts
MIL-C-55330	Connectors, Electrical and Fiber Optic, Packaging of
MIL-C-81703	Connectors, Electric, Circular, Miniature, Rack and Panel or Push-Pull Coupling, Environment Resisting
MIL-C-83723	Connectors, Electrical, Circular (Environment Resisting), Receptacles and Plugs

SPECIFICATIONS (Continued)

MILITARY (Continued)

MIL-C-83733	Connectors, Electrical, Miniature, Rectangular Type, Rack to Panel, Environment Resisting, 200°C Total Continuous Operating Temperature, General Specification for

STANDARDS

FEDERAL

FED-STD-H28	Federal Standards, Screw-Thread Standards for Federal Services

MILITARY

MS20995	Wire, Safety or Lock
MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-167-1	Mechanical Vibrations of Shipboard Equipment (Type I - Environmental and Type II - Internally Excited)
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts
MIL-STD-454	Standard General Requirements for Electronic Equipment
MIL-STD-790	Reliability Assurance Program for Electronic Parts Specifications
MIL-STD-1285	Marking of Electrical and Electronic Parts
MIL-STD-1344	Test Methods for Electrical Connectors
MIL-STD-45662	Calibration Systems Requirements

(Copies of applicable specifications, standards and handbooks listed in the Department of Defense Index of Specifications and Standards (DODISS) and required by the contractor in connection with specific procurement functions may be obtained upon application to the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

(For associated MS standards and specification sheets, see Supplement.)

*2.2 Other publications. The following document(s) form a part of this specification to the extent specified herein. Unless otherwise specified, the issues of the documents which are Department of Defense (DOD) adopted shall be those listed in the issue of the DODISS specified in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS shall be the issue of the nongovernment documents which is current on the date of the solicitation.

ASTM

ASTM D 4066 Nylon, Injection and Extrusion Materials (PA)

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

SD-6 Provisions Governing Qualification

(Application for copies should be addressed to the Standardization Documents Order Desk, Building 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.)

*2.3 Order of precedence. In the event of a conflict between the text of this specification and the references cited herein (except for associated detail specifications, specification sheets, or MS standards), the text of this specification shall take precedence. Nothing in this specification, however, shall supersede applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Specification sheets. The individual item requirements shall be as specified herein and in accordance with the applicable specification sheet. In the event of any conflict between the requirements of this specification and the specification sheet, the latter shall govern.

3.2 Qualification. The connector accessories furnished under this specification shall be products which are authorized by the qualifying activity for listing on the applicable qualified products list at the time set for opening of bids (see 4.3 and 6.6).

3.2.1 Provisions governing qualification. The provisions governing qualification are specified in SD-6.

3.2.2 Reliability. The contractor's reliability program for assembled connector accessories and assembly procedures shall meet the requirements of MIL-STD-790.

3.3 Materials. Materials shall be suitable for the purpose intended and as specified (see 3.1), however, when a definite material is not specified, a material shall be used which will enable the connector accessory to meet the performance requirements of this specification. Acceptance or approval of any constituent material shall not be construed as a guarantee for acceptance of the finished product.

3.3.1 Corrosion resisting steel. Where applicable, corrosion resisting steel shall be 300 series, in accordance with QQ-S-763.

3.3.2 Composite. Corrosion resistant, high performance resins with or without filler materials. The resins must be defined by specifications listed in the DODISS or published by professional materials associations. Exceptions may be granted by the preparing activity.

3.3.3 Aluminum. Aluminum alloy shall be in accordance with QQ-A-225, QQ-A-250, QQ-A-591, or QQ-A-601.

*3.3.4 Elastomers. Unless otherwise specified (see 3.1), elastomers shall be silicone or fluorosilicone. Connector accessories which utilize elastomers shall meet the fluid immersion requirements (see 3.5.12).

*3.3.5 Nylon. Nylon shall be in accordance with ASTM D 4066, shall be fungus inert in accordance with Requirement 4 of MIL-STD-454 (see 4.6.14), shall be self-extinguishing in accordance with MIL-STD-454, Requirement 3, and shall be non-toxic.

3.3.6 Dissimilar metals. When dissimilar metals are employed in intimate contact with each other, suitable protection against electrolytic corrosion shall be provided as specified in MIL-STD-454, Requirement 16.

*3.3.7 Finish. Finish for aluminum connector accessories shall be as follows:

A - Black Anodize - In accordance with Class 2 of MIL-A-8625, Type II.

N - Electroless Nickel - In accordance with MIL-C-26074, Class 3 or 4, Grade B. Restricted to space applications only.

1/ W - Cadmium - Olive drab over suitable underplate, 1000 hour salt spray (see 3.5.3).

1/ W is not for use in space application.

Finish for corrosion resisting steel accessories shall be as follows:

B - Black Cadmium - In accordance with QQ-P-416, Type II, Class 3.

S - Passivate - In accordance with QQ-P-35.

Finish for composite accessories shall be as follows:

J - Olive drab cadmium plate in accordance with QQ-P-416 over a suitable underplate to withstand 2000 hour salt spray (see 3.5.3). Final finish shall be electrically conductive.

M - Electrically conductive electroless nickel plating. Finish shall withstand 2000 hour salt spray (see 3.5.3). Use of a suitable underplate is permissible.

3.4 Design and construction. Connector accessories shall be designed and constructed to withstand normal handling incident to installation and maintenance in service.

3.4.1 Configuration. The configuration and dimensions of connector accessories shall be as specified (see 3.1).

*3.4.2 Screw threads. English unit screw threads intended to mate with connectors, unless otherwise specified, shall be unified 2A or 2B, conforming to MIL-S-7742. Metric unit screw threads intended to mate with connectors shall be in accordance with FED-STD-H28. Screw threads shall be checked after plating by means of ring and plug gages only, in accordance with FED-STD-H28. Out of roundness is not objectionable if the threads can be checked without forcing the thread gage.

3.4.3 Safety wiring. When specified threaded coupling connector interfaces shall be designed for safety wiring. A minimum of two holes shall be provided for shell size 14 or smaller, and at least three equally spaced holes for sizes 16 and larger. Holes shall be of a diameter sufficient to accommodate .020 inch wire. For non-self-locking accessories safety wire holes shall not be optional. Self-locking accessories shall not have safety wire holes on the coupling nut.

3.4.4 Interchangeability. All connector accessories having the same military part number shall be completely interchangeable with each other with respect to installation and performance as specified herein.

*3.4.5 Intermateability. Unless otherwise specified (see 3.1), the intermateability control dimensions for the threaded mating end of the connector accessories shall conform to the interface dimensions specified in Figures 2 - 4 and Tables VIII - X.

*3.4.6 Spin coupling. Unless otherwise specified (see 3.1), for all circular connector accessory applications the coupling nut shall have spin coupling. The coupling nut shall be captivated to, and free to rotate on, the follower of the circular connector accessory. Unless otherwise specified (see 3.1), the spin coupling nut will be either non-self-locking or self-locking. The self-locking coupling devices may exhibit some mechanical resistance while captivated to the follower.

3.4.6.1 Self-locking devices. The self-locking device within the coupling nut shall be a corrosion-resistant material and shall provide a positive detent. Couplings with self-locking devices shall meet all the performance requirements specified herein for the accessories specific category.

*3.4.7 Dummy connector test fixture. When specified for applicable tests in this specification, a dummy connector test fixture which duplicates the connector interfacing features may be used in place of the applicable connector. The dummy connector test fixture material shall be aluminum alloy in accordance with 3.3.2 for aluminum connector accessory testing and corrosion resistant steel in accordance with 3.3.1 for corrosion resistant steel connector accessory testing. The dummy connector test fixture shall

have the same plating as the connector accessory being tested. The dummy connector test fixture configuration and dimensions for MIL-C-38999 Series I and II connectors; for MIL-C-38999 Series III and IV connectors; and MIL-C-5015 crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3, and MIL-C-83723 Series III are defined in Figures 5 - 7 and Table XI - XIV, respectively.

*3.4.7.1 Dummy connector test plug. When specified for applicable tests in this specification, a dummy cable test plug made of metal core and coated with neoprene, polychloroprene or fluorocarbon polymer. The test plug diameter shall be equal or not more than 0.016 (.406 mm) smaller than the minimum cable sealing diameter being tested.

*3.5 Performance requirements. Connector accessories shall meet the performance requirements specified herein when tested in accordance with the specified methods of Section 4.

3.5.1 Magnetic permeability. When tested as specified in 4.6.2, the relative permeability of the connector accessory shall be less than 2.0 for aluminum accessories and 5.0 for stainless steel.

*3.5.2 Shell conductivity. When tested as specified in 4.6.3, the counterpart connector and connector accessory assembly shall be electrically conductive. The overall resistance shall not exceed 0.025 ohms for aluminum connector accessories and 0.05 ohms for stainless steel connector accessories.

*3.5.3 Salt spray (corrosion). When tested as specified in 4.6.4, connector accessories shall show no exposure of basis material due to corrosion, which could affect performance. For finish J, after 500 hours salt spray, inspect connector accessories for cadmium (inspection method optional). No underplate or basis material shall be exposed. Return to chamber for completion of test.

*3.5.4 Vibration. When tested as specified in 4.6.5, connector accessories shall not be damaged, nor shall there be any loosening of parts during vibration. Monitoring for electrical conductivity shall not be utilized for pass fail criteria.

*3.5.5 Shock. When tested as specified in 4.6.6, connector accessories shall not be damaged, nor shall there be any loosening of parts during exposure to shock.

*3.5.6 Humidity (category 2). After being subjected to the humidity test specified in 4.6.7, connector accessories mated to counterpart connectors (or dummy connectors, see 3.4.7) shall be examined and there shall be no evidence of water entrance.

*3.5.7 Water pressure (categories 1 and 8A only). After being subjected to the test specified in 4.6.8, connector accessories shall be examined and shall show no evidence of internal water entrance.

*3.5.8 Cable pullout. When tested as specified in 4.6.9, the test plug shall not pull out nor shall slippage exceed .125 inch. The cable pullout requirement is not applicable to categories 1C, 2C, 3C and 4C.

*3.5.9 Coupling thread strength. When tested as specified in 4.6.10, connector accessory threads shall withstand the torque specified in Table III without damage. MIL-C-85049, category 5 connector accessories shall satisfy the heavy duty requirement specified in Table III for specification sheets that are utilized for MIL-C-38999 Series III and IV, MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3, and MIL-C-83723 Series III; and MIL-C-22992 Class C, J, and R connectors. Category 5 connector accessories that are used on MIL-C-38999 Series I and II and MIL-C-27599 connectors shall satisfy the medium duty requirement specified in Table III. Category 8 connector accessories shall satisfy the heavy duty requirement specified in Table III.

*3.5.10 External bending moment. When tested as specified in 4.6.11, connector accessories shall show no evidence of damage detrimental to their normal operation.

*3.5.11 Safety wire holes (not applicable to self-locking coupling). When tested as specified in 4.6.12, the safety wire (lock wire) hole shall not pull out.

3.5.12 Fluid immersion. When tested as specified in 4.6.13, the elastomers (see 3.3.3) shall show no evidence of cracking, swelling or expansion which would be detrimental to performance.

3.5.13 Life cycle (self-locking) (see 4.6.15). After being subjected to the test specified in 4.6.15, connector accessories shall pass succeeding tests.

3.5.14 Temperature cycling (finishes J and M). When tested as specified in 4.6.16 there shall be no blistering, peeling or separation of plating, or other damage detrimental to the operation of the connector accessories.

3.5.15 Hydrolytic stability (finishes J and M). When tested as specified in 4.6.17, the connector accessories shall be without defects detrimental to performance. There shall be no increase in weight greater than 5%. Connector accessories shall meet the coupling thread strength requirements of paragraph 3.5.9.

3.6 Marking. Connector accessories shall be legibly and permanently marked in accordance with MIL-STD-1285. The part number shall be as specified (see 3.1).

*3.6.1 Superseded Military Standard (MS) connector accessory marking. Equivalent MS connector accessories which are superseded by MIL-C-85049 parts shall have the corresponding new MIL-C-85049 part number marked on the part. The superseded MS connector accessory shall meet the requirements of the corresponding MIL-C-85049 specification sheet (see 6.7).

3.7 Workmanship. Connector accessories shall meet all design dimensions, interchangeability, and intermateability requirements. Poor molding, nicks, burrs, or chipping of plating or finish shall be considered adequate basis for rejection of items as inferior quality for qualification inspection or quality conformance inspection.

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 such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

*4.1.1 Responsibility for compliance. All items 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 Test equipment and inspection facilities. Test and measuring equipment and inspection facilities of sufficient accuracy, quality and quantity to permit performance of the required inspection shall be established and maintained by the contractor. The establishment and maintenance of a calibration system to control the accuracy of the measuring and test equipment shall be in accordance with MIL-STD-45662.

*4.2 Classification of inspections. The inspections specified herein are classified as follows:

a. Qualification inspection (see 4.3).

b. Retention of qualification (see 4.3.4).

c. Quality conformance inspection (see 4.4).

*4.2.1 Inspection conditions. Unless otherwise specified, all inspections shall be performed in accordance with the test conditions specified in the "General Requirements" of MIL-STD-1344.

*4.3 Qualification inspection. Qualification inspection shall consist of all of the applicable examinations and tests performed in the sequence specified in Table I on the qualification test samples specified in 4.3.3. Qualification tests shall not begin until authorized by the qualifying activity (see 6.7). The letter of authorization shall specify the conditions under which the qualification tests shall be performed and specify the number of tested or untested samples required to be submitted with the test results. Samples shall be provided to the qualifying activity at no cost to the government.

*TABLE I. Qualification inspection.

Inspection	Requirement paragraph	Test method paragraph
Category 1		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Magnetic permeability	3.5.1	4.6.2
Shell conductivity	3.5.2	4.6.3
Salt spray (corrosion)	3.5.3	4.6.4
Shell conductivity	3.5.2	4.6.3
Vibration - Category 1A	3.5.4	4.6.5.1
Category 1B	3.5.4	4.6.5.2
Category 1C	3.5.4	4.6.5.3
Shock - Category 1A	3.5.5	4.6.6.1
Categories 1B and 1C	3.5.5	4.6.6.2
Water pressure	3.5.7	4.6.8
Cable pullout - Categories 1A and 1B	3.5.8	4.6.9
Coupling thread strength	3.5.9	4.6.10
External bending moment	3.5.10	4.6.11
Safety wire holes	3.5.11	4.6.12
Post examination	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Category 2		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Magnetic permeability	3.5.1	4.6.2
Temperature cycling (finishes J and M)	3.5.14	4.6.16
Hydrolytic stability (finishes J and M)	3.5.15	4.6.17
Coupling thread strength	3.5.9	4.6.10
Shell conductivity	3.5.2	4.6.3
Salt spray (corrosion)	3.5.3	4.6.4
Shell conductivity	3.5.2	4.6.3
Vibration - Category 2A	3.5.4	4.6.5.1
Category 2B	3.5.4	4.6.5.2
Category 2C	3.5.4	4.6.5.3
Shock - Category 2A	3.5.5	4.6.6.1
Categories 2B and 2C	3.5.5	4.6.6.2
Humidity	3.5.6	4.6.7
Cable pullout - Categories 2A and 2B	3.5.8	4.6.9
Coupling thread strength	3.5.9	4.6.10
External bending moment	3.5.10	4.6.11
Safety wire holes	3.5.11	4.6.12
Post examination	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1

*TABLE I. Qualification inspection (continued).

Inspection	Requirement paragraph	Test method paragraph
Category 3		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Life cycling	3.5.13	4.6.15
Magnetic permeability	3.5.1	4.6.2
Temperature cycling (finishes J and M)	3.5.14	4.6.16
Hydrolytic stability (finishes J and M)	3.5.15	4.6.17
Coupling thread strength	3.5.9	4.6.10
Salt spray (corrosion)	3.5.3	4.6.4
Shell conductivity	3.5.2	4.6.3
Vibration - Category 3A	3.5.4	4.6.5.1
Category 3B	3.5.4	4.6.5.2
Category 3C	3.5.4	4.6.5.3
Shock - Category 3A	3.5.5	4.6.6.1
Categories 3B and 3C	3.5.5	4.6.6.2
Cable pullout - Categories 3A and 3B	3.5.8	4.6.9
Coupling thread strength	3.5.9	4.6.10
External bending moment	3.5.10	4.6.11
Safety wire holes	3.5.11	4.6.12
Post examination	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Category 4		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Life cycling	3.5.13	4.6.15
Magnetic permeability	3.5.1	4.6.2
Temperature cycling (finishes J and M)	3.5.14	4.6.16
Hydrolytic stability (finishes J and M)	3.5.15	4.6.17
Coupling thread strength	3.5.9	4.6.10
Salt spray (corrosion)	3.5.3	4.6.4
Vibration - Category 4A	3.5.4	4.6.5.2
Category 4B and 4C	3.5.4	4.6.5.3
Shock - Categories 4A, 4B and 4C	3.5.5	4.6.6.2
Cable pullout - Categories 4A and 4B	3.5.8	4.6.9
Coupling thread strength	3.5.9	4.6.10
External bending moment	3.5.10	4.6.11
Safety wire holes	3.5.11	4.6.12
Post examination	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1

*TABLE I. Qualification inspection (continued).

Inspection	Requirement paragraph	Test method paragraph
Category 5		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Magnetic permeability	3.5.1	4.6.2
Salt spray (corrosion)	3.5.3	4.6.4
Vibration	3.5.4	4.6.5.3
Shock	3.5.5	4.6.6.2
Coupling thread strength	3.5.9	4.6.10
Safety wire holes	3.5.11	4.6.11
Post examination	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Category 7		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Category 8		
Examination of product	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1
Magnetic permeability	3.5.1	4.6.2
Salt spray (corrosion)	3.5.3	4.6.4
Vibration	3.5.4	4.6.5.2
Shock	3.5.5	4.6.6.2
Water pressure (Category 3A only)	3.5.7	4.6.8
Coupling thread strength	3.5.9	4.6.10
Safety wire holes	3.5.11	4.6.12
Post examination	3.1, 3.3, 3.4, 3.6 and 3.7	4.6.1

*4.3.1 Qualification by similarity. For parts which differ only in minor details from those submitted for qualification (see 4.3.2), the manufacturer shall provide data from control drawings which describes the dimensions specified in 3.1 and 3.4. This data shall be tabulated and compared against the dimensional requirements. The extent of qualification testing by similarity shall be specified by the Qualified Products Laboratory (QPL) evaluating activity.

*4.3.2 Sample size. Two sample connector accessories in each shell size range (small range 08 to 16); (medium range 18 to 28); (large range 32 to 48), for MIL-C-5015 and MIL-C-22992 accessories, and (small range 08/09 to 12/13); (medium range 14/15 to 18/19); (large range 20/21 to 24/25) for the MIL-C-38999 Series I thru IV accessories, and in each finish for which qualification is desired, shall be provided for qualification testing. Each part subjected to qualification testing shall be provided with an applicable connector. The counterpart connectors supplied for this purpose shall be new,

previously qualified connectors. Manufacturers not producing connectors shall submit data substantiating that tests were performed with qualified counterpart connectors. For those tests not requiring indication of connector performance when tested with the connector accessory, a similarly compatible dummy connector, duplicating accessory mating features may be used in place of an actual connector.

*4.3.2.1 Counterpart connectors. Counterpart connectors shall be qualified to MIL-C-5015, MIL-C-22992, MIL-C-24308, MIL-C-26482, MIL-C-27599, MIL-28804, MIL-C-38999, MIL-C-81703, MIL-C-83723, or MIL-C-83733.

4.3.2.2 Preparation of samples (self-locking). For Qualification Testing self-locking accessories shall be installed on the specified connector or fixture with a coupling torque of 80 percent of the coupling thread strength values given for medium and light duty accessories as specified in Table III. Tolerances shall be ±5 inch-pounds.

*4.3.3 Failures. There shall be no failures during any examination or tests of the connector accessories submitted for qualification tests. The agent responsible for qualification testing (see 6.6), shall notify the manufacturer of the failures. The manufacturer shall submit details of the failure corrective action before the qualification agent will initiate any further tests required to assure compliance with this specification.

*4.3.4 Retention of qualification. At thirty-six month intervals the manufacturer shall submit retention of qualification data. The qualifying activity shall establish the initial reporting date. The manufacturer shall request authorization to begin testing and shall make the request sufficiently enough in advance of the due date to ensure timely submission of the data. Retention of qualification consists of the applicable tests of Table I, on the sample size specified in 4.3.4.1. Tested and untested connector accessories and materials may be required to be submitted to the qualifying activity (see 6.6) at no cost to the government. Failure to submit to retention of qualification shall result in loss of qualification for previously approved products.

*4.3.4.1 Retention of qualification samples. For each category (see 1.1.1) of which the manufacturer is qualified, two sample connector accessories in each shell size (small range 08 thru 16; medium range 18 to 28; large range 32 to 48) for MIL-C-5015 and MIL-C-22992 accessories, and (small range 08/09 to 12/13; medium range 14/15 to 18/19; large range 20/21 to 24/25) for the MIL-C-38999 Series I thru IV accessories. All qualified finishes (see 3.3.6) and base metals (cast and wrought materials) shall be included as part of the sample in each category. For all other connector accessories qualified but not being tested, the dimensions described in 3.1 and 3.4 shall be extracted from the manufacturer control drawings, tabulated, and then compared against the specification requirements. Manufacturers not producing connectors shall submit data substantiating that tests were performed with qualified counterpart connectors. For those tests not requiring indication of connector performance when tested with the connector accessory, a similarly compatible dummy connector, duplicating accessory mating features may be used in place of an actual connector.

*4.3.4.2 Disposition of failures. The disposition of failures shall be as specified in 4.3.3.

4.4 Quality conformance inspection.

4.4.1 Inspection of product for delivery. Inspection of product for delivery shall consist of the examination of the product in accordance with 4.6.1.

*4.4.2 Inspection lot. An inspection lot shall consist of all connector accessories of the same type covered by one specification sheet, produced under essentially the same conditions, and offered for inspection at one time.

*4.4.3 Sampling plan. Statistical sampling and inspection shall be in accordance with MIL-STD-105 for general inspection level II. Unless otherwise specified, the Acceptable Quality Level (AQL) shall be 1.0 for major defects and 4.0 for minor defects. Major and minor defects shall be as defined in MIL-STD-105.

*4.4.4 Rejected lots. If an inspection lot is rejected, the contractor may rework it to correct the defects, or screen out the defective units and resubmit for reinspection. Resubmitted lots shall be inspected in accordance with MIL-STD-105, tightened inspection. Such lots shall be separate from new lots and shall be clearly identified as reinspected lots. The contractor shall notify the qualifying activity (see 6.6) immediately of any quality conformance inspection failures which result in a change in control drawings or process control inspection points. Failure to notify the qualifying activity may result in loss of qualification of that product.

4.4.5 Disposition of sample units. Sample units which have passed quality conformance inspection may be delivered on the contract if the lot is accepted and the sample units are still within specified tolerances.

4.5 Inspection of packaging. Sample packages and packs and the inspection of the preservation-packaging, packing and marking for shipment and storage shall be in accordance with the requirements of MIL-C-55330.

4.6 Methods of inspection.

*4.6.1 Examination of product. The connector accessories shall be examined to assure compliance with the following requirements:

a. Military specification sheet (see 3.1).

b. Materials (see 3.3).

c. Design and construction (see 3.4).

d. Temperature cycling (finishes J and M) (see 3.5.14).

e. Marking (see 3.6).

f. Workmanship (see 3.7).

*4.6.1.1 In-process controls. The contractor may use in-process controls to satisfy the requirements listed in 4.6.1. These in-process controls will be subject to review by the qualifying activity (see 6.6) upon request.

*4.6.2 Magnetic permeability (see 3.5.1). The relative permeability shall be in accordance with MIL-STD-1344, method 3006.

*4.6.3 Shell conductivity (see 3.5.2). Shell conductivity shall be measured in accordance with MIL-STD-1344, method 3007. The applied potential shall be 1.5 volts maximum. A resistance shall be inserted in the circuit to limit the current to .100 amperes + .010. Measurements shall be made from a point on the overall cable shield (or individual wire shields, if applicable), located 1.0 inch + .25 to the rear of the connector accessory, to the point on the square flange receptacle as specified in MIL-STD-1344, method 3007.

*4.6.4 Salt spray (corrosion) (see 3.5.3). Connector accessories shall be tested in accordance with MIL-STD-1344, method 1001. The samples shall not be mounted, but shall be suspended from the top of the chamber using waxed twine or string, glass rods, or glass cord. The duration shall be as specified in 4.6.4.1, 4.6.4.2 or 4.6.4.3.

*4.6.4.1 Standard test (96 hours). Stainless steel connector accessories with finish B and aluminum connector accessories with finish N (see 3.3.6), shall be subjected to test condition letter A for a duration of 96 hours.

*4.6.4.2 Extended test (1000 hours). Stainless steel connector accessories with finish S and aluminum connector accessories with finish A and W (see 3.3.6), shall be subjected to test condition letter D for a duration of 1000 hours for initial qualification. Finish S, A and W connector accessories shall be subjected to test condition letter C for a duration of 500 hours for retention of qualification.

4.6.4.3 Extended test (2000 hours). Composite accessories with finish J and M shall be subjected for a duration of 2000 hours.

*4.6.5 Vibration. A counterpart receptacle connector shall be mounted on a suitable fixture, which in turn shall be attached to the vibration table. The fully wired counterpart connector or approved modification to fixturing and connector accessory shall be engaged with the receptacle by normal locking means. No safety wire shall be used. The sensing device shall monitor vibration at a point on or near the receptacle connector. Vibration for self-locking (see 3.1).

*4.6.5.1 Vibration - Heavy duty (see 3.5.4). The assembly shall be subjected to the vibrational requirements of MIL-STD-167-1(SHIPS), paragraph 5.1.3.3.3.

*4.6.5.2 Random vibration - Medium duty (see 3.5.4). The connector accessory shall then be subjected to MIL-STD-1344, method 2005, test condition VI, letter J. The duration of the test shall be 8 hours in the longitudinal direction and 8 hours in the perpendicular direction.

*4.6.5.3 Vibration - Light duty (see 3.5.4). The connector accessory shall then be subjected to MIL-STD-1344, method 2005, condition III.

4.6.6 Shock.

4.6.6.1 Shock - Heavy duty (see 3.5.5). Connector accessories shall be assembled to counterpart plug and receptacle connectors, wired with 6 feet of MIL-C-915, Type MSCU (unarmored) cable, and tested in accordance with MIL-STD-202, method 207. Mounting fixtures shall be in accordance with MIL-STD-202, method 207. No safety wire shall be used. Cables shall be supported on a stationary frame a minimum of 36 inches from the assembly. Monitoring for discontinuity is not required.

4.6.6.2 Shock - Medium and light duty (see 3.5.5). A counterpart receptacle connector, mounted on a suitable fixture, shall be attached to the shock machine. The wired mating plug connector and connector accessory shall be engaged with the receptacle connector by normal locking means. The cable shall be clamped to a fixed point at least 8 inches from the rear of the assembly. The assembly shall be subjected to the shock test requirements of MIL-STD-1344, method 2004, condition C. Monitoring for discontinuity is not required.

*4.6.7 Humidity (see 3 5.6). The accessory sample shall be prepared as specified in 4.6.10. The prepared accessory sample shall be subjected to humidity in accordance with MIL-STD-1344, method 1002, test procedure II with the exception of step 7b.

*4.6.8 Water pressure (see 3.5.7). The connector accessory shall be assembled to a counterpart connector (or dummy connector test fixture, see 3.4.7). The face of the connector (or dummy connector) shall have a section of cable (or test plug, see 3.4.7.1) installed to simulate jacketed cable. The face of the connector (or dummy connector) shall be protected from the test environment. Use of lubricants which act as a sealant in this test is prohibited. The assembly shall be immersed in tap water to a depth of 6 feet for a period of 48 hours.

*4.6.9 Cable pullout (see 3.5.8). The connector accessory shall be subjected to cable pullout in accordance with MIL-STD-1344, method 2009, except that the test plug (see 3.4.7.1) shall be installed in the assembly in lieu of cable. The applicable tensile load specified in Table II shall be applied to the test plug in the direction tending to displace it toward the rear of the connector accessory. The load shall be applied for a period of 1 hour and the amount of slippage shall be measured.

*4.6.10 Coupling thread strength (see 3.5.9). A counterpart connector or dummy connector (see 3.4.7) shall be mounted in a suitable fixture. The connector accessory shall be attached and a torque wrench used to apply the required torque at a rate of approximately 10 pounds per second. The connector accessory thread torque shall be as specified in Table III. After the required load has been held for 1 minute minimum, the connector accessory shall be removed and inspected to 3X magnification for damage or breakage.

TABLE II. Cable pullout (categories 1 through 4 with cable clamp).

Cable Range	Load Heavy Duty	Load Medium Duty
.062- .500	25	12.5
.501- .750	50	25
.751-1.500	75	37.5
1.501-2.500	100	50

NOTE: Test plug diameter should equal the minimum cable range with a +.000/-.016 tolerance. (For example cable range minimum .500 = test plug .500/.484 diameter.

TABLE III. Coupling thread strength.

Shell Size	Accessory thread torque ±.5 inch pounds	
	Heavy duty	Medium and light duty
8,9	75	50
3,10,10SL,11	100	50
7,12,12S,13	140	50
14,14S,15	150	50
16,16S,17	150	50
18,19,27	150	50
20,21,37	175	100
22,23	175	100
24,25,61	175	100
28	190	N/A
32	190	N/A
36	190	N/A
40	210	N/A
44	210	N/A
48	210	N/A

*4.6.11 External bending moment (see 3.5.10). The connector accessory shall be mounted as in normal service to a rigid panel as shown in figure 1. The distance "L" from the point of load application "P" to the front of the connector accessory shall be determined. The load to be applied to point "P" shall then be determined as the bending moment listed in Table IV (see 3.1), divided by the lever arm "L." This load shall be applied at a rate of approximately 10 pounds per second until the required load is achieved. The applied load shall be held for 1 minute, and then released. The load shall be applied as shown, in two axes 90° apart, at different times for straight and angled connector accessories.

*4.6.12 Safety wire holes (see 3.5.11). Safety wire (lock wire) shall be threaded through a lock wire hole, and a pull of 30 + 2 pounds shall be applied. The pull shall be parallel with the axis of the connector, connector accessory, or coupling ring. The safety wire shall be Ni-Cu alloy (Monel) or Ni-Cr alloy (Inconel) .020 diameter in accordance with MS20995.

TABLE IV. Bending moment.

Heavy Duty		Medium Duty		Light Duty		
				Bending Moment (Lbs. Min)		
Shell Size	Bending Moment (Lbs. Min)	Shell Size	Bending Moment (Lbs. Min)	Shell Size	Clamp With Saddle Bars	Clamp W/Out Saddle Bars
8,9	60	8,9	55	8,9	50	25
3,10,10SL,11	130	3,10,10SL,11	90	10,11	75	25
7,12,12S,13	270	7,12,12S,13	180	12,13	75	25
14,14S,15	300	14,14S,15	200	14,15	100	50
16,16S,17	370	16,16S,17	250	16,17	125	50
18,19,27	420	18,19,27	280	18,19	125	50
20,21,37	450	20,21,37	300	20,21	125	75
22,23	520	22,23	350	22,23	125	75
24,25,61	570	24,25,61	380	24,25	150	100
28	630	28	420	28	180	100
32	750	32	500	32	220	
36	810	36	540	36	230	
40	870	40	580	40	240	
44	930	44	620	44	280	
48	990	48	660	48	300	

4.6.13 Fluid immersion (3.5.12). Connector accessory samples shall be subjected to the test specified in MIL-STD-1344, method 1016 (one sample per fluid). Samples shall be subjected to the fluids specified in MIL-STD-1344, method 1016.

*4.6.14 Fungus resistance certification (see 3.3.4). Certification of MIL-STD-454, requirement 4 is required.

4.6.15 Life cycle (self-locking) (see 3.5.13). The coupling with the locking device engaged shall be rotated 60 full turns in a clockwise direction and 60 full turns counterclockwise. Cycle speed shall not exceed one full turn per second.

4.6.16 Temperature cycling (finishes J and M) (see 3.5.14). Connector accessories shall be subjected to the temperature cycling of MIL-STD-1344, method 1003, test condition A, except that steps 2 and 4 shall be of 2 minutes maximum duration. The temperature of step 1 shall be -65° +0, -5°C and the temperature of step 3 shall be 175°C for finish J and 200°C for finish M.

4.6.17 Hydrolytic stability (finishes J and M) (see 3.5.15). Connector accessories shall be subjected to the following water absorption test:

4.6.17.1 Hydrolytic stability (initial qualification). The connectors shall be subjected to the test specified in ASTM D570-81, paragraph 7.4, long-term immersion.

4.6.17.2 Hydrolytic stability (periodic qualification). The connectors shall be subjected to the test specified in ASTM D570-81, paragraph 7.5, 2 hour boiling water immersion.

5. PACKAGING

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-C-55330.

5.2 Assembly instructions. Unless otherwise specified (see 3.1), assembly instructions shall be furnished with each connector accessory and included within the unit container. The assembly instructions shall be approved by the qualifying activity (see 6.6).

6. NOTES

*6.1 Intended use. The connector accessories covered in this specification are intended for use with electrical connectors used in aircraft, missile, shipboard and ground support equipment. Composite connector accessories are intended for use with composite connectors only.

*6.2 Ordering data.

*6.2.1 Acquisition requirements. Acquisition documents should specify the following:

a. Title, number and date of this specification.

b. The complete part number in accordance with the applicable specification sheet (see 3.1).

*6.3 Definitions. The following definitions apply to this specification:

*6.3.1 Cable clamp. A connector accessory or part of a component to grip the cable or wire to provide strain relief and absorb mechanical stress which would otherwise be transmitted to the terminal.

*6.3.2 Cable sealing. Connector accessories which provide waterproofing and environmental sealing under specified hydrostatic pressure.

*6.3.3 Category types. The following definitions are applicable to categories 1A, 1B, 1C, 2A, 2B, 2C, 3A, 3B, 3C, 4A, 4B and 4C:

a. Heavy duty connector accessory (Category A). A connector accessory intended for use in the most extreme environment. This connector accessory withstands the most severe shock, vibration, cable pullout and external bending moment tests.

b. Medium duty connector accessory (Category B). A connector accessory intended for use in an environment less severe than the environment which requires a heavy duty connector accessory. This connector accessory withstands shock, vibration, cable pullout, and external bending moment tests which are less severe than tests for a heavy duty connector accessory.

c. Light duty connector accessory (Category C). A connector accessory intended for use in an environment less severe than the environment which requires a medium duty connector accessory. This connector accessory withstands vibration and external bending moment tests which are less severe than tests for a medium duty accessory. The cable pull-out test is not required for a light duty accessory.

*6.3.4 Environmental. Connector accessories which provide humidity resistance.

*6.3.5 Nonenvironmental. Connector accessories that do not provide humidity resistance.

*6.3.6 Shield termination. Connector accessories which provide the capability of terminating an EMI/RFI cable shield over a wire bundle or cable.

*6.3.7 Strain relief. Connector accessories which provide strain and side loading relief to wire bundles and cable support to jacketed cables.

*6.4 Abbreviations and acronyms. The following abbreviations and acronyms apply to this specification:

AFB - Air Force Base

AQL - Accepted Quality Level

DOD - Department of Defense

DODISS - Department of Defense Index of Specifications and Standards

EMI - Electromagnetic Interference

MS - Military Standard

QPL - Qualified Products List

RFI - Radio Frequency Interference

SESD - Systems Engineering and Standardization Department

*6.5 Subject term (key word) listing.

Connector Accessory
Cable Sealing
Environmental
Nonenvironmental
Strain Relief

*6.6 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 the applicable Qualified Products List (QPL), 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 for the products delineated in this specification. The activity responsible for the QPL is the Naval Air Systems Command, Naval Electronic Systems Command, and AFALD/PTS Wright Patterson AFB, Ohio 45433. Information pertaining to qualification of products may be obtained from the Commanding Officer, Naval Avionics Center, Attention: Code 714, 6000 East 21st Street, Indianapolis, IN 46219-2189. Application for qualification tests shall be made in accordance with provisions governing qualification SD-6 (see 2.2).

6.7 Cross reference of superseded documents. The cross reference of MS and connector specification accessories with the corresponding MIL-C-85049 superseded specification sheet is defined in Table V.

*6.8 Applicable connector accessory for connector specifications. The applicable MIL-C-85049 connector accessory for the corresponding electrical connector specification is delineated in Table VI.

6.9 Connector accessory by similar groups. The applicable connector accessory group for the corresponding electrical connector specification is delineated in Table VII. The MIL-C-85049 connectors accessories are listed into the following groups:

a. Full Body Backshells
b. Saddle Clamps
c. Tie Wrap Backshells
d. Rubber Boots
e. Boot Adapters
f. Shield Terminators
g. Individual Shield Terminator
h. Grommet Compressors
i. Potting Boots
j. MIL-C-5015 Solder Type, MS310X Connectors
k. MIL-C-22992 Connectors, Classes C, J and R
l. Split Backshells
m. Threaded Adapters
n. Copper Body Backshells
o. Rectangular Backshells

Tables VI and VII are defined as an application guide only; for detailed information refer to the MIL-C-85049 specification sheet.

*6.10 Changes from previous issue. The margins of this revision are marked with an asterisk 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 or the last previous amendment.

TABLE V. Cross reference of superseded documents.

Superseded Document	Superseded By	Superseded Document	Superseded By
MS3057 type A	MIL-C-85049/41	MS27485	MIL-C-85049/58
MS3057 type B	MIL-C-85049/1	MS27486	MIL-C-85049/75
MS3057 type C	MIL-C-85049/2	MS27487-1	MIL-C-85049/33-1
MS3057 type D	MIL-C-85049/42	MS27487-2	MIL-C-85049/32-1
MS3152	MIL-C-85049/53	MS27489	MIL-C-85049/32-2
MS3153	MIL-C-85049/54	MS27506-2	MIL-C-85049/49-2
MS3154	MIL-C-85049/55	MS27507	MIL-C-85049/47
MS3158	MIL-C-85049/60-1	MS27663-1	MIL-C-85049/45
MS3161	MIL-C-85049/26-2	MS27663-2	MIL-C-85049/46
MS3184	MIL-C-85049/34	MS27668 type R	MIL-C-85049/56
MS3188 type A	MIL-C-85049/8	MS27669	MIL-C-85049/57
MS3188 type B	MIL-C-85049/9	MS27670	MIL-C-85049/63
MS3188 type C	MIL-C-85049/24	MS90568	MIL-C-85049/59
MS3189 type A	MIL-C-85049/6	MS90569	MIL-C-85049/4-3
MS3189 type B	MIL-C-85049/7	MS90570	MIL-C-85049/5-3
MS3189 type C	MIL-C-85049/23	MS90571	MIL-C-85049/3-3
MS3415	MIL-C-85049/43	MIL-C-24308/19	MIL-C-85049/50
MS3416 style E	MIL-C-85049/31	MIL-C-24308/20	MIL-C-85049/48-1
MS3416 style G	MIL-C-85049/60-2	MIL-C-24308/21	MIL-C-85049/48-2
MS3417	MIL-C-85049/52-1	MIL-C-24308/22	MIL-C-85049/48-3
MS3418	MIL-C-85049/51-1	MIL-C-38999/1	MIL-C-85049/27
MS3419	MIL-C-85049/26-1	MIL-C-38999/2	MIL-C-85049/62
MS3437 type A	MIL-C-85049/10	MIL-C-38999/3	MIL-C-85049/33-2
MS3437 type B	MIL-C-85049/11	MIL-C-38999/4	MIL-C-85049/30
MS3437 type C	MIL-C-85049/25	MIL-C-38999/5	MIL-C-85049/17
MS17340 style 1	MIL-C-85049/3-1	MIL-C-38999/6	MIL-C-85049/29
MS17340 style 2	MIL-C-85049/3-2	MIL-C-38999/7	MIL-C-85049/36
MS17341 style 1	MIL-C-85049/5-1	MIL-C-38999/8	MIL-C-85049/37
MS17341 style 2	MIL-C-85049/5-2	MIL-C-83723/15 type N	MIL-C-85049/31
MS17342 style 1	MIL-C-85049/4-1	MIL-C-83723/15 type A	MIL-C-85049/51-1
MS17342 style 2	MIL-C-85049/4-2	MIL-C-83723/15 type S	MIL-C-85049/52-1
MS27332	MIL-C-85049/61	MIL-C-83723M	MIL-C-85049/60-2
MS27333	MIL-C-85049/74	MIL-C-83733/15	MIL-C-85049/28
MS27342-1	MIL-C-85049/35	MIL-C-83733/16	MIL-C-85049/44
MS27342-2	MIL-C-85049/49-1		

TABLE VI. Applicable connector accessory for connector specifications.

Applicable Connector Type	M85049 Specification Sheet	Category	Configuration	Self-locking Coupling Availability	Non-self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
1. MIL-C-5015 Solder Type, MS310X Connectors	1	1C	Straight	N/A	N/A	X				
	2	1C	Straight	N/A	N/A	X				
	41	4C	Straight	N/A	N/A			X		
	42	4A	Straight	N/A	N/A			X		
2. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3, and MIL-C-83723 Series III	6	1A	45°		X	X	X	X	X	
	7	1A	45°		X	X	X	X		
	8	1A	90°		X	X	X	X	X	
	9	1A	90°		X	X	X	X		
	10	1A	Straight		X	X	X	X	X	
	11	1A	Straight		X	X	X	X		
	23	3A	45°		X			X	X	
	24	3A	90°		X			X	X	
	25	3A	Straight		X			X	X	
	26-1	3A	Straight		X				X	
	26-2	3A	Straight		X				X	
	26-3	3A	Straight		X				X	
	31	3B	Straight	1/	X					
	43	4B	45°		X			X		
	51	4B	90°	1/	X			X		
	52	4B	Straight	1/	X			X		
	53 2/	4C	Straight		X			X		
	54 2/	4C	45°		X			X		
	55 2/	4C	90°	1/	X			X		
	60-1	5	Straight		X					Shrink Boot Adapter
	60-2	5	Straight		X					Shrink Boot Adapter
	66	4C	Straight		X			X		
	67	4C	90°		X			X		
3. MIL-C-22992 Connectors, Classes C, J and R	3	1A	Straight	N/A	N/A	X	X			
	4	1A	Straight	N/A	N/A	X	X			
	5	1A	Straight	N/A	N/A	X	X			
	59	5			X					Shrink Boot Adapter
4 MIL-C-24308 Connectors	48	4C	Straight	N/A	N/A			X		
	50	4C	90°	N/A	N/A			X		
5. MIL-C-26482 Series I, Jam Nut Receptacle Connector	34	3C			X					Threaded Adapter

TABLE VI. Applicable connector accessory for connector specifications (continued)

Applicable Connector Type	M85049 Specification Sheet	Category	Configuration	Self-locking Coupling Availability	Non-self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
6 MIL-C-27599 Connectors	45 3/	4C	Straight	N/A	N/A			X		Nonmetallic
	46 3/	4C	90°	N/A	N/A			X		Nonmetallic
	61	5		N/A	N/A					Ring, Potting Boot
	74	7		N/A	N/A					Potting Boot
7 MIL-C-38999 Series I and II Connectors	17	2B	Straight		X		X		X	
	27	3B	Straight	X	X					
	29	3B	Straight		X			X		
	30	3B	Straight		X					Individual Shielded Wire Termination
	32-1	3C	90°		X				X	
	32-2	3C	90°		X				X	
	33-1	3C	Straight		X				X	
	33-2	3C	Straight		X				X	
	33-3	3C	Straight		X				X	
	35 4/									
	36	3B	Straight		X				X	
	37	3B	90°		X				X	Split
	45 3/	4C	Straight	N/A	N/A			X		Nonmetallic
	46 3/	4C	90°	N/A	N/A					
	47	4C	90°	X	X			X		
	49	4C	Straight	X	X			X		
	56	4C	Straight		X			X		
	57	4C	45°	X	X			X		
	58	5			X					Ring, Potting Boot
	62	5		N/A	N/A					Adapter Shrink Boot
	63	4C	90°	X	X			X		
	64	4C	Straight		X			X		Split
	65	4C	90°		X			X		Split
	75	7		N/A	N/A					Potting Boot
8. MIL-C-38999 Series III and IV	14	3B	Straight	X				X		
	15	4C	45°	X				X		
	16	4C	90°	X				X		
	18	2B	Straight		X		X	X	X	
	19	3B	Straight		X			X	X	
	20	3B	Straight		X				X	
	21	3B	Straight		X			X		
	38	4B	Straight	1/	X			X		
	39	4B	90°	1/	X			X		
	69	5								Adapter Shrink Boot
9 MIL-C-83733 Connectors	28	3B	Straight						X	
	44	4C	Straight					X		

1/ - Self-locking coupling is available as an Air Force 00 slash sheet.
- Inactive for New Design or Modification of Existing Equipment.
- Inactive for Air Force and Navy New Design Equipment or Modification of Existing Equipment.
- Cancelled.
N/A - Not Applicable.

TABLE VII. Applicable connector accessory group for connector specifications.

1. FULL BODY BACKSHELLS

A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
10	1A	Straight		X	X	X	X	X	
11	1A	Straight		X	X	X	X		
25	3A	Straight		X			X	X	
6	1A	45°		X	X	X	X	X	
7	1A	45°		X	X	X	X		
23	3A	45°		X			X	X	
8	1A	90°		X	X	X	X	X	
9	1A	90°		X	X	X	X		
24	3A	90°		X			X	X	

B. MIL-C-38999 Series I and II Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
17	2B	Straight		X		X		X	
29	3B	Straight		X			X		
36	3B	Straight		X				X	
37	3B	90°		X				X	Split

C. MIL-C-38999 Series III and IV Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
18	2B	Straight		X		X	X	X	
19	3B	Straight		X			X	X	
21	3B	Straight		X			X		

2 SADDLE CLAMPS

A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
52	4B	Straight	1/	X			X		
43	4B	45°		X			X		
51	4B	90°	1/	X			X		

TABLE VII. Applicable connector accessory group for connector specifications (continued)

B. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
49 47	4C 4C	Straight 90°	X X	X X			X X		
C. MIL-C-38999 Series III and IV Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
38 39	4B 4B	Straight 90°	1/ 1/	X X			X X		
3. TIE WRAP BACKSHELLS									
A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
53* 54* 55*	4C 4C 4C	Straight 45° 90°	1/	X X X			X X X		
B. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
56 57 63 45** 46**	4C 4C 4C 4C 4C	Straight 45° 90° Straight 90°	 X X N/A N/A	X X X N/A N/A			X X X X X		 Nonmetallic Nonmetallic

TABLE VII. Applicable connector accessory group for connector specifications (continued)

C. MIL-C-38999 Series III and IV Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
15	4C	45°	X				X		Ground Lug Availability
16	4C	90°	X				X		Ground Lug Availability

D. MIL-C-27599 Series I Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
45**	4C	Straight	N/A	N/A			X		Nonmetallic
45**	4C	90°	N/A	N/A			X		Nonmetallic

4. RUBBER BOOTS

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
68 2/									

5. BOOT ADAPTERS

A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3, and MIL-C-83723 Series III

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
60-1	5	Straight		X					Shrink Boot Adapter
60-2	5	Straight		X					Shrink Boot Adapter

B. MIL-C-38999 Series I and II Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
62	5	Straight		X					Shrink Boot Adapter

TABLE VII. Applicable connector accessory group for connector specifications (continued)

6. SHIELD TERMINATORS

A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
26-1	3A	Straight		X				X	
26-2	3A	Straight		X				X	
26-3	3A	Straight		X				X	

B. MIL-C-38999 Series I and II Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
33-2	3C	Straight		X				X	
33-3	3C	Straight		X				X	

C. MIL-C-38999 Series III and IV Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
20	3B	Straight		X				X	

TABLE VII. Applicable connector accessory group for connector specifications (continued)

7. INDIVIDUAL SHIELD TERMINATOR									
A. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
30	38	Straight		X					Individual shield wire termination

8. GROMMET COMPRESSORS									
A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
31	38	Straight	1/	X					
B. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
27	38	Straight	X	X					
C. MIL-C-38999 Series III and IV Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
14	38	Straight	X						Ground Lug Availability

TABLE VII. Applicable connector accessory group for connector specifications (continued)

9 POTTING BOOT, ACCESSORY

A. MIL-C-38999 Series I and II Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
58	5			X					Ring, Potting Boot
75	7		N/A	N/A					Potting Boot

B. MIL-C-27599 Connectors

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
61	5		N/A	N/A					Ring, Potting Boot
74	7		N/A	N/A					Potting Boot

10. MIL-C-5015 SOLDER TYPE, MS310X CONNECTORS

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
1	4C	Straight	N/A	N/A	X				
2	4C	Straight	N/A	N/A	X				
41	4C	Straight	N/A	N/A			X		
42	4A	Straight	N/A	N/A			X		

11. MIL-C-22992 CONNECTORS, CLASSES C, J AND R

M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
3	1A	Straight	N/A	N/A	X	X			
4	1A	Straight	N/A	N/A	X	X			
5	1A	Straight	N/A	N/A	X	X			

TABLE VII. Applicable connector accessory group for connector specifications (continued)

12. SPLIT BACKSHELLS									
A. MIL-C-5015 Crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
66 67	4C 4C	Straight 90°		X X			X X		
B. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
64 65	4C 4C	Straight 90°		X X			X X		Split Split
13. THREADED ADAPTERS									
A. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
35***									
B. MIL-C-26482 Series I, Jam Nut Receptacle Connector									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
34	3C			X					Threaded Adapter

TABLE VII. Applicable connector accessory group for connector specifications (continued)

14 COPPER BODY BACKSHELLS									
A. MIL-C-38999 Series I and II Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
32-1 32-2 33-1	3C 3C 3C	90° 90° Straight		X X X				X X X	
15. RECTANGULAR BACKSHELLS									
A MIL-C-24308 Connectors									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
48 50	4C 4C	Straight 90°	N/A N/A	N/A N/A			X X		
B. MIL-C-83733 CONNECTORS									
M85049 Specification Sheet	Category	Configuration	Self-Locking Coupling Availability	Non-Self-Locking Coupling Availability	Cable Sealing	Environmental	Strain Relief	Shield Termination	Other
28 44	3B 4C	Straight Straight					X	X	

1/ - Self-locking is available as an Air Force 00 slash sheet.
2/ - Superseded by MS3109(AS), MS3117(AS) and MIL-C-83723/16 Boots, Heat-Shrinkable.
* - Inactive for New Design or Modification of Existing Equipment.
** - Inactive for Air Force and Navy New Design Equipment or Modification of Existing Equipment.
*** - Cancelled.
N/A - Not Applicable.

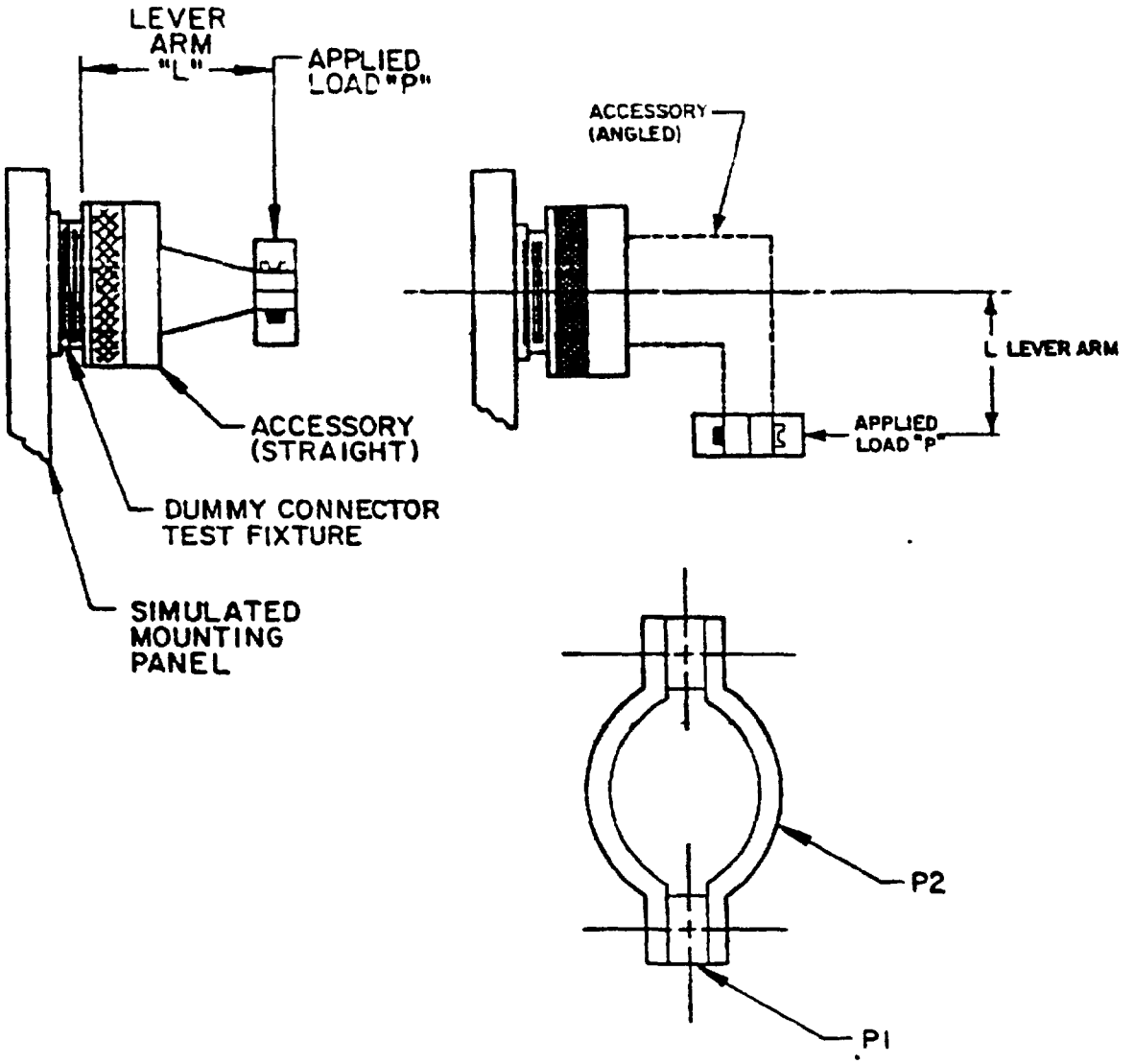
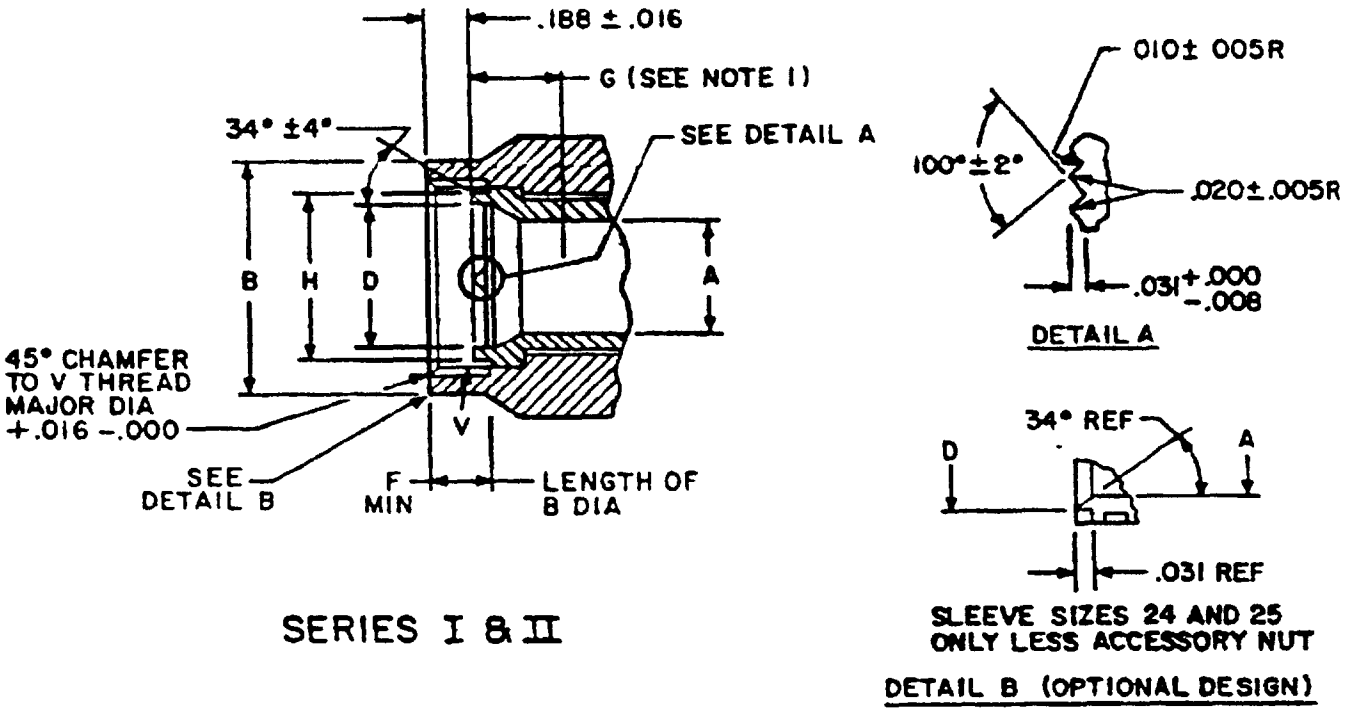


FIGURE 1. External bending moment test setup.



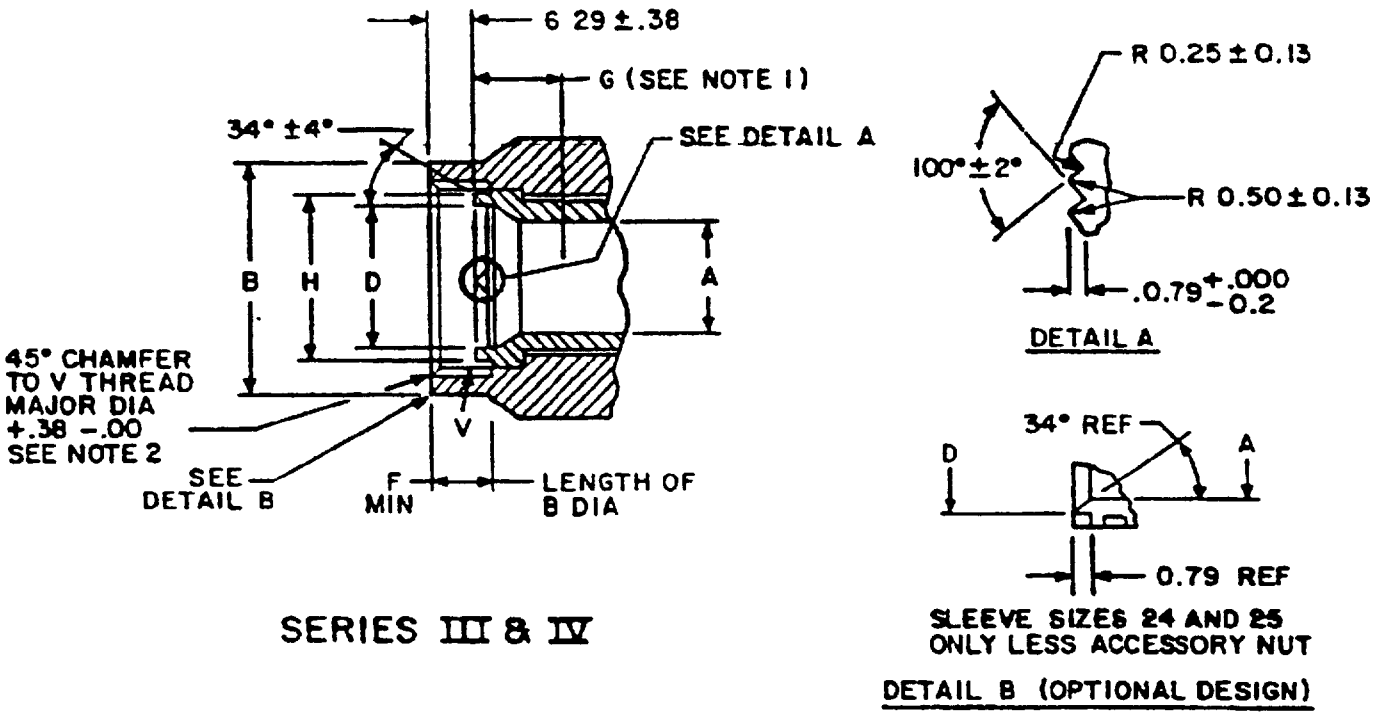
NOTES:

1. Minimum penetration of "A" diameter from front of serrations.
2. Metric equivalents are based upon 1.00 inch - 25.4 mm and shall be in accordance with ASTM E380, paragraph 4.5, method A, and ASTM E29, rounding-off method.
3. Dimensions are in inches.

FIGURE 2. Connector accessory intermateability data for MIL-C-38999 connectors Series I and II.

TABLE VIII. Connector accessory intermateability data for MIL-C-38999 connectors Series I and II.

M85049 Dash No.	MIL-C-38999 Shell Size		A Dia	B Dia	D Dia	F Min	G Min	h Dia Ref	N No. of Teeth	V Thread UNEF-2B (Plated)
	Series I	Series II								
8	9	8	.269 ±.005	.567 +.000 -.062	.321 +.023 -.022	.084	.117	.386	12	.4375-28
10	11	10	.402 ±.010	.704 +.000 -.062	.449 +.023 -.022	.084	.117	.503	16	.5625-24
12	13	12	.516 ±.010	.829 +.000 -.062	.565 +.023 -.022	.084	.117	.628	20	.6875-24
14	15	14	.641 ±.010	.954 +.000 -.062	.688 +.023 -.022	.084	.117	.742	24	.8125-20
16	17	16	.766 ±.010	1.079 +.000 -.062	.813 +.023 -.022	.084	.117	.866	28	.9375-20
18	19	18	.863 ±.019	1.203 +.000 -.062	.919 +.023 -.022	.172	.117	.984	32	1.0625-18
20	21	20	.988 ±.018	1.329 +.000 -.062	1.044 +.023 -.022	.172	.117	1.109	36	1.1875-18
22	23	22	1.113 ±.019	1.454 +.000 -.062	1.169 +.023 -.022	.172	.117	1.234	40	1.3125-18
24	25	24	1.238 ±.019	1.579 +.000 -.062	1.290 +.019 -.018	.172	.067	1.359	44	1.4375-18



NOTES:

1. Minimum penetration of "A" diameter from front of serrations.
2. Dimensions are millimeters.

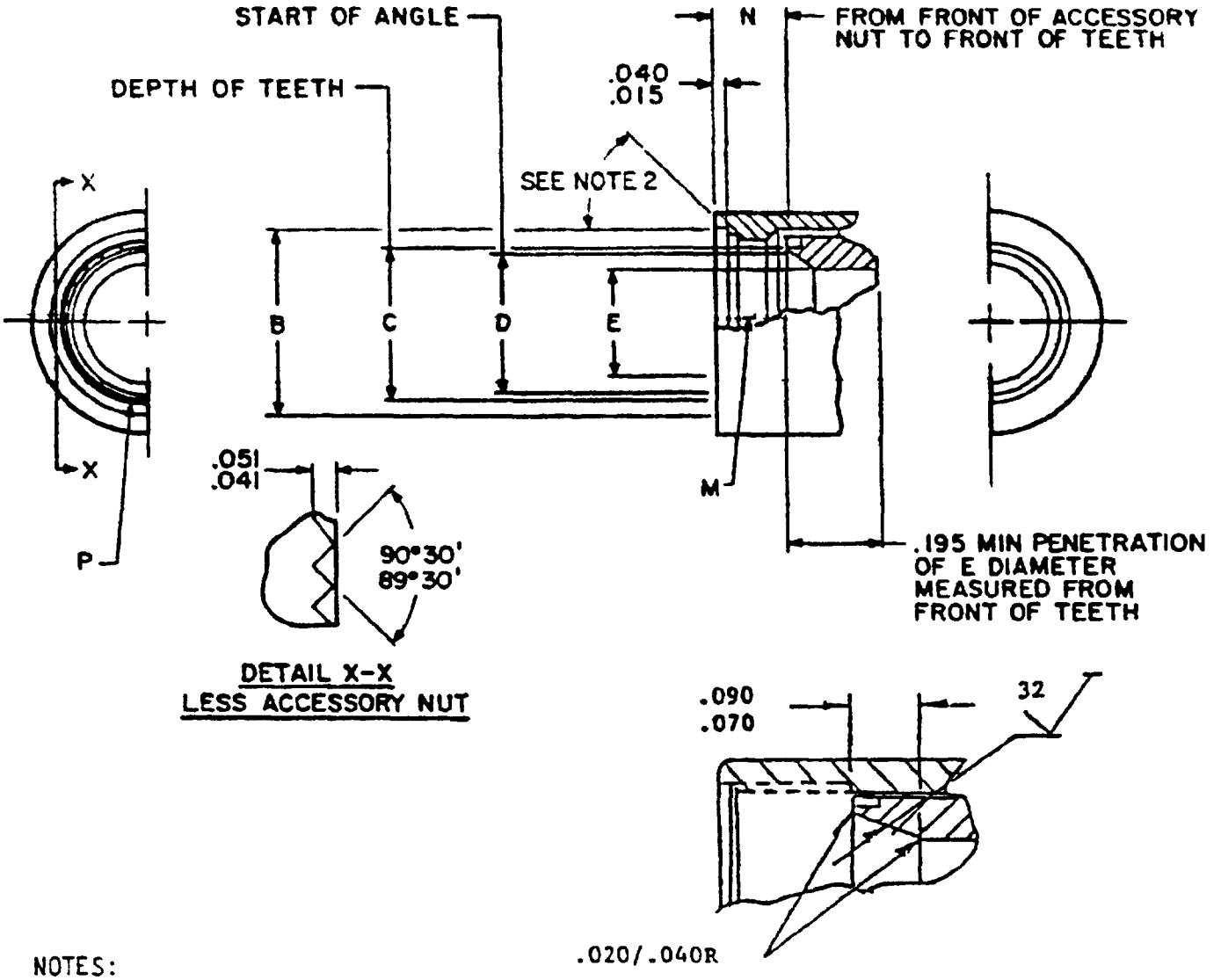
FIGURE 3. Connector accessory intermateability data for MIL-C-38999 connectors Series III and IV.

TABLE IX. Connector accessory intermateability data for MIL-C-38999 connectors Series III and IV.

M38999 Shell Size	MIL-C-38999 Connector Series	A Dia	B Dia	D Dia	F Min	G Min	H Dia Ref	N No. of Teeth	V Thread
9	III IV	6.7 Min	15.24 Max	7.5 Min	2.1	2.9	10.57	12	M12x1.0-6H
11	III IV	9.9 Min	18.21 Max	10.8 Min	2.1	2.9	13.56	16	M15x1.0-6H
13	III IV	12.8 Min	21.18 Max	13.8 Min	2.1	2.9	16.58	20	M18x1.0-6H
15	III IV	16.0 Min	25.14 Max	16.9 Min	2.1	2.9	20.57	24	M22x1.0-6H
17	III IV	19.2 Min	28.12 Max	20.1 Min	2.1	2.9	23.57	28	M25x1.0-6H
19	III IV	21.4 Min	31.09 Max	22.8 Min	2.1	2.9	26.57	32	M28x1.0-6H
21	III IV	24.6 Min	34.06 Max	26.0 Min	2.1	2.9	29.57	36	M31x1.0-6H
23	III IV	27.7 Min	36.90 Max	29.1 Min	2.1	2.9	32.56	40	M34x1.0-6H
25	III IV	30.9 Min	39.88 Max	32.3 Min	2.1	1.7	35.56	44	M37x1.0-6H

TABLE IX. Connector accessory metric internal thread dimensions for MIL-C-38999 connectors Series III and IV.

M38999 Shell Size	Designation (Thread Size)	Minor Diameter		Pitch Diameter		Major Diameter	
		Min	Max	Min	Max	Min	Max
9	M12x1.0-6H 0.100R	10.917	11.153	11.350	11.510	12.000	12.304
11	M15x1.0-6H 0.100R	13.917	14.153	14.350	14.510	15.000	15.304
13	M18x1.0-6H 0.100R	16.917	17.153	17.350	17.510	18.000	18.304
15	M22x1.0-6H 0.100R	20.917	21.153	21.350	21.510	22.000	22.304
17	M25x1.0-6H 0.100R	23.917	24.153	24.350	24.520	25.000	25.314
19	M28x1.0-6H 0.100R	26.917	27.153	27.350	27.520	28.000	28.314
21	M31x1.0-6H 0.100R	29.917	30.153	30.350	30.520	31.000	31.314
23	M34x1.0-6H 0.100R	32.917	33.153	33.350	33.520	34.000	34.314
25	M37x1.0-6H 0.100R	35.917	36.153	36.350	36.520	37.000	37.314



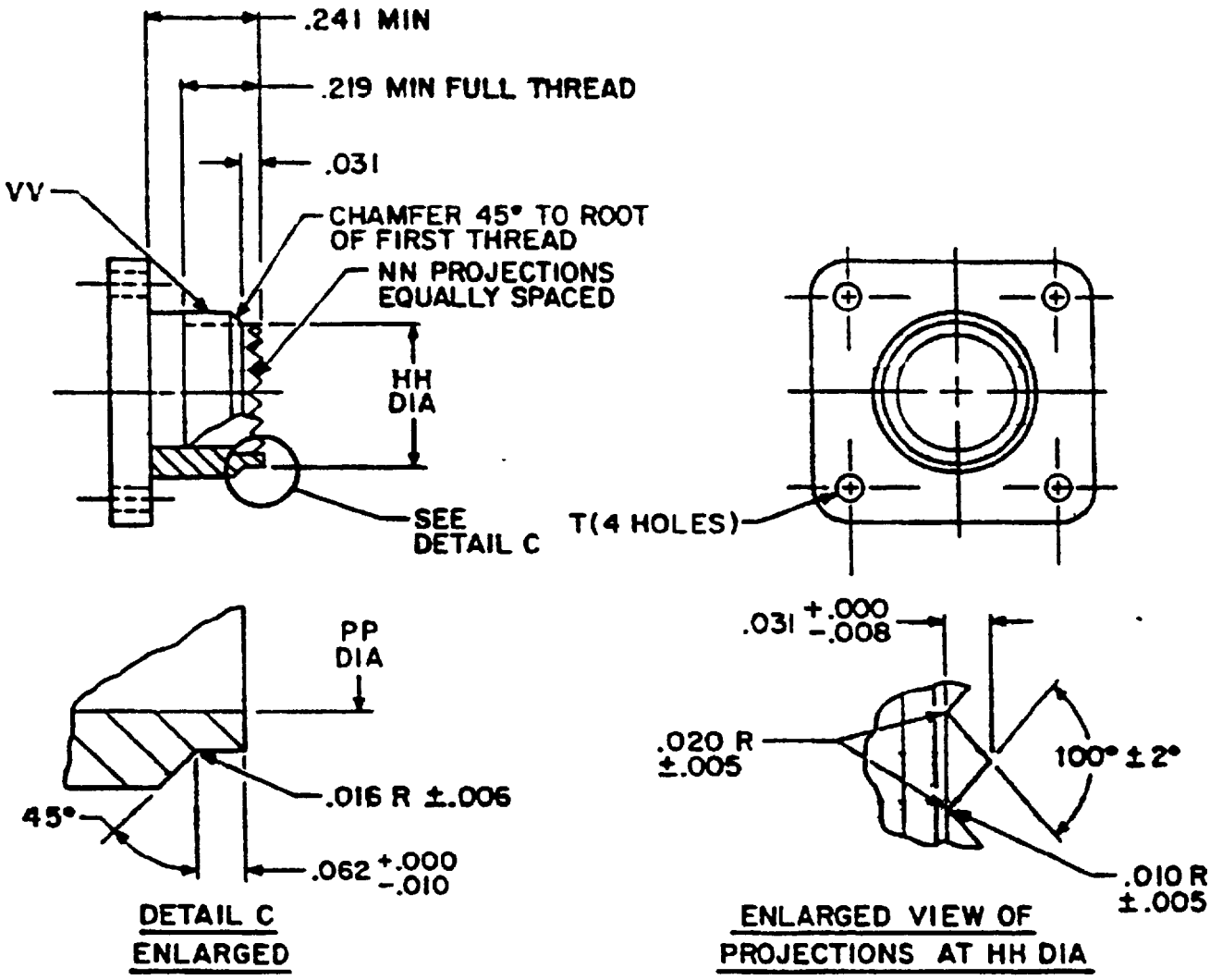
NOTES:

1. The first thread is to be chamfered.
2. Metric equivalents are based upon 1.00 inch = 25.4 mm and shall be in accordance with ASTM E380, paragraph 4.5, method A and ASTM E29, rounding-off method.
3. Dimensions are in inches.
4. This figure supersedes MS3155.

FIGURE 4. Connector accessory intermateability data for MIL-C-5015 crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III.

TABLE X. Connector accessory intermateability data for MIL-C-5015 crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3 and MIL-C-83723 Series III.

For Connector Shell Size			B +.025 -.000 Dia	C +.000 -.015 Dia	D +.015 -.000 Dia	E +.000 -.010 Dia	M R.H. Thread Class 2B	N +.000 -.022	P Number of Teeth
MIL-C-81703 Series 3	MIL-C-26482 Series 2 or MIL-C-83723 Series 1 & 3	MIL-C-5015 Crimp or MIL-C-83723 Series 1 & 3 Crimp							
3	--	--	.562	.431	.370	.270	.5625-24UNEF	.305	15
--	8	8S	.500	.360	.299	.270	.500-20UNF	.305	12
--	10	10S,10SL	.625	.494	.433	.375	.625-24UNEF	.305	15
7	12	12S,12	.750	.610	.549	.511	.750-20UNEF	.305	21
12	14	14S,14	.875	.735	.674	.585	.875-20UNEF	.305	24
19	16	16S,16	1.000	.860	.799	.710	1.000-20UNEF	.305	30
27	18	18	1.062	.916	.869	.789	1.0625-18UNEF	.305	33
37	20	20	1.188	1.041	.994	.914	1.1875-18UNEF	.305	36
--	22	22	1.312	1.166	1.119	1.039	1.3125-18UNEF	.305	39
--	24	24	1.438	1.291	1.244	1.154	1.4375-18UNEF	.305	42
--	--	28	1.750	1.512	1.469	1.389	1.750-18UNS	.467	54
--	--	32	2.000	1.762	1.715	1.635	2.000-18UNS	.467	63
--	--	36	2.250	1.977	1.930	1.850	2.250-16UN	.467	72
--	--	40	2.500	2.192	2.145	2.065	2.500-16UN	.467	81
--	--	44	2.750	2.447	2.400	2.320	2.750-16UN	.467	87
--	--	48	3.000	2.697	2.650	2.570	3.000-16UN	.467	96
61	--	--	1.500	1.354	1.307	1.194	1.500-18UNEF	.305	45



NOTES:

1. Thread may have modified major diameters.
2. Metric equivalents are based upon 1.00 inch = 25.4 mm and shall be in accordance with ASTM E380, paragraph 4.5, method A and ASTM E29, rounding-off method.
3. Dimensions are in inches.

FIGURE 5. Dummy connector test fixture dimensions for MIL-C-38999 Series I and II.

TABLE XI. Dummy connector test fixture dimensions for MIL-C-38999 Series I and II.

M85049 Dash No.	MIL-C-38999 Shell Size		HH Dia +.001 -.005	NN	PP Dia ±.003	T +.010 -.005	VV Thread UNEF-2A (Plated)
	Series I	Series II					
08	9	8	.386	12	.344	.125	.4375-28
10	11	10	.503	16	.472		.5625-24
12	13	12	.628	20	.586		.6875-24
14	15	14	.742	24	.711		.8125-20
16	17	16	.866	28	.836		.9375-20
18	19	18	.984	32	.942		1.0625-18
20	21	20	1.109	36	1.067		1.1875-18
22	23	22	1.234	40	1.192	.1875	1.3125-18
24	25	24	1.359	44	1.360		1.4375-18

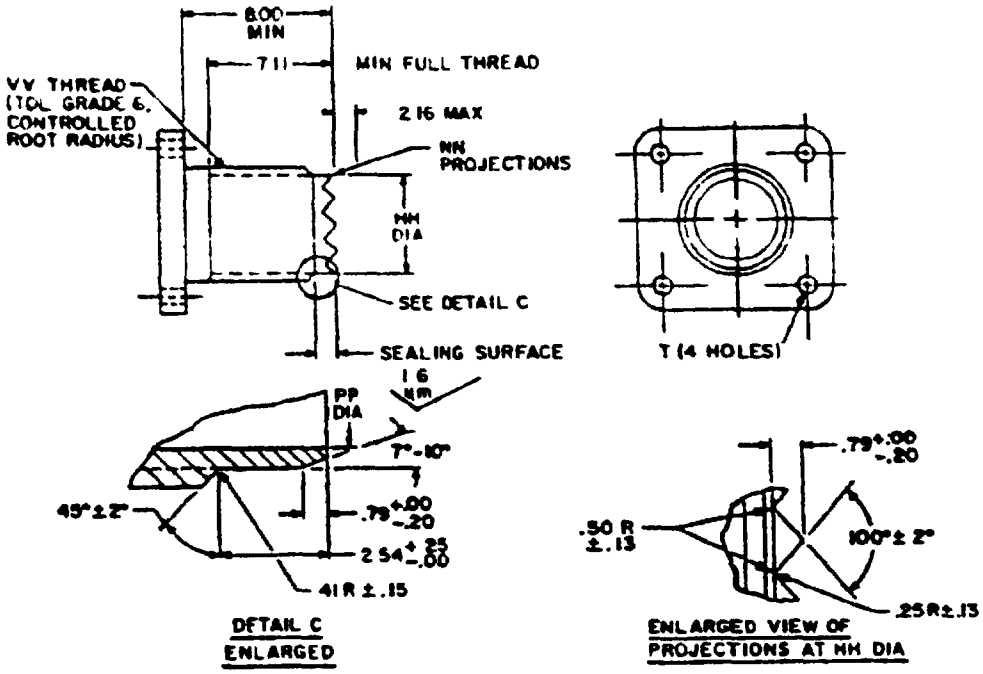


FIGURE 6. Dummy connector test fixture dimensions for MIL-C-38999 (Series III and IV).

TABLE XII. Dummy connector test fixture dimensions for MIL-C-38999 (Series III and IV).

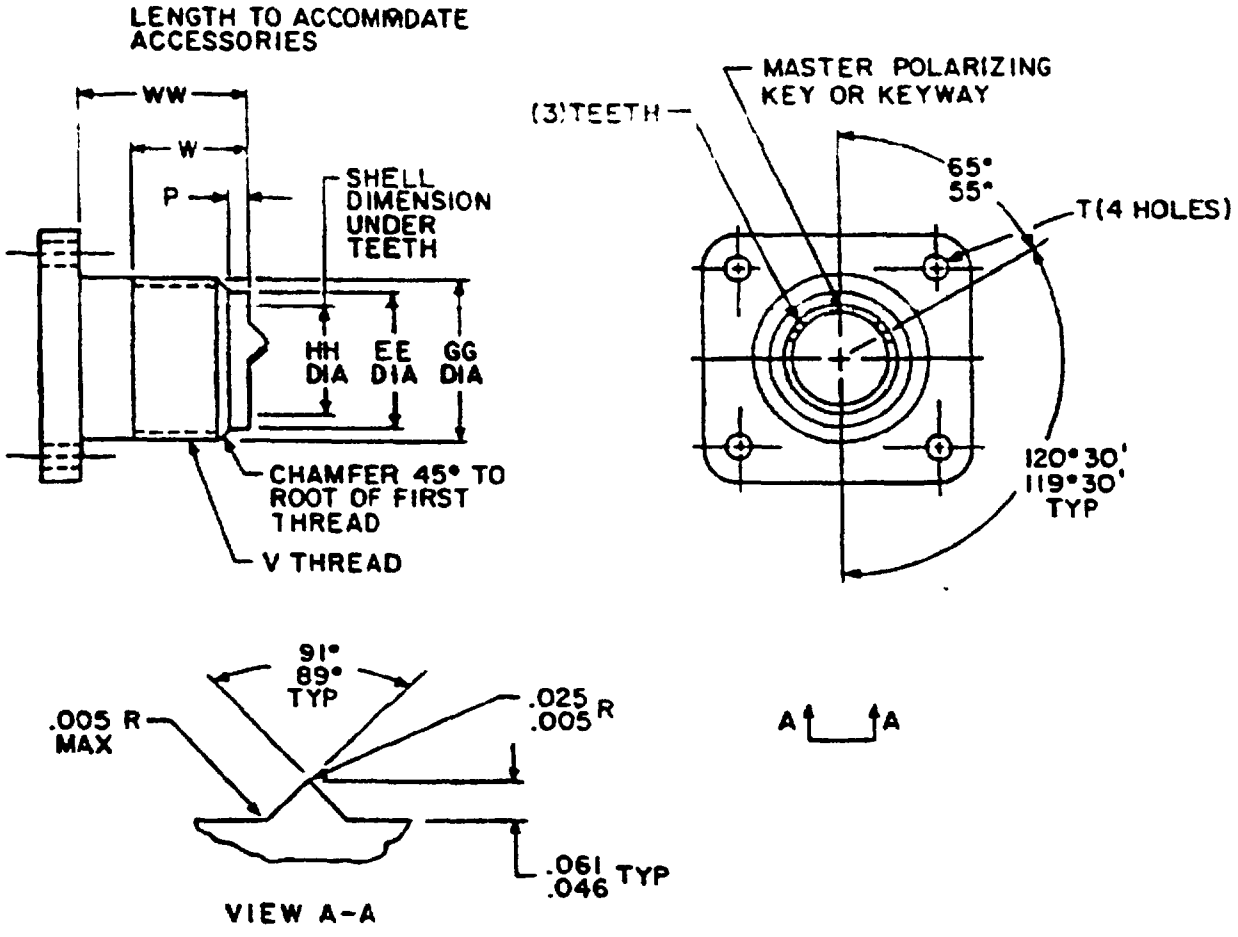
M38999 Shell Size	HH +.00 -.15	NN	PP Max	VV Thread	T +.00 -.15
09	10.57	12	8.80	M12x1.0-6g 0.100R	3.00
11	13.56	16	12.07	M15x1.0-6g 0.100R	3.00
13	16.58	20	14.96	M18x1.0-6g 0.100R	3.00
15	20.57	24	18.14	M22x1.0-6g 0.100R	3.00
17	23.57	28	21.31	M25x1.0-6g 0.100R	4.00
19	26.57	32	24.00	M28x1.0-6g 0.100R	4.00
21	29.57	36	27.18	M31x1.0-6g 0.100R	4.00
23	32.56	40	30.35	M34x1.0-6g 0.100R	4.00
25	35.56	44	33.53	M37x1.0-6g 0.100R	4.00

NOTES:

1. Dimensions are in millimeters.
2. Threads are to be inspected with a 6h go-gage and a 6g no-go-gage.

TABLE XIII. Dummy connector test fixture dimensions for MIL-C-38999 (Series III and IV).

Designation (Thread Size)	Major Diameter		Pitch Diameter		Minor Diameter	
	Max	Min	Max	Min	Max	Min
M12X1.0-6g 0.100R	11.974	11.794	11.324	11.206	10.747	10.557
M15X1.0-6g 0.100R	14.974	14.794	14.324	14.206	13.747	13.557
M17X1.0-6g 0.100R	16.974	16.794	16.324	16.206	15.747	15.557
M18X1.0-6g 0.100R	17.974	17.794	17.324	17.206	16.747	16.557
M20X1.0-6g 0.100R	19.974	19.794	19.324	19.206	18.747	18.557
M22X1.0-6g 0.100R	21.974	21.794	21.324	21.206	20.747	20.557
M25X1.0-6g 0.100R	24.974	24.794	24.324	24.199	23.747	23.550
M28X1.0-6g 0.100R	27.974	27.794	27.324	27.199	26.747	26.550
M31X1.0-6g 0.100R	30.974	30.794	30.324	30.199	29.747	29.550
M32X1.0-6g 0.100R	31.974	31.794	31.324	31.199	30.747	30.550
M34X1.0-6g 0.100R	33.974	33.794	33.324	33.199	32.747	32.550
M35X1.0-6g 0.100R	34.974	34.794	34.324	34.199	33.747	33.550
M37X1.0-6g 0.100R	36.974	36.794	36.324	36.199	35.747	35.550
M38X1.0-6g 0.100R	37.974	37.794	37.324	37.199	36.747	36.550
M41X1.0-6g 0.100R	40.974	40.794	40.324	40.199	39.747	39.550
M44X1.0-6g 0.100R	43.974	43.794	43.324	43.199	42.747	42.550
M47X1.0-6g 0.100R	46.974	46.794	46.324	46.199	45.747	45.550



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are based upon 1.00 inch = 25.4 mm and shall be in accordance with ASTM E380, paragraph 4.5, method A and ASTM E29, rounding-off method.

FIGURE 7. Dummy connector test fixture dimensions for MIL-C-5015 crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3, and MIL-C-83723 Series III.

TABLE XIV. Dummy connector test fixture dimensions for MIL-C-5015 crimp, MIL-C-26482 Series 2, MIL-C-81703 Series 3, and MIL-C-83723 Series III (continued).

Dash No.	For Connector Shell Size			EE		GG +.000 -.010	HH ±.005	P ±.005	T +.010 -.005	Y Thread Class 2A	W Min Perf Thread	WW Min
	MIL-C-81703 Series 3	MIL-C-26482 Series 2 or MIL-C-837223 Series 1 & 3	MIL-C-5015 Crimp or MIL-C-83723 Series 1 & 3 Crimp	Max	Min							
03	3	--	--	.441	.434	.509	.351			.5625-24 UNEF		
08	--	8	8S	.426	.419	.500	.369			.500-20 UNF		
10	--	10	10S,10SL	.562	.555	.625	.502			.625-24 UNEF		
12	7	12	12S,12	.679	.672	.750	.618			.750-20 UNEF		
14	12	14	14S,14	.804	.797	.875	.743	.065	.125	.875-20 UNEF	.290	.310
16	19	16	16S,16	.929	.922	1.000	.868			1.000-20 UNEF		
18	27	18	18	.984	.977	1.062	.924			1.0625-18 UNEF		
20	37	20	20	1.109	1.102	1.187	1.049			1.1875-18 UNEF		
22	--	22	22	1.234	1.227	1.312	1.174			1.3125-18 UNEF		
24	--	24	24	1.359	1.352	1.437	1.299			1.4375-18 UNEF		
28	--	--	28	1.613	1.603	1.750	1.520			1.750-18 UNS		
32	--	--	32	1.863	1.853	2.000	1.770			2.000-18 UNS		
36	--	--	36	2.113	2.103	2.250	1.985	.	.1875	2.250-16 UN		
40	--	--	40	2.363	2.353	2.500	2.200	.095		2.500-16 UN	.467	.487
44	--	--	44	2.613	2.603	2.750	2.455			2.750-16 UN		
48	--	--	48	2.858	2.848	3.000	2.705			3.000-16 UN		
61	61	--	--	1.361	1.351	1.427	1.280			1.500-18 UNEF		

INCH	mm	INCH	mm	INCH	mm
0.001	0.03	0.321	8.15	0.679	17.25
0.003	0.08	0.344	8.74	0.6875	17.46
0.005	0.13	0.351	8.92	0.688	17.48
0.006	0.15	0.359	9.12	0.704	17.88
0.008	0.20	0.360	9.14	0.710	18.03
0.010	0.25	0.368	9.35	0.711	18.06
0.015	0.38	0.370	9.40	0.735	18.67
0.016	0.41	0.375	9.53	0.743	18.87
0.018	0.46	0.380	9.65	0.750	19.05
0.019	0.48	0.387	9.83	0.751	19.08
0.020	0.51	0.402	10.21	0.754	19.15
0.022	0.56	0.410	10.41	0.766	19.46
0.023	0.58	0.419	10.64	0.775	19.69
0.025	0.64	0.426	10.82	0.789	20.04
0.031	0.79	0.431	10.95	0.790	20.07
0.040	1.02	0.433	11.00	0.797	20.24
0.041	1.04	0.434	11.02	0.799	20.29
0.046	1.17	0.4375	11.11	0.804	20.42
0.051	1.30	0.441	11.20	0.8125	20.64
0.061	1.55	0.449	11.40	0.813	20.65
0.062	1.57	0.467	11.86	0.829	21.06
0.065	1.65	0.472	11.99	0.836	21.23
0.067	1.70	0.484	12.29	0.860	21.84
0.070	1.78	0.487	12.37	0.863	21.92
0.078	1.98	0.494	12.55	0.868	22.05
0.084	2.13	0.500	12.70	0.869	22.07
0.090	2.29	0.501	12.73	0.875	22.22
0.094	2.39	0.502	12.75	0.879	22.33
0.095	2.41	0.509	12.93	0.900	22.86
0.100	2.54	0.511	12.98	0.914	23.22
0.117	2.97	0.515	13.08	0.916	23.27
0.125	3.18	0.516	13.11	0.919	23.34
0.130	3.30	0.525	13.33	0.922	23.42
0.150	3.81	0.549	13.94	0.924	23.47
0.156	3.96	0.555	14.10	0.925	23.50
0.172	4.37	0.562	14.27	0.929	23.60
0.1875	4.76	0.5625	14.29	0.9375	23.81
0.188	4.78	0.565	14.35	0.942	23.93
0.195	4.95	0.567	14.40	0.954	24.23
0.200	5.08	0.585	14.86	0.977	24.82
0.203	5.16	0.586	14.88	0.984	24.99
0.219	5.56	0.610	15.49	0.985	25.02
0.241	6.12	0.618	15.70	0.988	25.10
0.250	6.35	0.625	15.88	0.994	25.25
0.269	6.83	0.628	15.95	1.000	25.40
0.270	6.86	0.634	16.10	1.009	25.63
0.290	7.37	0.641	16.28	1.025	26.03
0.299	7.59	0.672	17.07	1.039	26.39
0.305	7.75	0.674	17.12	1.041	26.44
0.310	7.87	0.675	17.15	1.044	26.52

INCH	mm	INCH	mm	INCH	mm
1.049	26.64	1.438	36.53	2.455	62.36
1.050	26.67	1.454	36.93	2.500	63.50
1.062	26.97	1.469	37.31	2.540	64.52
1.0625	26.99	1.500	38.10	2.563	65.10
1.067	27.10	1.501	38.13	2.570	65.28
1.079	27.41	1.512	38.40	2.603	66.12
1.102	27.99	1.520	38.61	2.613	66.37
1.109	28.17	1.562	39.67	2.625	66.68
1.110	28.19	1.563	39.70	2.650	67.31
1.113	28.27	1.579	40.11	2.697	68.50
1.125	28.58	1.588	40.34	2.705	68.71
1.150	29.21	1.600	40.64	2.750	69.85
1.154	29.31	1.603	40.72	2.813	71.45
1.166	29.62	1.613	40.97	2.848	72.34
1.169	29.69	1.635	41.53	2.858	72.59
1.174	29.82	1.650	41.91	2.875	73.02
1.187	30.15	1.687	42.85	2.900	73.66
1.1875	30.16	1.700	43.18	3.000	76.20
1.188	30.18	1.715	43.56	3.063	77.80
1.192	30.28	1.750	44.45	3.200	81.28
1.194	30.33	1.762	44.75	3.313	84.15
1.199	30.45	1.770	44.96	3.563	90.50
1.203	30.56	1.812	46.02	4.000	101.60
1.227	31.17	1.813	46.05	5.200	132.08
1.234	31.34	1.850	46.99	6.290	159.77
1.235	31.37	1.853	47.07	6.700	170.18
1.238	31.45	1.863	47.32	7.500	190.50
1.244	31.60	1.875	47.63	8.000	203.20
1.250	31.75	1.930	49.02	8.800	223.52
1.280	32.51	1.963	49.86	9.000	228.60
1.290	32.77	1.977	50.22	9.900	251.46
1.291	32.79	1.985	50.42	10.557	268.15
1.299	32.99	2.000	50.80	10.570	268.48
1.300	33.02	2.065	52.45	10.747	272.97
1.307	33.20	2.100	53.34	10.800	274.32
1.312	33.32	2.103	53.42	10.917	277.29
1.3125	33.34	2.113	53.67	11.153	283.29
1.329	33.76	2.125	53.97	11.206	284.63
1.351	34.32	2.145	54.48	11.324	287.63
1.352	34.34	2.160	54.86	11.350	288.29
1.354	34.39	2.192	55.68	11.510	292.35
1.359	34.52	2.200	55.88	11.794	299.57
1.360	34.54	2.250	57.15	11.974	304.14
1.361	34.57	2.313	58.75	12.000	304.80
1.375	34.93	2.320	58.93	12.070	306.58
1.389	35.28	2.353	59.77	12.304	312.52
1.400	35.56	2.363	60.02	12.800	325.12
1.427	36.25	2.375	60.32	13.557	344.35
1.437	36.50	2.400	60.96	13.560	344.42
1.4375	36.51	2.447	62.15	13.747	349.17

INCH	mm	INCH	mm	INCH	mm
13.800	350.52	20.917	531.29	29.550	750.57
13.917	353.49	21.000	533.40	29.570	751.08
14.000	355.60	21.153	537.29	29.747	755.57
14.153	359.49	21.180	537.97	29.917	759.89
14.206	360.83	21.206	538.63	30.153	765.89
14.324	363.83	21.310	541.27	30.199	767.05
14.350	364.49	21.324	541.63	30.324	770.23
14.510	368.55	21.350	542.29	30.350	770.89
14.794	375.77	21.400	543.56	30.520	775.21
14.960	379.98	21.510	546.35	30.550	775.97
14.974	380.34	21.794	553.57	30.747	780.97
15.000	381.00	21.974	558.14	30.794	782.17
15.240	387.10	22.000	558.80	30.900	784.86
15.304	388.72	22.304	566.52	30.974	786.74
15.557	395.15	22.800	579.12	31.000	787.40
15.747	399.97	23.550	598.17	31.090	789.69
16.000	406.40	23.570	598.68	31.199	792.45
16.206	411.63	23.747	603.17	31.314	795.38
16.324	414.63	23.917	607.49	31.324	795.63
16.557	420.55	24,000	609.60	31.794	807.57
16.580	421.13	24.153	613.49	31.974	812.14
16.747	425.37	24.199	614.65	32.300	820.42
16.794	426.57	24.324	617.83	32.550	826.77
16.900	429.26	24.350	618.49	32.560	827.02
16.917	429.69	24.520	622.81	32.747	831.77
16.974	431.14	24.600	624.84	32.917	836.09
17.000	431.80	24.794	629.77	33.153	842.09
17.153	435.69	24.974	634.34	33.199	843.25
17.206	437.03	25.000	635.00	33.324	846.43
17.324	440.03	25.140	638.56	33.520	851.41
17.350	440.69	25.314	642.98	33.530	851.66
17.510	444.75	26.000	660.40	33.550	852.17
17.794	451.97	26.550	674.37	33.747	857.17
17.974	456.54	26.570	674.88	33.794	858.37
18.000	457.20	26.747	679.37	33.974	862.94
18.140	460.76	26.917	683.69	34.000	863.60
18.210	462.53	27.000	685.80	34.060	865.12
18.304	464.92	27.153	689.69	34.199	868.65
18.557	471.35	27.180	690.37	34.314	871.58
18.747	476.17	27.199	690.85	34.324	871.83
19.200	487.68	27.324	694.03	34.794	883.77
19.206	487.83	27.350	694.69	34.974	888.34
19.324	490.83	27.520	699.01	35.550	902.97
19.794	502.77	27.700	703.58	35.560	903.22
19.974	507.34	27.794	705.97	35.747	907.97
20.000	508.00	27.974	710.54	35.917	912.29
20.100	510.54	28.000	711.20	36.000	914.40
20.557	522.15	28.120	714.25	36.153	918.29
20.570	522.48	28.314	719.18	36.199	919.45
20.747	526.97	29.100	739.14	36.324	922.63

INCH	mm
36.350	923.29
36.520	927.61
36.550	928.37
36.747	933.37
36.794	934.57
36.900	937.26
36.974	939.14
37.000	939.80
37.199	944.85
37.314	947.78
37.324	948.03
37.794	959.97
37.974	964.54

INCH	mm
39.000	990.60
39.550	1004.57
39.747	1009.57
39.880	1012.95
40.000	1016.00
40.199	1021.05
40.324	1024.23
40.794	1036.17
40.974	1040.74
42.000	1066.80
42.550	1080.77
42.747	1085.77

INCH	mm
43.199	1097.25
43.324	1100.43
43.794	1112.37
43.974	1116.94
45.000	1143.00
45.550	1156.97
45.747	1161.97
46.199	1173.45
46.324	1176.63
46.794	1188.57
46.974	1193.14
48.000	1219.20

Custodians:
Army - CR
Navy - AS
Air Force - 85

Review activities:
Army - MI, AR
Navy - EC, SH
Air Force - 11, 99
DLA - ES

Preparing activity:
Navy - AS
(Project No. 5935-3729)

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