DEFENSE LOGISTICS AGENCY
DLA LAND AND MARITIME
POST OFFICE BOX 3990
COLUMBUS, OH 43218-3990

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION 17 August 2012

SUBJECT: Initial Drafts of Commercial Item Descriptions (CIDs) see table below.

CID #	Project #	Title
A-A-XX159	6060-2012-003	Fiber Optic Connector, Hermaphroditic, Multiple Removable Termini
A-A-XX160	6060-2012-005	Removable Termini for Multiple Fiber Optic Connectors
A-A-XX161	6020-2012-001	Cable, Fiber Optic, Pierside Use Only, 12 Breakout Cable Count, Multiple Classes (single mode, multimode and mixed mode)

The initial drafts of the subject CIDs, dated 17 August 2012, can be viewed and downloaded from the DLA Land and Maritime-VA web site:

http://www.landandmaritime.dla.mil/Programs/MilSpec/initialdrafts.aspx

These CIDs provide information on the components and will be utilized in the procurement of these items.

Manufacturers desiring to be listed as a source, which meet the requirements of these CIDs, are requested to complete and submit the appropriate attached Certificates of Compliances along with any comments.

Comments from military departments must be identified as either "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians or this office, as applicable, in sufficient time to allow for consolidating the department reply.

Please forward your comments or concurrence electronically to the project engineer listed below by COB 2 October 2012. This can be in the form of a return email, with or without an attached text file (see comment forms at the above web site). Any further coordination concerning this document will be circulated only to firms and organizations that furnish comments or reply that they have an interest.

Lack of reply by the above due date will be interpreted as either no interest in or concurrence with these documents.

The point of contact for these documents is Mr. Gene Ebert, DLA Land and Maritime-VAT. The preferred method of contact is via email: eugene.ebert@dla.mil. Mr. Ebert can also be reached at 614-692-0729/DSN 850-0729, or by facsimile 614-692-6939/850-6939.

/S/

MICHAEL A. RADECKI
Chief
Electronic Components Branch

Attachments:
A-A-XX159, XX160 & XX161
Certificate of Conformance forms

A-A-XX161

CERTIFICATE OF COMPLIANCE
FOR COMMERCIAL ITEM DESCRIPTION (CID)

DLA Land and Maritime-VAT Contact: Gene Ebert, Phone 614-692-0729, FAX 614-692-6939

MANUFACTURER'S NAME AND LOCATION: _____

_____,

_____

CAGE _____

☐ I (We) have reviewed the enclosed CID and hereby certify that our product, currently designed as shown below and assembled at our plant location in:

_____

_____
(write "same" if applicable)
meets or exceeds the performance requirements of this CID.

☐ (We) have reviewed the enclosed CID and hereby certify that our product, currently designed as shown below and assembled at our plant location in:

_____

_____
(write "same" if applicable)
will meet this CID, provided that the attached comments are incorporated into the document.

CID Number	Manufacturer's P/N
A-A-XX161_____	_____

(attach cross reference table or additional certificate of compliance sheets as necessary)

I (We) understand that this certificate is not to be used nor construed as a guarantee of continued or indefinite availability for the described commercial item description. However, under present circumstances, we would expect to supply a separate certificate of compliance in company format pertaining to lot date code shipped on the order. On the basis of the statement checked above, please list us as a "known source of supply" on your commercial item description.

☐ No interest in this CID.

_____
AUTHORIZED SIGNATURE (S) (TITLE)

_____
(DATE) (TELEPHONE) (FAX)

NOTE: This draft, dated 17 August 2012 prepared by DLA-CC, has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project 6060-2012-005)

[INCH-POUND]
A-A-XX160

COMMERCIAL ITEM DESCRIPTION

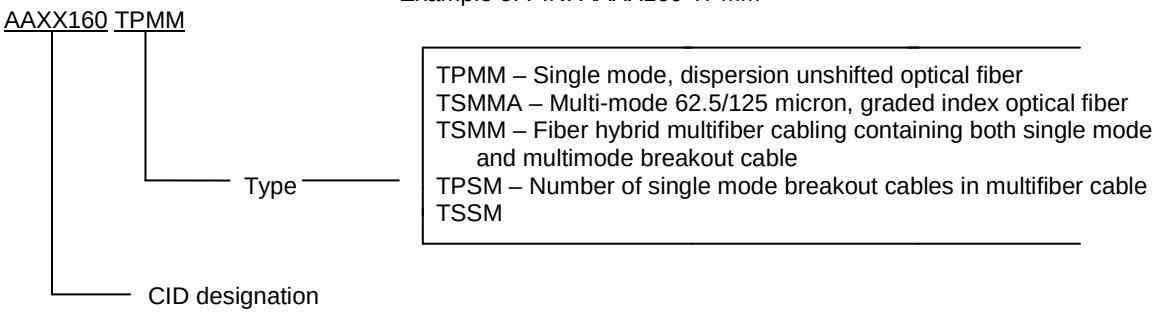
REMOVABLE TERMINI FOR MULTIPLE TERMINI FIBER OPTIC CONNECTORS

The General Services Administration has authorized the use of this commercial item description for all federal agencies.

1. SCOPE. This Commercial Item Description (CID) covers multiple removable pin termini and socket termini which are required for circular, plug and receptacle style, fiber optic connectors respectively. The connector plugs and receptacles that are compatible with the termini types in this CID must be procured separately using CID A-A-XX159 (FIBER OPTIC CONNECTORS, HERMAPHRODITIC, MULTIPLE REMOVABLE TERMINI).

2. CLASSIFICATION/PART OR IDENTIFICATION NUMBER (PIN). This CID uses a classification system which is included in the PIN as shown in the following example (see 7.1).

Example of PIN: AAXX160 TPMM



2.1 Type. The removable pin termini and socket termini specified in this CID shall conform to the requirements of this CID. These components shall be referred to by the type designation specified in Table I below:

Table I. Termini types.

Type	Description
TP-MM	Termini, pin, long length, ceramic ferrule, multimode (MM), crimp sleeve included. (Commercial equivalent to MIL-SPEC P/N M29504/14-4131C).
TS-MM-A	Termini, socket, long length, ceramic ferrule, multimode (MM), crimp sleeve included, alignment sleeve not included
TS-MM	Termini, socket, long length, ceramic ferrule, multimode (MM), crimp sleeve included. (Commercial equivalent to MIL-SPEC P/N M29504/15-4171C).
TP-SM	Termini, pin, long length, ceramic ferrule, single mode (SM), crimp sleeve included. (Commercial equivalent to MIL-SPEC P/N M29504/14-4141C).
TS-SM	Termini, socket, long length, ceramic ferrule, single mode (SM), crimp sleeve included. (Commercial equivalent to MIL-SPEC P/N M29504/15-4181C).
TS-SM-A	A Termini, socket, long length, ceramic ferrule, single mode (SM), crimp sleeve included, alignment sleeve not included.

3. SALIENT CHARACTERISTICS

3.1 Performance requirements. The termini listed in table I shall meet the performance requirements specified in table II when tested with fiber optic connectors that conform to CID A-A-00159.

Table II. Termini test procedures and performance requirements.

Test procedure 11/	Performance requirement
Group I tests: visual/dimensional/optical	
Size (TIA-455-13)	Dimensions per Appendix B; 7/ 10/
Workmanship (TIA-455-13)	No pits, burs, etc.; mates properly 1/, 7/
Circular runout (TIA-455-135)	Inside/outside diameter circular runout within 1 micron (0.00004 in.); 7/
Insertion loss (TIA/EIA-455-34, methods A1 and B)	MM: 0.5 dB avg, 0.75 dB max 2/, 8/ SM: 0.5 dB avg, 0.75 dB max 2/, 8/ SM: 0.25 dB avg, 0.5 dB max 2/, 9/
Return loss (TIA-455-107)	MM: None SM: 30 dB min 2/, 8/ SM: 40 dB min 2/, 9/
Group II tests: mechanical	
Single fiber cable pull out force (TIA-455-6, axial load 10 kg (22 lb) for 1 minute; one termini pair at a time)	2/, 3/, 7/
Mating durability (TIA-455-21, 500 cycles)	1/, 2/, 3/
Return loss (TIA-455-107)	MM: None SM: 30 dB min 2/, 8/ SM: 40 dB min 2/, 9/
Impact (TIA-455-2, method A)	1/, 2/, 3/
Insertion Loss, Maximum (TIA/EIA-455-34, Methods A1 & B)	MM:1.0 dB avg, 1.25 dB max 2/ 8/ SM: 1.0 dB avg, 1.25 dB max 2/ 8/ SM: 0.75 dB avg, 1.0 dB max 2/ 9/
Group III tests: environmental	
Temperature humidity cycling (TIA/EIA-455-5, Type 2)	1/, 2/,3/
Temperature cycling (TIA-455-3, -40°C/65°C for 5 cycles)	1/, 2/, 3/
Temperature life (TIA/EIA-455-4, 110°C for 240 hrs.)	1/, 2/ ,4/
Return loss (TIA-455-107)	MM: None SM: 30 dB min 2/, 8/ SM: 40 dB min 2/, 9/
Insertion loss, maximum (TIA/EIA-455-34, Methods A1 & B)	MM:1.0 dB avg, 1.25 dB max 2/, 8/ SM: 1.0 dB avg, 1.25 dB max 2/, 8/ SM: 0.75 dB avg, 1.0 dB max 2/, 9/
Group IV tests: materials	
Fungus resistance (TIA -455-56)	5/
Salt spray (TIA-455-16, 96 hours at 35°C)	6/

1/ No visual evidence of cracking, degradation, deterioration, distortion, separation, corrosion, etc.
2/ A connector pair that is currently approved to A-A-XX159 is required for this test.
3/ Change in optical transmittance 0.5 dB both during and after the test per TIA-455-20.
4/ Change in optical transmittance 0.5 dB after the test per TIA-455-20.
5/ Materials shall show no, sparse or very restricted microbial growth and reproduction. Little or no chemical, physical or structural change shall be detectable.
6/ No corrosive effects shall be seen on the termini which could be detrimental its operation.

Table II. Termini test procedures and performance requirements (continued).

7/ If also testing candidate connectors per A-A-XX159 with candidate termini, then these tests are applicable in addition to those specified in A-A-XX159.
8/ Requirement for average is average value of termini per connector. Values specified are those for standard optical signal level performance.
9/ Requirement for enhanced optical signal level performance. Different/revised polishing procedure must be used. Unless otherwise specified in the contract, tests for performance verification shall be performed to standard performance requirement.
10/ Ferrule hole diameter shall be compatible with multimode optical fiber that conforms to TIA/EIA-492AAA and single mode optical fiber that conforms to TIA/EIA-492CAAA. Termini rear inside diameter shall accommodate an optical fiber buffer with a diameter of 900 + 50 microns.
11/ When not specified, optical measurements shall be made at the 1300 nm wavelength window. A minimum of 8 fibers shall be monitored during testing. Each fiber shall be monitored individually with no fiber concatenation allowed. Both single mode and multimode fibers shall be monitored. Optical source launch conditions: For SM fiber use 30 mm diameter mandrel and for MM fiber use 70/70 restricted.

3.2 Ferrule end face. Ferrule end face configuration shall ensure compliance with insertion loss and return loss requirements after polishing in accordance with MIL-STD-2042.

3.3 Crimp sleeve. Crimp sleeve shall accept single fiber cable with a maximum outer diameter of 2.4 mm (0.094 inch). The terminus shall meet all requirements when the crimp sleeve is assembled to the terminus using a hex crimp die with flats measuring 2.400 mm ± 0.025 mm (0.0945 inch ± 0.001 inch) across and 6.60 mm (0.260 inch) maximum long.

3.4 Fabrication compatibility. Insertion and removal of terminus with respect to the connectors specified in CID A-A-XX159 shall be achievable using the approved Navy tool kit described in NAVSEA Drawings 6872813 and 7325763.

3.5 Pin termini spring constant. The mating force shall be a minimum of 5 lb when nominal termini are inserted and mated in a fiber optic connector in accordance with CID A-A-XX159.

3.6 Termini interchangeability. All termini of the same type listed in this CID shall be physically and functionally interchangeable without need for modification of such items or of the mating equipment and shall be interoperable with their counterpart termini. Refer to Appendix A for interchangeability test procedures and requirements.

3.7 Sealing. O-ring shall provide a seal between termini and connector insert when immersed in the following fluids and not swell or degrade to the extent of effecting sealing, optical performance, termini insertion and termini removal. Fluids to be compatible with the o-ring are: fuel oil (MIL-F-16884), turbine fuel (JP-5, JP-8 MIL-T-5624), isopropyl alcohol (TT-I-735), hydraulic fluid (MIL-H-17672 and MIL-H-5606), lubricating oil (MIL-L-17331, MIL-L-23699), Chevron Int'l Coolanol 25R (MIL-C-47220 Type IV), sea water (3% NaCl) or the commercial equivalent. O-ring shall provide a seal between the termini and connector insert when immersed in water to an equivalent depth of 9.8 m (32 ft) for a period of 48 hours.

3.8 Materials.

3.8.1 Ferrule. Ceramic.

3.8.2 Body. Stainless steel, gold plated or nickel plated brass.

3.8.3 Alignment sleeve: Ceramic.

3.8.4 O-ring. See sealing requirements.

3.8.5 Retaining clip. See interchangeability requirements.

3.8.6 Spring. See pin termini spring constant.

3.9 Optical transmittance instrumentation stability. Optical transmittance instrumentation should be subjected to the following stability tests before any testing is performed. The first test should consist of measuring the transmitted power through each channel once every minute for a 4 hour period. The second test should consist of measuring the transmitted power through each channel once every 30 minutes for a 96 hour period. The data for each channel should be analyzed to determine average transmittance, minimum and maximum transmittance, the standard deviation of the transmittance, and the minimum and maximum percent deviation of transmittance.

3.10 Accessories. Each termini shall be packaged with a minimum of one crimp sleeve and one ferrule dust cover.

4. REGULATORY REQUIREMENTS. The offeror/contractor is encouraged to use recovered materials to the maximum extent practicable, in accordance with 23.403 of the Federal Acquisition Regulation (FAR).

5. PRODUCT CONFORMANCE PROVISIONS.

5.1 Interchangeability conformance. As a precursor to market acceptability, the interchangeability requirements in Appendix A of this CID shall be met.

5.2 Market acceptability. Termini procured to this CID shall have demonstrated commercial market acceptability. Suppliers will demonstrate market acceptability by showing that they have sold more the 200 fiber optic termini with ceramic ferrules to commercial customers and have been selling the product for greater than 2 years.

5.3 Product conformance. The products provided shall meet the salient characteristics of this Commercial Item Description, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial marketplace. The Government reserves the right to require proof of such conformance.

6. PACKAGING. Preservation, packing, and marking shall be as specified in the contract or order.

7. NOTES.

7.1 PIN. The PIN should be used for Government purposes to buy commercial products to this CID. See section 2 for PIN format example.

7.2 Environmentally preferable material. Environmentally preferable materials should be used to the maximum extent possible to meet the requirements of this specification. As of the dating of this document, the U.S. Environmental Protection Agency (EPA) is focusing efforts on reducing 31 priority chemicals. The list of chemicals and additional information is available on their website http://www.epa.gov/osw/hazard/wastemin/priority.htm. Included in the EPA list of 31 priority chemicals are cadmium, lead, and mercury. Use of these materials should be minimized or eliminated unless needed to meet the requirements specified herein (see Section 3).

7.3 Commercial and Government Entity (CAGE) code. For ordering purposes, inventory control, and submission of these fiber optic connectors, hermaphroditic, multiple removable termini to DLA Land and Maritime under the Military Parts Control Advisory Group (MPCAG) evaluation program, CAGE code 58536 should be used.

7.4 Source of documents.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-C-87252	-	Coolant Fluid, Hydrolytically Stable, Dielectric
MIL-DTL-5606	-	Hydraulic Fluid, Petroleum Base, Aircraft, Missile, and Ordinance
MIL-DTL-5624	-	Turbine Fuel, Aviation, Grades JP-4 and JP-5.
MIL-DTL-16884	-	Fuel, Naval Distillate.
MIL-PRF-17331	-	Lubricating Oil, Steam Turbine and Gear, Moderate Service.
MIL-PRL-17672	-	Hydraulic Fluid, Petroleum Inhibited
MIL-PRF-23699	-	Lubricating Oil, Aircraft Turbine Engine, Synthetic Base, NATO Code Number O-156.

(Copies of these documents are available online at https://assist.dla.mil/quicksearch/ or https://assist.dla.mil or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

FEDERAL STANDARD

FED-STD-228	-	Cable and Wire, Insulated; Methods of Testing

FEDERAL REGULATION

FAR	-	Federal Acquisition Regulations (FAR)

(Copies of these documents are available online at www.acquisition.gov/comp/far/index.html or from the U.S. Government Printing Office, 732 North Capital Street, NW, Washington D.C. 20401.)

Other Publications

ASTM INTERNATIONAL

ASTM-D-412	-	Rubber, Vulcanized and Thermoplastic Elastomers – Tension

(Copies of this document are available online at http://www.astm.org or from the ASTM International, P.O. Box C700, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.)

TELECOMMUNICATIONS INDUSTRY ASSOCIATION

TIA-455-2	-	Impact Test Measurements for Fiber Optic Devices
TIA-455-3	-	FOTP-3 Procedure to Measure Temperature Cycling Effects on Optical Fiber Units, Optical Cable, and Other Passive Fiber Components
TIA/EIA-455-4	-	FOTP-4 Fiber Optic Component Temperature Life Test
TIA/EIA 455-5	-	FOTP-5 Humidity Test Procedure for Fiber Optic Components
TIA-455-6	-	FOTP-6 Cable Retention Test Procedure for Fiber Optic Cable Interconnecting Devices
TIA-455-12	-	FOTP-12 Fluid Immersion Test for Fiber Optic Components
TIA-455-13	-	FOTP-13 Visual and Mechanical Inspection of Fiber Optic Components, Devices and Assemblies
TIA-455-16	-	FOTP-16 Salt Spray (Corrosion) Test for Fiber Optic Components
TIA-455-20	-	FOTP-20 IEC 60793-1-46 Optical Fibres-Part 1-46: Measurement Methods and Test Procedures-Monitoring of Changes in Optical Transmittance
TIA-455-21	-	FOTP-21 Mating Durability of Fiber Optic Interconnecting Devices
TIA/EIA-455-25	-	FOTP-25 Impact Testing of Optical Fiber Cables
TIA-455-33	-	FOTP-33 Optical Fiber Cable Tensile Loading and Bending Test
TIA/EIA-455-34	-	FOTP-34 Interconnection Device Insertion Loss Test
TIA-455-37	-	FOTP-37 Low or High Temperature Bend Test for Fiber Optic Cable
TIA/EIA-455-41	-	FOTP-41 Compressive Loading Resistance of Fiber Optic Cables
TIA-455-56	-	Test Method for Evaluating Fungus Resistance of Optical Fiber and Cable.
TIA-455-78	-	FOTP-78 IEC 60793-1-40 Optical Fibres – Part 1-40 Measurement Methods and Test Procedures – Attenuation
TIA-455-107	-	FOTP-107 Determination of Component Reflectance or Link/System Return Loss Using a Loss Test Set
TIA-455-135	-	FOTP-135 Mesurement of Connector Ferrule Inside and Outside Diameter Circular Runout

(Copies of these documents are available online at www.tiaonline.org or from the Telecommunications Industry Association, 2500 Wilson Boulevard, Suite 300., Arlington, VA 22201.)

UNDERWRITERS LABORATORIES INC. (UL)

UL1581 - WIRES, ELECTRICAL, CABLES, AND FLEXIBLE CORDS

(Copies of these documents are available online at http://www.ul.com or from the Underwriters Laboratories Inc., Publication Stock, 333 Pfingsten Road. Northbrook, IL 60062-2096.)

7.5 Ordering data. The contract or order should specify the following:

a. When Government testing is required. Test samples required to approve termini are as follows:

(1) Six MM and six SM termini pair (one pin termini and one socket termini = one pair) are to be provided for the tests listed in table II of this CID.

(2) Six additional termini pair (one pin termini and one socket termini = one pair) are to be provided for materials testing which include fungus resistance and salt spray.

b. Quantity and type of termini required.

c. When this CID is used for procurement, the product conformance clause must appear in the solicitation.

d. Preservation, packaging, packing and marking requirements.

7.6 Patent notice. The Government does not have a royalty free license under the following patent for the benefit of manufacturers of the item, either for the Government or for use in equipment to be delivered to the Government.

Patent number	Patent expiration date
US 4707068	11/17/2004

7.7 Commercial products. As part of the market analysis and research effort, this CID was coordinated with the following manufacturers of commercial products. At the time of CID preparation and coordination, these manufacturers were known to have commercial products that would meet the requirements of this CID. (NOTE: This information should not be considered as a list of approved manufacturers or be used to restrict acquisition to only the manufacturers shown.)

MFR's CAGE	MFR's name and address
CAGE	**Manufacturer's NAME** **Manufacturer's ADDRESS** **Manufacturer's ADDRESS (Continued)** **Manufacturer's PHONE NUMBER** **Manufacturer's FAX NUMBER (if applicable)** **Manufacturer's GENERIC E-MAIL (if applicable)** **Manufacturer's URL (if applicable)**
CAGE	**Manufacturer's NAME** **Manufacturer's ADDRESS** **Manufacturer's ADDRESS (Continued)** **Manufacturer's PHONE NUMBER** **Manufacturer's FAX NUMBER (if applicable)** **Manufacturer's GENERIC E-MAIL (if applicable)** **Manufacturer's URL (if applicable)**

7.8 Part number (P/N) supersession data. These CID PINs supersede the following MFR's P/N's as shown. This information is being provided to assist in reducing proliferation in the Government inventory system.

TABLE #. P/N supersession data.

Dash number (see table I) AA**BBBBB**	MFR's CAGE	MFR's P/N 1/	MFR's CAGE	MFR's P/N 1/
001	**BBBBB**	**BBBBBBB**	**BBBBB**	**BBBBBBB**
002	**BBBBB**	**BBBBBBB**	**BBBBB**	**BBBBBBB**

1/ The manufacturer's P/N shall not be used for acquisition to the requirements of this CID. At the time of preparation of this CID, the aforementioned commercial products were reviewed and could be replaced by the CID PIN shown. For actual part marking requirements see 3.3**.**

7.9 Government users. To acquire information on obtaining these hermaphroditic fiber optic connectors, from the Government inventory system, contact DLA Land and Maritime, ATTN: VAT, P.O. Box 3990, Columbus, OH 43218-3990, or telephone (614) 692-0729.

REMOVABLE TERMINI, FIBER OPTIC, MULTIPLE TERMINI CONNECTOR
INTERCHANGEABILITY REQUIREMENTS

Interchangeability. Termini shall be physically and functionally interchangeable without need for modification of such items or of the mating equipment and shall be interoperable with their counterpart A-A-XX159 connectors. Interchangeability shall be performed on separate components and assemblies than those used for and as a precursor to any quality assurance provisions for market acceptability or product conformance inspections.

1. Interoperability with counterpart connectors. Interoperability of the termini and connector shall be performed as specified in 1a and 1b and Table I.

   a. Termini. This test is applicable for candidate termini being considered.

      (1) Test sample configuration. Termini from different sources shall be placed in the connectors as specified in Table I. This test is repeated with all previously certified sources of termini that are identified as being interchangeable.

      (2) Test performed. Tests shall be performed as specified in 1b using test variations 1 through 3 specified in Table I.

   b. Optical performance test for interoperability.

      (1) Test method. Test shall be performed to TIA/EIA-455-34, Methods 1A and B. Power meter or test set with a wide area detector and adapters specifically for A-A-XX160 termini and ST connector plug interface shall be used. One terminus pigtail shall be used to simulate the pre-cut cable. The terminus is inserted into the termini adapter (at detector end) and a measurement obtained. Next, perform the post-cut cable measurement. The terminus is inserted into the connector plug and mated with the mating terminus in the connector receptacle. The ST connector on the mating terminus pigtail is inserted into the ST connector adapter (at detector end) and a measurement obtained.

      (2) Test requirement. The different between the pre-cut and post cut cable measurements shall be < 0.75 dB for MM fiber and < 0.75 dB for SM fiber.

Table I. Interchangeability test variations.

Test variation	Connector receptacle	Termini socket	Connector plug	Termini pin
1	X	A	X	B
2	X	B	X	A
3	X	B	X	B

X = Previously certified connector
B = Candidate termini
A = Previously certified termini

2. Termini mechanical test.

   a. Test sample configuration. Termini shall be placed in the previously certified connectors as specified in Table I. This test is performed to verify conformance to specified termini insert and removal force levels.

   b. Test performed. Tests shall be performed as specified in 2c and 2d using certified connectors and variation 3 in Table I. Test shall be performed on a minimum of 6 socket termini and 6 pin termini.

   c. Termini insertion and removal force test.

      (1) Test method. Non-terminated pin and socket termini shall be inserted into a previously certified connector using a terminus insertion tool and the force required to insert the terminus measured. A terminus removal tool shall then be engaged to unlock the terminus. The terminus shall be removed and the force required to remove the terminus measured.

(2) Test requirement. The termini insertion force and the force required to remove unlocked termini shall not exceed 98 N (22.0 lb).

d. Termini retention force test.

(1) Test method. Test shall be performed on non-terminated pin and socket termini one at a time. Terminus shall be inserted into a previously certified connector. An axial compressive load shall be applied to the front face of the terminus tending to push the terminus to the rear of the connector insert. A pre-load not greater than 13.3 N (3 lb) may be used to seat the terminus for the initial measurement. Axial loads shall be applied at a rate of 4.4 N/s (1.0 lb/s) up to a maximum load 98 N (22.0 lb). The maximum load shall be maintained for a minimum of 5 seconds.

(2) Test requirement. Termini shall be retained in their inserts up to a maximum load of 98 N (22.0 lb).

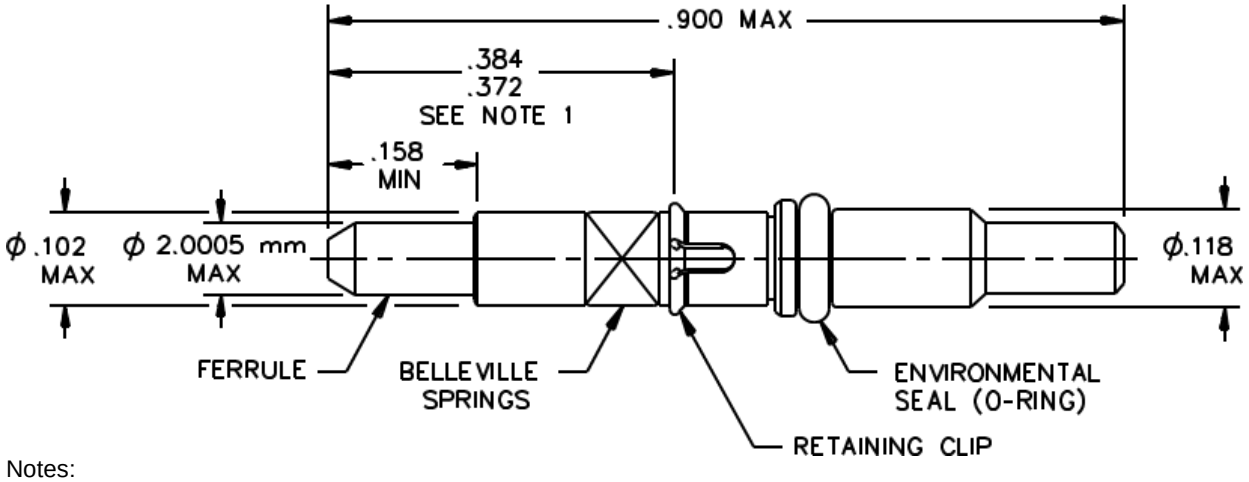
3. Installation and removal tools inspection. Tools used shall be listed on NAVSEA Drawings 6872813 and 7325763. Tools shall be used during termini/connector assembly and testing to verify performance.

APPENDIX B

INTERCHANGEABILITY DIMENSIONS
REMOVABLE TERMINI, FIBER OPTIC, MULTIPLE TERMINI CONNECTOR

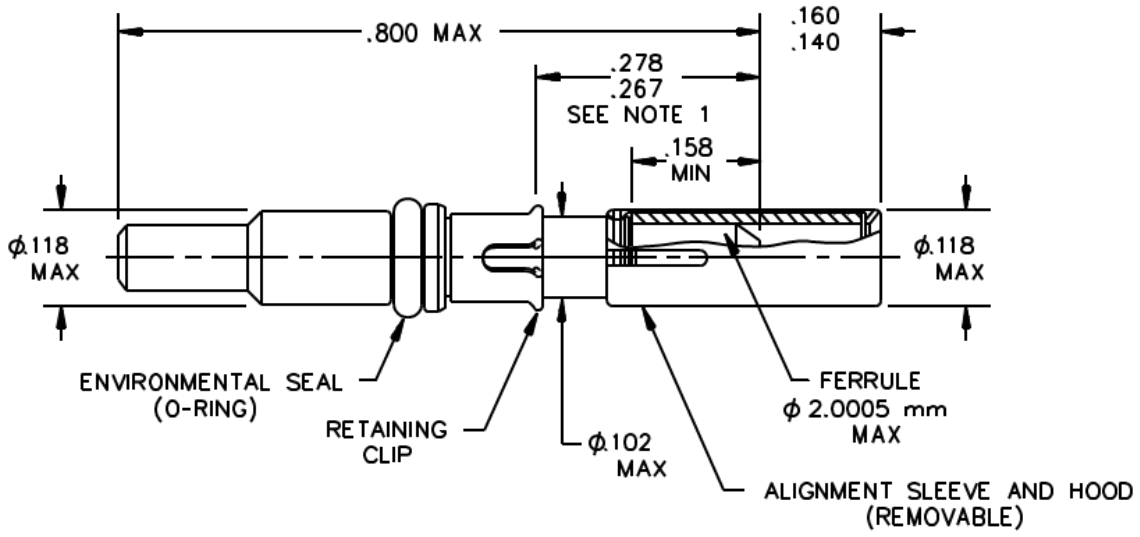
This appendix has the figures with interchangeability dimensions for the termini as listed in the following table:

Figure Number	Description
1	Interchangeability dimensions for pin terminus
2	Interchangeability dimensions for socket terminus
3	Interchangeability dimensions for insert inspection fixture



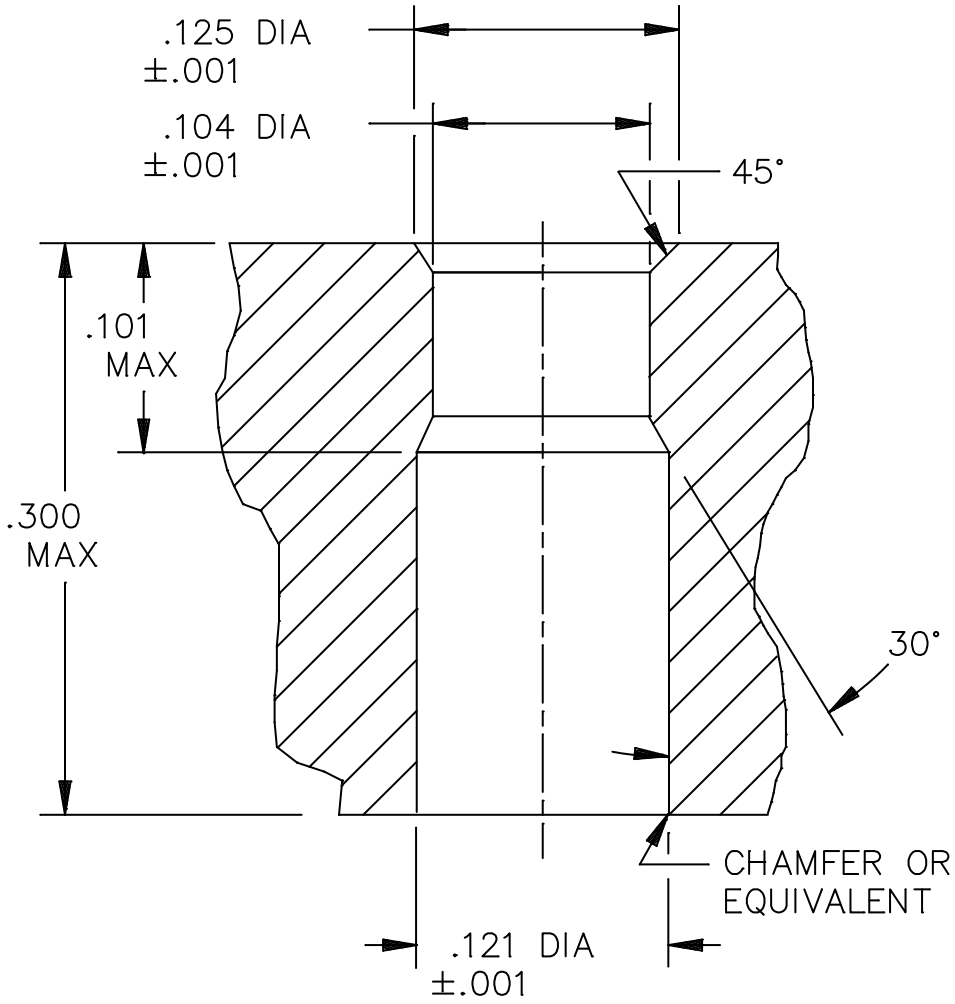
Notes:
1/ This dimension is used when the termini is inserted into the insert dimension fixture, see figure 3.
2/ Dimensions are in inches, unless otherwise specified.

FIGURE 1. Interchangeability dimensions for pin terminus.



Notes:
1/ This dimension used when inserted into insert dimension fixture, see figure 3.
2/ Dimensions are in inches, unless otherwise specified.

FIGURE 2. Interchangeability dimensions for socket terminus.
(shown with alignment sleeve & retainer hood assembled)



NOTES:

1. Dimensions are in inches.
2. All diameters are to be concentric within .002 inches (0.05mm).
3. Dimensions apply to plated/finished part.
4. Tolerances on all angles are ±1 degrees, unless otherwise specified.

FIGURE 3. Insert equivalent fixture for insert inspection fixture.

MILITARY INTERESTS:

Custodians:
NAVY - SH

CIVIL AGENCY COORDINATING ACTIVITY:

GSA - FAS

Preparing activity:

DLA-CC

Project 6060-2012-005

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at https://assist.dla.mil.