



AEROSPACE STANDARD

AS50151™**REV. E**Issued 2004-06
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Superseding AS50151D

Connectors, Electrical, Circular Threaded, AN Type,
General Specification for

FSC 5935

RATIONALE

Revision is required to add a nickel plated stainless steel class (DSN) and a tin-zinc class (DV) to the document as applicable, to correct numerous editorial errors, to delete outdated document references/to add new applicable document references and to update firewall test sample information.

1. SCOPE

1.1 Scope

This specification covers circular threaded electrical connectors with solder or removable crimp contacts (both front and rear release). These connectors are for use in electronic, electrical power, and control circuits (see 6.1).

1.2 Classification

Electrical connectors covered by this specification are divided into the following classes, series, and receptacle styles.

1.2.1 Classes

The classes of electrical connectors are as follows:

Class A - Solid shell solder contact connectors

Class B - Split shell solder contact connectors

Class C - Solder contact connectors for use with pressurized equipment

Class D - Crimp and solder contact connectors for use in high-impact shock conditions

Class DS - Crimp and solder contact connectors for use in high-impact shock conditions, stainless steel

Class DSN - Crimp and solder contact connectors for use in high-impact shock conditions, stainless steel with electrodeposited or electroless nickel finish (Recommended for U.S. Navy shipboard applications only)

Class DJ - Crimp contact connectors with backshell connector assembly for use in high impact shock conditions

Class DJS - Crimp contact connectors with backshell connector assembly for use in high impact shock conditions, stainless steel

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Full document details: SAE AS50151E

For more information on this standard, visit
<https://www.sae.org/standards/content/AS50151E/>

Documents

Document Sharing Hub

- Class DT - Crimp and solder contact connectors for use in high-impact shock conditions, with nickel fluorocarbon polymer additives over a suitable underplate finish
- Class DV - Crimp and solder contact connectors for use in high-impact shock conditions, with tin-zinc finish (Recommended for U.S. Navy shipboard applications only)
- Class DY - Crimp and solder contact connectors for use in high-impact shock conditions, with pure dense electrodeposited aluminum finish
- Class DZ - Crimp and solder contact connectors for use in high-impact shock conditions, with zinc nickel over suitable underplate finish
- Class E - Environment resistant solder contact connectors
- Class F - Environment resistant solder contact connectors, with clamp
- Class H - Hermetic solder contact connectors
- Class HS - Hermetic solder contact connectors, stainless steel with passivated finish
- Class HT - Hermetic solder contact connectors, ferrous alloy with electrically conductive fused tin
- Class K - Crimp and solder firewall connectors
- Class KS - Crimp and solder firewall connectors, stainless steel with passivated finish
- Class KT - Crimp and solder firewall connectors, ferrous alloy with cadmium olive drab over nickel finish
- Class L - Fluid resistant crimp contact connectors
- Class LS - Fluid resistant crimp contact connectors, stainless steel with passivated finish
- Class P - Environment resistant potted solder contact connectors
- Class R - Crimp and solder contact connector with grommet seal without clamp
- Class U - Fluid resistant crimp contact connectors
- Class US - Fluid resistant crimp contact connectors, stainless steel with passivated finish
- Class W - General purpose crimp contact connectors (500 hour corrosion resistance requirement)
- Class WS - General purpose crimp contact connectors, stainless steel with passivated finish
- Class WT - General purpose crimp contact connectors, with nickel fluorocarbon polymer additives over a suitable underplate finish
- Class WY - General purpose crimp contact connectors, with pure dense electrodeposited aluminum finish
- Class WZ - General purpose crimp contact connectors, with zinc nickel over suitable underplate finish
- Class X - General purpose crimp contact connectors (1000 hour corrosion resistance requirement)

1.2.2 Series

The series of electrical connectors are as follows:

- Series I - Solder contact connectors
- Series II - Front release, crimp contact connectors
- Series III - Rear release, crimp contact connectors
- Series IV - Connector accessories

1.2.3 Receptacle Styles

The receptacle styles of electrical connectors are as follows:

- Flange (box or wall)
- Jam nut
- Cable connecting
- Solder mounting

2. APPLICABLE DOCUMENTS

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1 General

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

2.2 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

AMS-C-26074	Electroless Nickel Coatings
AMS-QQ-P-416	Plating, Cadmium (Electrodeposited)
AMS-QQ-N-290	Nickel Plating (Electrodeposited)
AMS-QQ-S-763	Steel, Corrosion Resistant, Bars, Wire, Shapes, and Forgings
AMS2434	Plating, Tin-Zinc Alloy
AMS2454	Plating, Electroless Nickel, Codeposited with Polytetrafluoroethylene (PTFE)
AIR1351	Manufacturers' Identification of Aerospace Electrical and Electronic Wiring Devices and Accessories
AIR6151	Torque, Threaded Application, Electrical Connector, Accessory and Terminal Board Installation
AS22520	Crimping Tools, Wire Termination, General Specification For
AS22759	Wire, Electrical, Fluoropolymer-Insulated, Copper or Copper Alloy
AS31091	Boots, Heat-Shrinkable, Strain-Relief, Straight

AS31551	Connector, Electric, Rear Accessory Design Standard
AS31971	Gage Pin for Socket Contact Engagement Test
AS39029	Contacts, Electrical Connector, General Specification For
AS39029/29	Contacts, Electrical Connector, Pin, Crimp Removable (For AS50151 Series, AS345XX and MIL-DTL-83723 Series 2 Connectors)
AS39029/30	Contacts, Electrical Connector, Socket, Crimp Removable (For AS50151 AS345XX Series and MIL-DTL-83723 Series II Connectors)
AS39029/44	Contacts, Electrical Connector, Pin, Crimp Removable (For AS50151 Series AS34001 and AS95234 Connectors)
AS39029/45	Contacts, Electrical Connector, Socket, Crimp Removable (For AS50151 Series AS34001 and AS95234 Connectors)
AS39029/112	Contact Bushing, Electrical Connector Contact, Wire Barrel
AS39029/123	Contacts, Electrical Connector, Socket, Crimp Removable (For AS50151 Series AS340X1 Connectors and AS95234 Connectors)
AS39029/124	Contacts, Electrical Connector, Pin, Crimp Removable (For AS50151 Series AS340X1 Connectors and AS95234 Connectors)
AS81969/14	Installing and Removal Tools, Connector, Electrical Contact, Type III, Class 2, Composition B
AS81969/15	Removal Tools, Connector, Electrical Contact, Type II, Class 2, Composition A
AS81969/17	Installing and Removal Tools, Connectors, Electrical Contact, Type I, Class 1, Composition C
AS81969/19	Installing and Removal Tools, Connector, Electrical Contact, Type II, Class 1, Composition C
AS85049	Connector Accessories, Electrical, General Specification For
AS85049/11	Connector Accessories, Electrical, Backshell, Environmental, Cable Sealing, Straight, Category 1A (For AS50151 Crimp, AS95234, MIL-DTL-26482 Series 2, AS81703 Series 3, and MIL-DTL-83723 Series III Connectors)
AS85049/52	Connector Accessories, Electrical, Strain Relief, Nonenvironmental, Self-Locking and Non-Self-Locking, Straight, Category 4B (For AS50151 Crimp, AS95234, MIL-DTL-26482 Series 2, AS81703 Series 3, and MIL-DTL-81723 Series III Connector)

2.2.1 Connectors, Solder Contact*

AS25183	Connector, Plug, Electric, Potting Seal, Solder Contact, AN Type
AS31001	Connector, Receptacle, Electric, Wall Mounting, Solder Contacts, AN Type
AS31011	Connector, Receptacle, Electric, Cable Connecting, Solder Contacts, AN Type
AS31021	Connector, Receptacle, Electric, Box Mounting, Solder Contacts, AN Type
AS31031	Connector, Receptacle, Electric, Potting Seal, Solder Contact, AN Type
AS31061	Connector, Plug, Electric, Straight, Solder Contacts, AN Type
AS31081	Connectors, Plug, Electric, Solder Contact, 90°, AN Type

AS31421 Connectors, Receptacle, Electrical, Box Mounting, Solder Contact, Hermetic, AN Type

AS34361 Connector, Plug, Electric, Solder Contact, Utility

AS34411 Connector, Plug, Electric, Utility

AS35071 Connector, Plug, Electric, Solder Contact, Quick Disconnect, Utility

2.2.2 Connectors, Crimp Contact, Front Release*

AS34001 Connectors, Receptacle, Electric, Wall Mounting, Front Release, Crimp Contact, AN Type

AS34011 Connectors, Receptacle, Electric, Cable Connecting, Front Release, Crimp Contact, AN Type

AS34021 Connector, Receptacle, Electric, Box Mounting, Front Release, Crimp Contact, AN Type

AS34041 Connectors, Receptacle, Electric, Jam Nut Mounting, Front Release, Crimp Contact, AN Type

AS34061 Connectors, Plug, Electric, Front Release, Crimp Contact, AN Type

AS34081 Connectors, Plug, Electric, 90 Degree Assembly, Crimp Contact, AN Type

AS34091 Connectors, Plug, Electric, 45 Degrees Assembly, Crimp Contact, AN Type

AS34121 Connectors, Receptacle, Electric, Wall Mounting, Front Release, Crimp Contact, AN Type - With Accessory Threads

2.2.3 Connectors, Crimp Contact, Rear Release*

AS34501 Connectors, Receptacle, Electrical, Wall Mounting, Rear Release, Crimp Contact, AN Type

AS34511 Connectors, Receptacle, Electric, Cable Connecting, Rear Release, Crimp Contact, AN Type

AS34521 Connector, Receptacle, Electric, Box Mounting, Rear Release, Crimp Contact, AN Type

AS34541 Connectors, Receptacle, Electrical, Jam Nut Mounting, Rear Release, Crimp Contact, AN Type

AS34561 Connectors, Plug, Electrical, Rear Release, Crimp Contact, AN Type

AS34591 Connector, Plug, Electrical, Self-Locking, Coupling Nut, Rear Release, Crimp Contact, AN Type

2.2.4 Connector Accessories

AS25042* Cover, Electrical AS50151 Connector, Plug, AN Type

AS25043* Cover, Electrical AS50151 Connector, Receptacle, AN Type

AS31051* Connector, Receptacle, Electric, Dummy Stowage

AS85049/138 Connector Accessories, Electrical, Cap, Dust, Plastic, Category 9

* AS50151 detail specification

2.3 U.S. Government Publications

Copies of these documents are available online at <https://quicksearch.dla.mil>.

2.3.1 Specifications and Standards

The following specifications and standards form a part of this document to the extent specified herein. Unless otherwise specified, these documents are listed in the Department of Defense ASSIST database: <https://quicksearch.dla.mil/>.

2.3.1.1 Specifications

2.3.1.1.1 Federal

L-P-410 Plastic, Polyamide (Nylon), Rigid, Rods, Tubes, Flats, Molded and Cast Parts

2.3.1.1.2 Department of Defense

MIL-DTL-901 Shock Tests H.I. (High-Impact) Shipboard Machinery, Equipment, and Systems, Requirements for

MIL-DTL-915 Cable, Electrical, for Shipboard Use, General Specification for

MIL-DTL-16878 Wire, Electrical, Insulated, General Specification for

MIL-DTL-25038 Wire, Electrical, High Temperature, Fire Resistant, and Flight Critical, General Specification for

MIL-DTL-81381 Wire, Electric, Polyamide-Insulated, Copper or Copper Alloy

MIL-DTL-83488 Coating, Aluminum, High Purity

MIL-PRF-5606 Hydraulic Fluid, Petroleum Base; Aircraft, Missile, and Ordnance

MIL-PRF-7808 Lubricating Oil, Aircraft Turbine Engine, Synthetic Base

MIL-PRF-8516 Sealing Compound, Synthetic Rubber, Electric Connectors and Electric Systems, Chemically Cured

MIL-PRF-23586 Sealing Compound (With Accelerator), Silicone Rubber, Electrical

MIL-S-7742 Screw Threads, Standard, Optimum Selected Series: General Specification for

MS3187 Plug, End Seal, For MIL-DTL-26482, SAE-AS50151, SAE-AS81703, and MIL-DTL-83723 Electrical Connectors

MS27488 Plug, End Seal, Electrical Connector

MS28900 Packing, Preformed, O-Ring, For Electrical Use

MS33678 Connector, Receptacle, Electric, Integral Mounting

MS33695 Contacts, Video Coaxial Connector

2.3.1.2 Standards

2.3.1.2.1 Federal

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

2.3.1.2.2 Department of Defense

MIL-STD-167-1 Mechanical Vibrations of Shipboard Equipment (Type I-Environmental and Type II-Internally Excited)

MIL-STD-1285 Marking of Electrical and Electronic Parts

MIL-STD-1651 Insert Arrangements for SAE-AS50151, MIL-DTL-22992 (Classes C, J, and R), MIL-DTL-83723 (Series II) and SAE-AS95234 Circular Electrical Connectors

2.4 Non-Government Publications

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents which are DoD adopted are those listed in the issue of the DoDISS cited in the solicitation. Unless otherwise specified, the issues of the documents not listed in the DoDISS are the issues of the documents cited in the solicitation (see 6.2).

2.4.1 ASTM Publications

Available from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959, Tel: 610-832-9585, www.astm.org.

ASTM A342	Standard Test Methods for Permeability of Weakly Magnetic Materials
ASTM A582	Standard Specification for Free-Machining Stainless Steel Bars
ASTM B85	Standard Specification for Aluminum-Alloy Die Castings
ASTM B488	Standard Specification for Electrodeposited Coatings of Gold for Engineering Uses
ASTM B700	Standard Specification for Electrodeposited Silver for Engineering Use
ASTM B733	Standard Specification for Autocatalytic (Electroless) Nickel-Phosphorus Coatings on Metal
ASTM B841	Standard Specification for Electrodeposited Coatings of Zinc Nickel Alloy Deposits

2.4.2 EIA Publications

Available from Electronic Component Association (ECA), 2500 Wilson Boulevard, Arlington, VA 22201-3834, Tel: 703-907-7500, www.eia.org.

EIA-364-02	Air Leakage Test Procedure for Electrical Connectors
EIA-364-03	Altitude Immersion Test Procedure for Electrical Connectors
EIA-364-05	Contact Insertion, Release and Removal Force Test Procedure for Electrical Connectors
EIA-364-06	Contact Resistance Test Procedures for Electrical Connectors
EIA-364-09	Durability Test Procedure for Electrical Connectors and Contacts
EIA-364-10	Fluid Immersion Test Procedure for Electrical Connectors
EIA-364-20	Dielectric Withstanding Voltage Test Procedure for Electrical Connectors, Sockets and Coaxial Contacts
EIA-364-21	Insulation Resistance Test Procedure for Electrical Connectors, Sockets, and Coaxial Contacts
EIA-364-25	Probe Damage Test Procedure for Electrical Connectors
EIA-364-26	Salt Spray Test Procedure for Electrical Connectors, Contact and Sockets
EIA-364-27	Mechanical Shock (Specified Pulse) Test Procedure for Electrical Connectors and Sockets
EIA-364-28	Vibration Test Procedure for Electrical Connectors and Sockets
EIA-364-29	Contact Retention Test Procedure for Electrical Connectors

EIA-364-31	Humidity Test Procedure for Electrical Connectors and Sockets
EIA-364-32	Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors and Sockets
EIA-364-35	Insert Retention Test Procedure for Electrical Connectors
EIA-364-37	Contact Engagement and Separation Force Test Procedure for Electrical Connectors
EIA-364-45	Firewall Flame Test Procedure for Electrical Connectors
EIA-364-83	Shell -To - Shell and Shell-To-Bulkhead Resistance Test Procedure for Electrical Connectors

2.4.3 IEC Publications

Available from International Electrotechnical Commission (IEC), 3, rue de Varembé, 1st floor, P.O. Box 131, CH - 1211 Geneva 20 – Switzerland, Tel.: +41 22 919 02, www.iec.ch/.

IEC 62321-7-1 Determination of certain substances in electrotechnical products – Part 7-1: Hexavalent chromium – Presence of hexavalent chromium (Cr(VI)) in colourless and coloured corrosion-protected coatings on metals by the colorimetric method – Edition 1.0.

2.4.4 IPC - Association Connecting Electronics Industries Publications

Available from IPC, 3000 Lakeside Drive, 309 S, Bannockburn, IL 60015, Tel: 847-615-7100, www.ipc.org.

J-STD-001	Requirements for Soldered Electrical and Electronic Assemblies
J-STD-006	Electronic Grade Solder Alloys and Fluxed and Non-Fluxed Solid Solders for Electronic Soldering Applications Requirements For

2.4.5 National Conference of Standards Laboratories (NCSL) Publications

Available from NCSL International, 2995 Wilderness Place, Suite 107, Boulder, CO 80301, Tel: 303-440-3339, www.ncsli.org.

NCSL Z540.3 Requirements for the Calibration of Measuring and Test Equipment

2.5 Order of Precedence

In the event of a conflict between the text of this document and the references cited herein (except for related associated specifications, or detail sheets), the text of this document shall take precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Detail Sheets

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

3.2 Qualification

The connectors furnished under this specification shall be products that are authorized by the qualifying activity (QA) for listing on the applicable qualified products list before contract award (see 4.3 and 6.14).

3.3 Materials

3.3.1 Dissimilar Metals

When dissimilar metals are employed in contact with each other in a connector or in a mated pair of connectors, protection against galvanic corrosion shall be provided (see 6.17).

3.3.2 Nonmagnetic Materials (Except Class H and K Connectors)

All parts shall be made of materials which are classed as nonmagnetic except for classes H and K connectors (see 1.2 and 3.6).

3.3.3 Contacts

3.3.3.1 Contact Materials

Contacts shall be made of conductive materials. Thermocouple contacts shall be made of a material compatible with the thermocouple wire to which attachment is intended (see 6.16).

3.3.3.2 Contact Plating

3.3.3.2.1 Contact Plating (Solder Type, Except Class H)

Contacts shall be silver plated in accordance with ASTM B700 or gold plated in accordance with ASTM B488 over silver plating in accordance with ASTM B700, any type or grade. The resultant minimum thickness of contact plating shall be 100 μ in. Accessory members of the socket contacts need not be plated but shall meet the requirements for dissimilar metals specified in 3.3.1.

3.3.3.2.2 Contact Plating (Class H Connectors)

Contacts shall be gold plated to a thickness of not less than 50 μ in in accordance with ASTM B488, type 3, code C, over a suitable underplate. A silver underplate shall not be used and must be certified in the submittal for qualification.

3.3.3.2.3 Contact Plating (Thermocouple)

Thermocouple contacts shall be cadmium plated in accordance with AMS-QQ-P-416, or otherwise protected from corrosion. Accessory members of the socket contacts need not be plated but shall meet the requirements for dissimilar metals (see 3.3.1).

3.3.4 Dielectric Materials

3.3.4.1 Insert and Grommet

Insert and grommet materials shall be dielectric having hardness, electrical, and mechanical characteristics capable of meeting the requirements of this specification.

3.3.4.1.1 Connectors (Except Solder Contact Class A, B, C, H, K, and P)

The mating faces of pin inserts of solder contact connectors shall be a resilient material within a Shore A Durometer range of 60 to 85. On crimp contact front release connectors and rear release style P connectors, the Shore A Durometer range shall be 35 to 85 with a thickness of not less than 0.090 inch.

3.3.4.1.2 Class H

The hermetic sealing of class H connectors shall be accomplished by the use of vitreous material. The mating faces of pin inserts shall be resilient material within a Shore A Durometer range of 35 to 55.

3.3.5 Potting Molds

Potting molds shall be made of polyamide conforming to L-P-410. The molds shall incorporate a means for attachment to the connector and shall accept and bond to MIL-PRF-8516 or MIL-PRF-23586 potting material without treatment by the user.

3.3.6 Shells, Coupling Rings, and Backshells

- a. Connector shells and coupling rings, except for class D, H, and K, shall be made of aluminum alloys. Die castings, if used, shall conform to ASTM B85, composition number GPASC84B.
- b. Class D shells (no material designator) and coupling rings shall be made of a heat treated wrought aluminum alloy meeting the requirements of this specification.
- c. Class H and K shells and coupling rings shall be made of ferrous alloy.
- d. Class H, K, L, and U shells and coupling rings shall be made of nonmagnetic corrosion-resistant steel in accordance with AMS-QQ-S-763, 300 series, or ASTM A582, type XM-1 or 303. Class D and DJ shells (material designator "S") and coupling rings shall be made of nonmagnetic corrosion resistant steel in accordance with AMS-QQ-S-763, series 316 class.
- e. Backshells shall be fabricated and finished with the same materials as the connectors.

3.3.6.1 Finish

The resultant finish on all connectors shall be electrically conductive.

- a. The finish of class A, B, C, E, F, P, and R connectors with aluminum alloy shells, coupling rings, and external screws shall be cadmium plated in accordance with AMS-QQ-P-416, type II, and class 3. A preliminary plating of another metal is permissible. The resultant finish on cadmium plate connectors shall be olive drab (light to dark). Stainless steel in accordance with AMS-QQ-S-763 is an acceptable alternative for external screws.
- b. The finish of class D connectors with wrought aluminum shells and coupling rings, class W and X connectors with aluminum alloy shells and coupling rings, class DJ connectors with wrought aluminum shells and backshell assembly, and external screws for these classes shall be cadmium plated in accordance with AMS-QQ-P-416, type II, and class 3 over nickel. The resultant finish on cadmium plated connectors shall be olive drab (light to dark). Stainless steel in accordance with AMS-QQ-S-763 is an acceptable alternative for external screws.
- c. The finish of class H connectors with ferrous alloy shells and coupling rings, series II and series III class K connectors with ferrous alloy shells and coupling rings, and external screws shall be electroless nickel in accordance with ASTM B733, class 3 or 4. A preliminary plating of another metal is permissible. Stainless steel in accordance with AMS-QQ-S-763 is an acceptable alternative for external screws.
- d. The finish of series I class K connectors with ferrous alloy shells and coupling rings, series II and III class KT connectors with ferrous alloy shells and coupling rings, and external screws for these classes shall be cadmium plate in accordance with AMS-QQ-P-416, type II, and class 3. The resultant finish on cadmium plated connectors shall be olive drab (light to dark). Stainless steel in accordance with AMS-QQ-S-763 is an acceptable alternative for external screws.
- e. The finish of class DS and DJS connectors with corrosion-resistant steel shells and coupling rings shall be cadmium plate in accordance with AMS-QQ-P-416, type II, class 3, and color-black. All other classes of connectors with corrosion-resistant steel shells and coupling rings shall be passivated.
- f. The finish of class HT connectors with ferrous alloy shells and coupling rings, and external screws shall be electrically conductive fused tin. Stainless steel in accordance with AMS-QQ-S-763 is an acceptable alternative for external screws.
- g. The finish of class L and U connectors with aluminum alloy shells and coupling rings, and external screws shall be electroless nickel in accordance with ASTM B733, class 3 or 4. Stainless steel in accordance with AMS-QQ-S-763 is an acceptable alternative for external screws.

- h. The finish for class DT and WT connectors with aluminum alloy shells and coupling rings shall be nickel fluorocarbon polymer in accordance with AMS2454 over a suitable underplate.
- i. The finish for class DY and WY connectors with aluminum alloy shells and coupling rings shall be pure dense electrodeposited aluminum in accordance with MIL-DTL-83488, type II. Final finish shall be non-reflective and electrically conductive.
- j. The finish for class DZ and WZ connectors with aluminum alloy shells and coupling rings shall be zinc nickel in accordance with ASTM B841 over suitable underplate. Final finish shall be black and electrically conductive.
- k. The finish for class DSN connectors with corrosion resistant steel shells and coupling rings shall be electrodeposited nickel in accordance with AMS-QQ-N-290, Class 2 or electroless nickel in accordance with AMS-C-26074 and be electrically conductive.
- l. The finish of class DV connectors with aluminum alloy shells and coupling rings shall be tin-zinc in accordance with AMS2434, Type 2, Grade A or B, over suitable underplate. Color shall be gold to bronze, including pale green to olive and brown and be non-reflective (some iridescence permitted but not preferred). Final finish shall be electrically conductive and meet the requirements of 3.33 (hexavalent chromium testing).

3.4 Design and Construction

Connectors and accessories shall be designed and constructed to withstand handling incident to installation and maintenance in service. The connectors and accessories shall conform to the following:

Crimp contact connectors, back end configuration except AS34021, AS34121, AS34521, AS34021, and AS34121

Figure 1

Connector, front release, series II interface dimensions

Figures 2 and 3

Connector, rear release series III, and hermetic, interface dimensions

Figures 4, 5, and 6

Connector solder contact (pin and socket) series I configuration

Figure 7

Accessories to be used with series II and series III connectors

AS85049

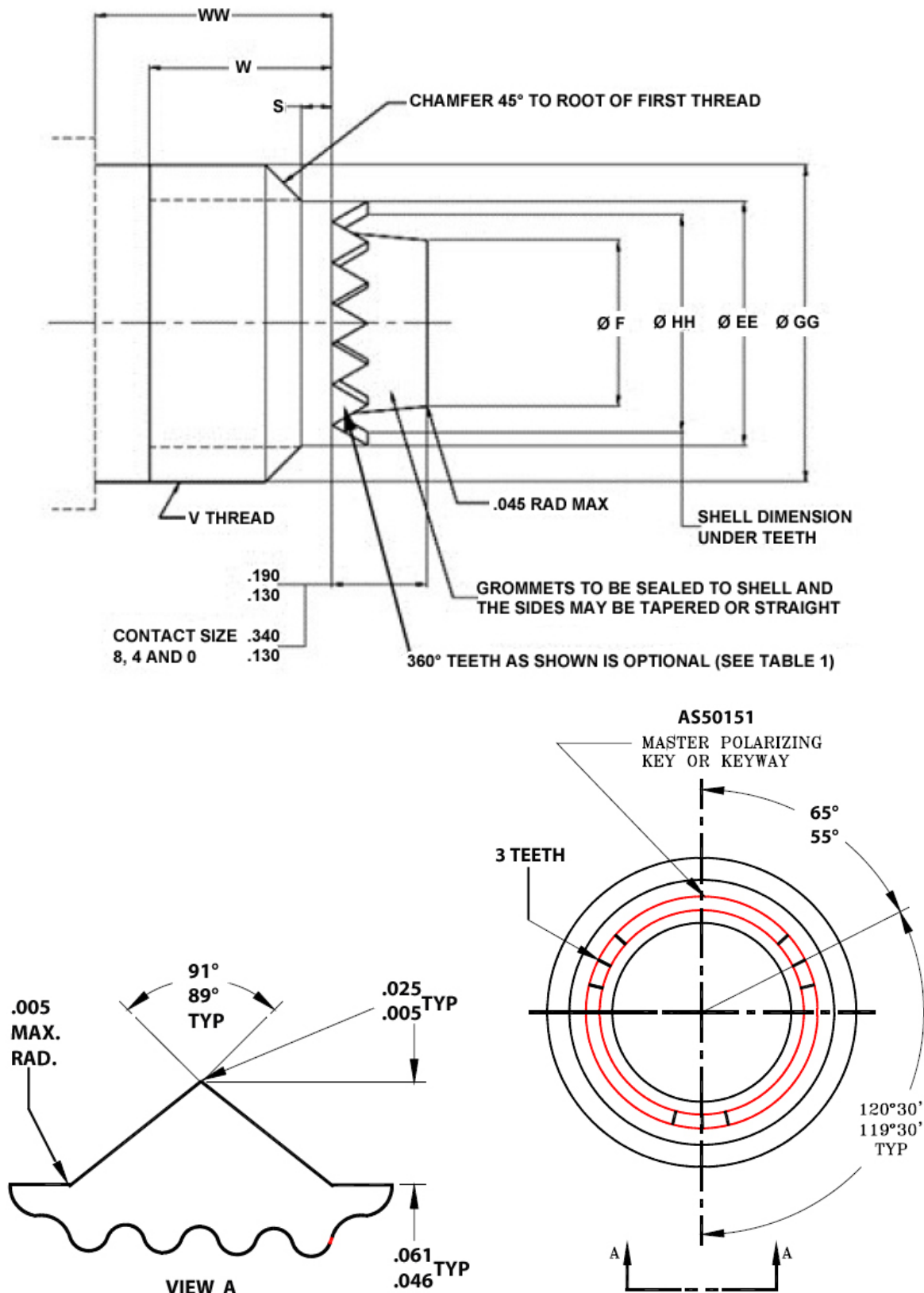


Figure 1 - Crimp contact connector back end configuration except AS34021, AS34121, and AS34521

Table 1 - Figure 1 dimensions

SHELL SIZE	V THREAD CLASS 2A	EE DIA	F DIA 1/	GG +0.000 -0.010	HH ±0.005	S 0.005	W MIN PERF. THREAD	WW MIN 2/	# OF TEETH (OPTIONAL 360 DEGREE FIGURE 1 DESIGN)
8S	.500-20 UNF	0.426/0.419	0.275/0.305	0.500	0.368	0.065	0.290	0.310	12
10S, 10SL	.625-24 UNEF	0.562/0.555	0.380/0.405	0.625	0.502				15
12S, 12	.750-20 UNEF	0.679/0.672	0.516/0.549	0.750	0.618				21
14, 14S	.875-20 UNEF	0.804/0.797	0.590/0.665	0.875	0.743				24
16, 16S	1.000-20 UNEF	0.929/0.922	0.715/0.790	1.000	0.868				30
18	1.0625-18 UNEF	0.984/0.977	0.794/0.869	1.062	0.924				33
20	1.1875-18 UNEF	1.109/1.102	0.919/0.994	1.187	1.049				36
22	1.3125-18 UNEF	1.234/1.227	1.044/1.119	1.312	1.174				39
24	1.4375-18 UNEF	1.359/1.352	1.159/1.244	1.437	1.299				42
28	1.750-18 UNS	1.613/1.603	1.394/1.465	1.750	1.520	0.095	0.467	0.487	54
32	2.000-18 UNS	1.863/1.853	1.640/1.715	2.000	1.770				63
36	2.250-16 UN	2.113/2.103	1.855/1.930	2.250	1.985				72
40	2.500-16 UN	2.363/2.353	2.070/2.145	2.500	2.200				81
44	2.750-16 UN	2.613/2.603	2.325/2.400	2.750	2.455				87
48	3.000-16 UN	2.858/2.848	2.575/2.650	3.000	2.705				96

1/ Diameter of any exposed portion of the grommet.

2/ Length to accommodate accessories.

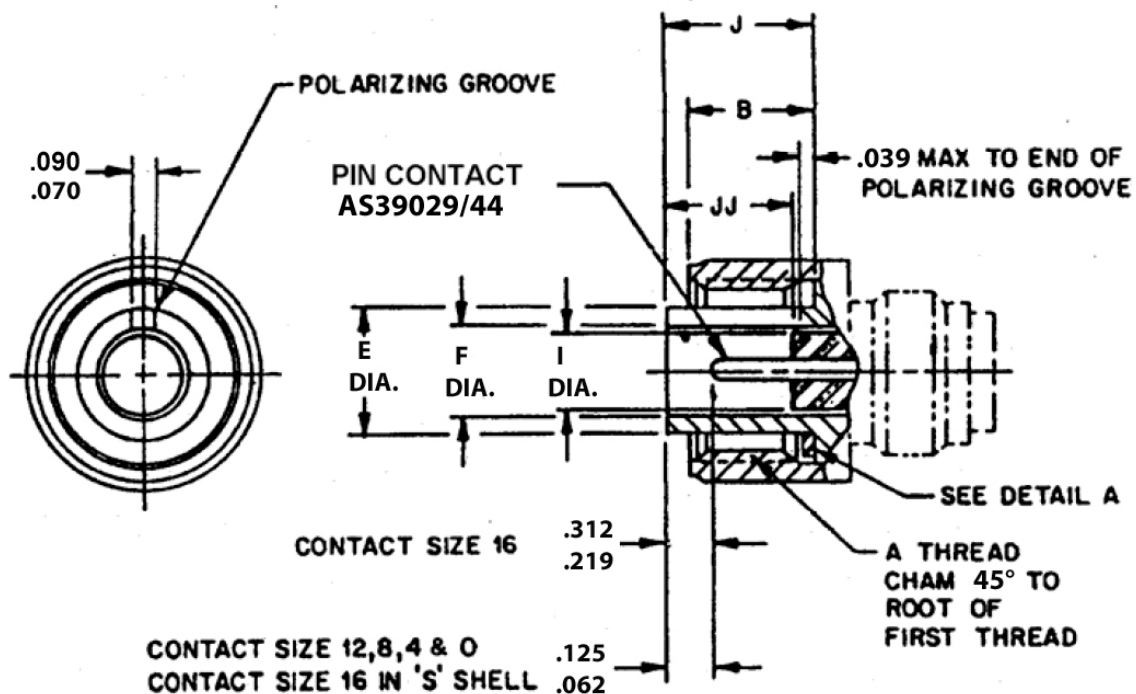


Figure 2 - Connector, plug, front release, series II, interface dimensions

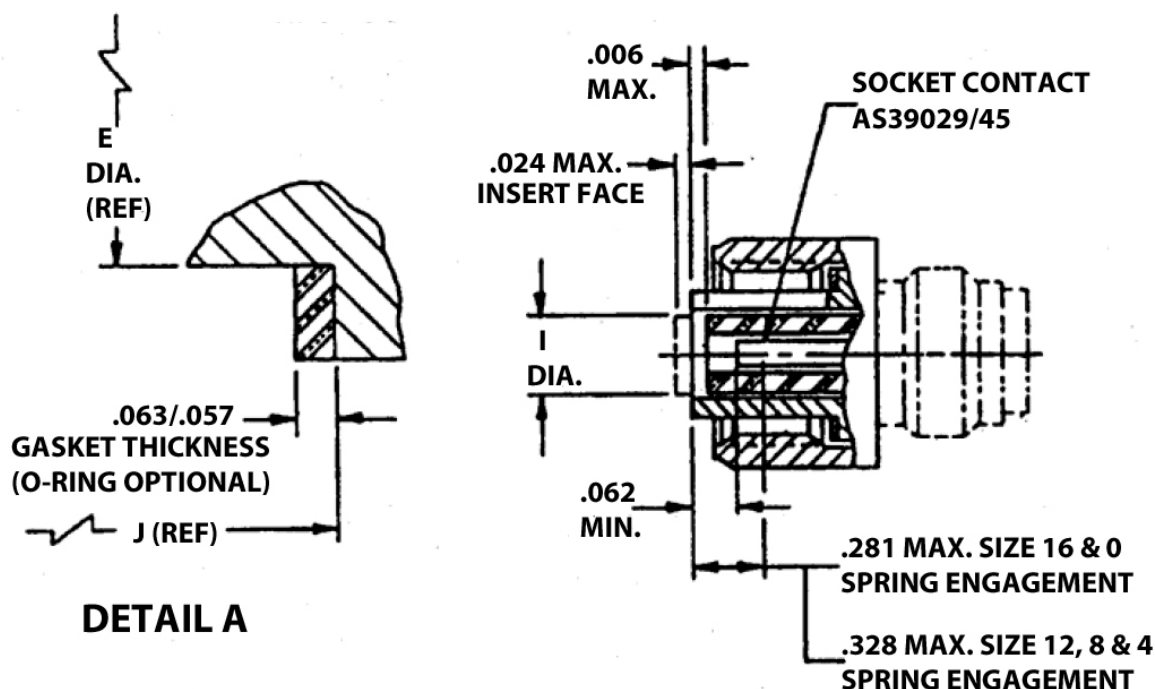


Figure 2 - Connector, plug, front release, series II, interface dimensions (continued)

Table 2 - Figure 2 dimensions

SHELL SIZE	A THREAD CLASS 2B	B DIA +0.000 -0.062	E DIA 1/ +0.000 -0.010	F DIA 1/ +0.015 -0.000	I +0.000 -0.020	J ±0.005	JJ ±0.015																														
8S	.500-28 UNEF	0.414	0.365	0.252	0.250	0.570	0.501																														
10S	.625-24 UNEF		0.440	0.323	0.320																																
10SL			0.446	0.398	0.397																																
12S	.750-20 UNEF	0.664	0.555	0.450	0.448	0.757	0.689																														
12	.875-20 UNEF	0.414	0.675	0.526	0.525	0.570	0.501																														
14S		0.664				0.757	0.689																														
14	1.000-20 UNEF	0.414	0.805	0.651	0.650	0.570	0.501																														
16S		0.664				0.930	0.776	0.770	0.757	0.689																											
16											1.050	0.932	0.925																								
18														1.175	1.026	1.020																					
20																	1.300	1.151	1.145																		
22																				1.520	1.370	1.365															
24																							1.770	1.620	1.615												
28																										1.980	1.838	1.830									
32																													2.230	2.057	2.045						
36																																2.485	2.310	2.300			
40																																			2.735	2.560	2.550
44																																					
48																																					

^{1/} On shell size 10SL "E" diameter tolerance is +0.000/-0.006 and "F" diameter tolerance is +0.006/-0.000.

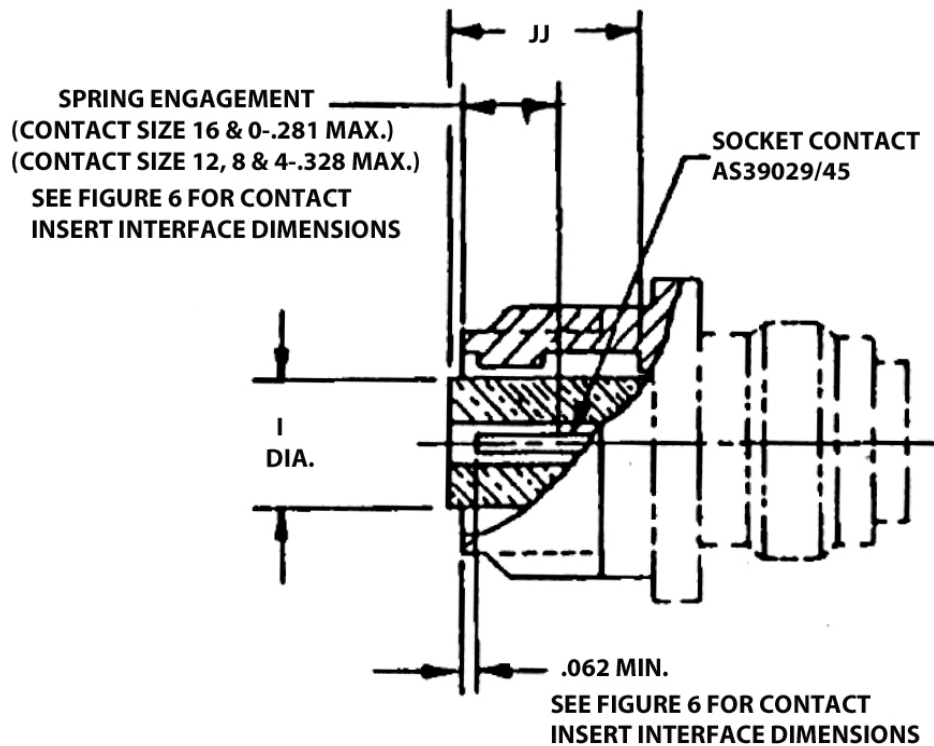
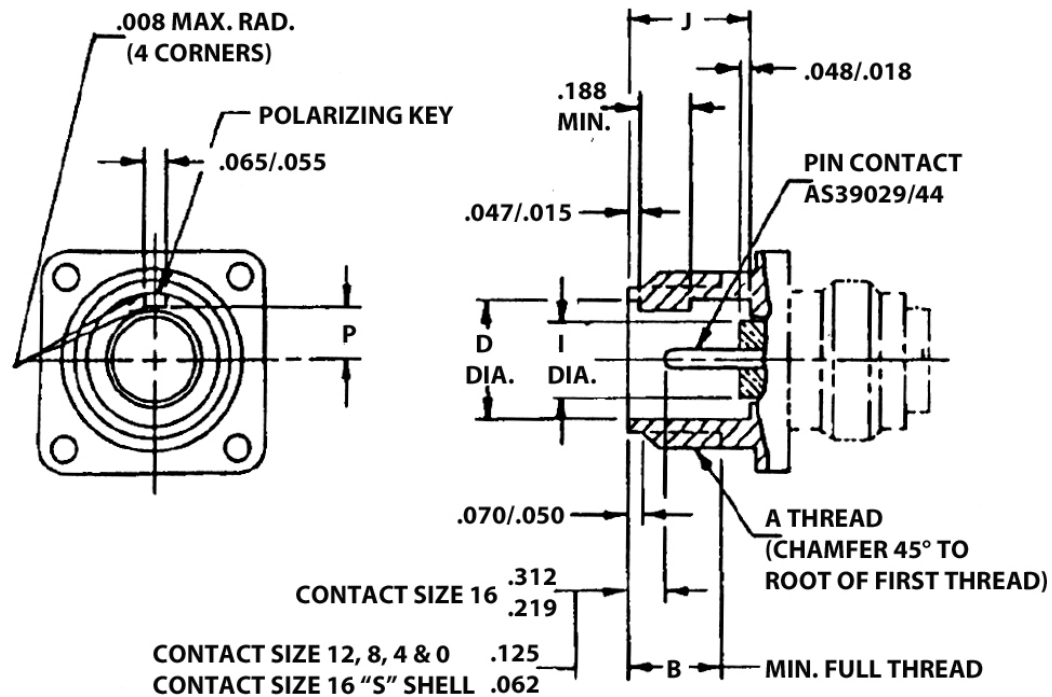
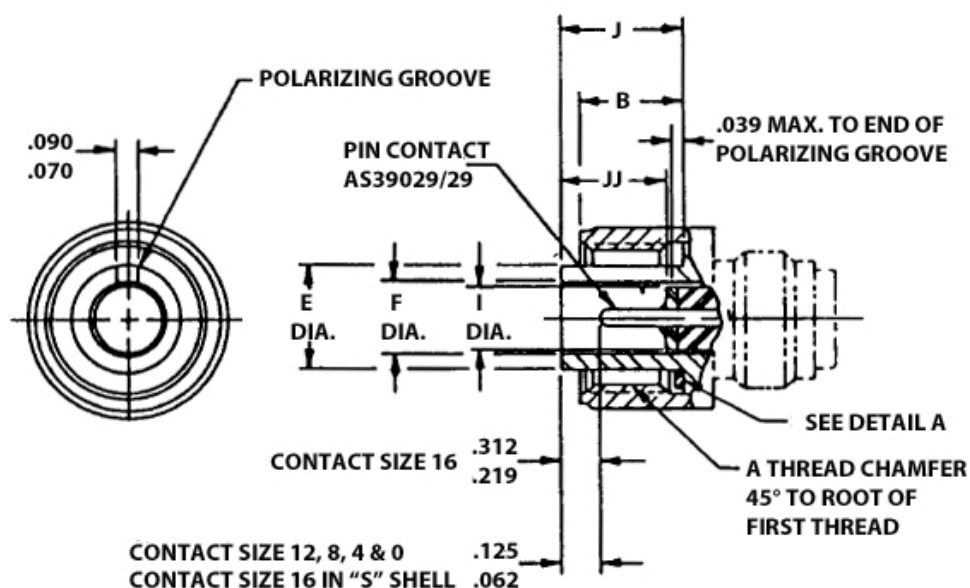


Figure 3 - Connector, receptacle, front release,
series II interface dimensions

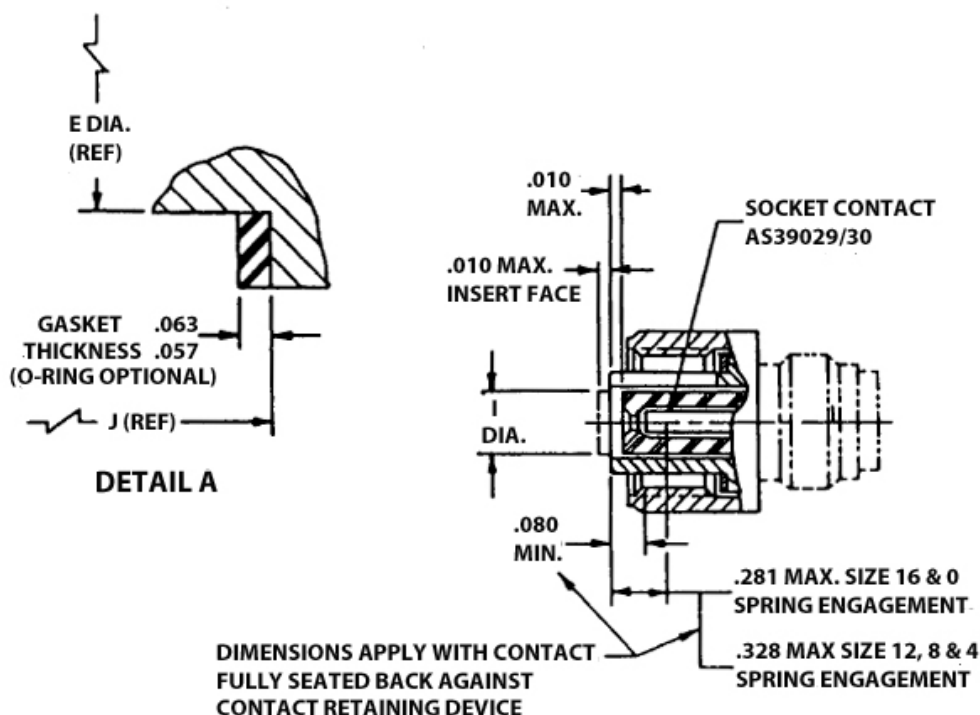
Table 3 - Figure 3 dimensions

SHELL SIZE	A THREAD CLASS 2A	B MIN THREAD	D DIA +0.015 -0.000	I DIA +0.000 -0.020	J ±0.005	JJ ±0.015	P +0.010 -0.000
8S	.500-28 UNEF	0.375	0.370	0.250	0.536	0.543	0.130
10S	.625-24 UNEF		0.448	0.320			0.165
10SL				0.397			
12S	.750-20 UNEF	0.625	0.558	0.448	0.536	0.543	0.224
12					0.724	0.731	
14S	.875-20 UNEF	0.375	0.678	0.525	0.536	0.543	0.263
14		0.625			0.724	0.731	
16S	1.000-20 UNEF	0.375	0.808	0.650	0.536	0.543	0.325
16		0.625			0.724	0.731	
18	1.125-18 UNEF	0.625	0.933	0.770	0.724	0.731	0.385
20	1.250-18 UNEF		1.053	0.925			0.463
22	1.375-18 UNEF		1.178	1.020			0.510
24	1.500-18 UNEF		1.303	1.145			0.573
28	1.750-18 UNS		1.523	1.365			0.683
32	2.000-18 UNS		1.773	1.615			0.808
36	2.250-16 UN		1.985	1.830			0.915
40	2.500-16 UN		2.237	2.045			1.023
44	2.750-16 UN		2.492	2.300			1.150
48	3.000-16 UN		2.742	2.550			1.275



NOTE: See Figure 6 for contact insert interface dimensions.

Figure 4 - Connector, plug, rear release, series III, interface dimensions



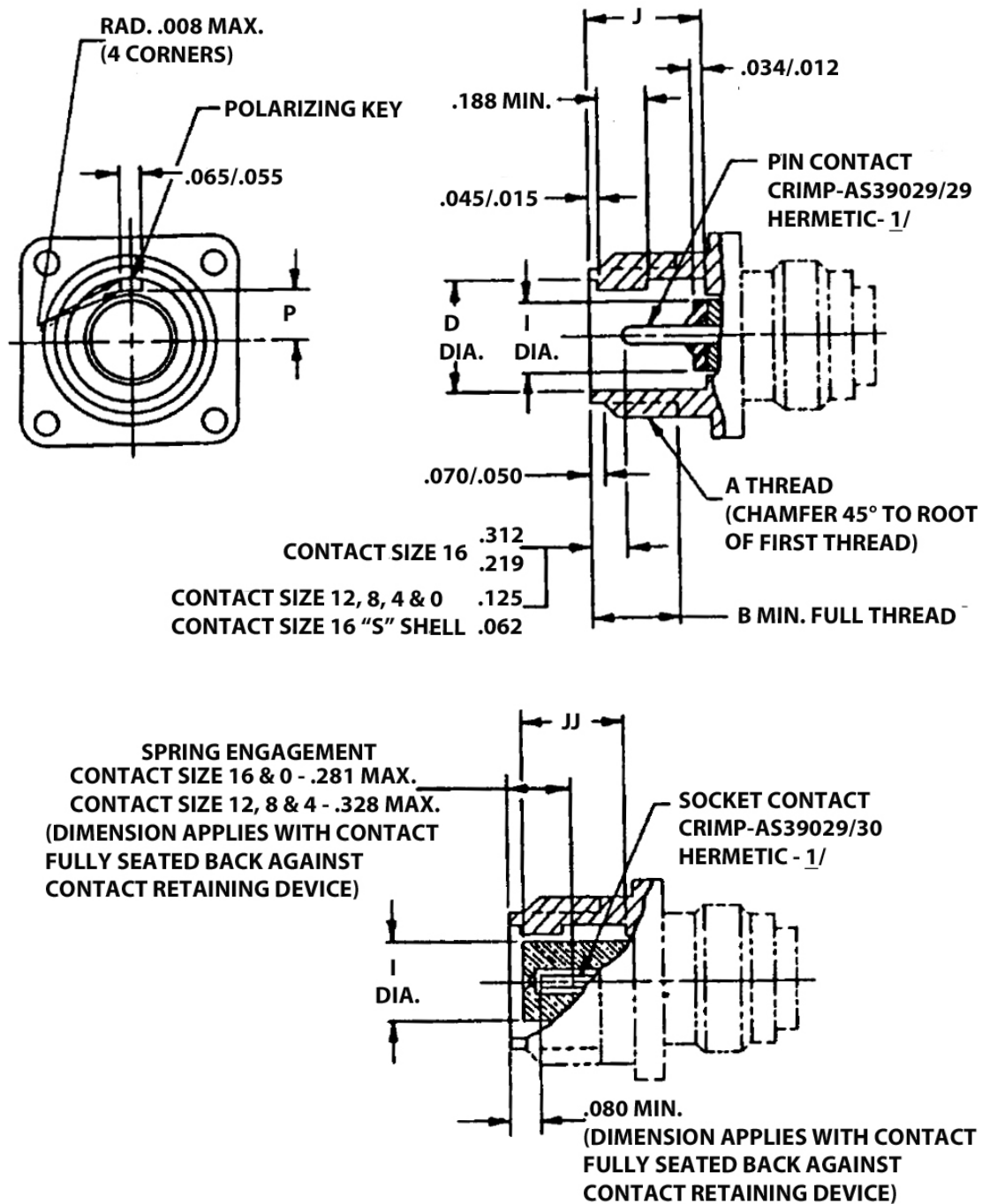
NOTE: See Figure 6 for contact insert interface dimensions.

Figure 4 - Connector, plug, rear release, series III, interface dimensions (continued)

Table 4 - Figure 4 dimensions

SHELL SIZE	A THREAD CLASS 2B	B DIA +0.000 -0.062	E DIA 1/ +0.000 -0.010	F DIA 1/ +0.015 -0.000	I +0.000 -0.020	J ±0.005	JJ ±0.015
8S	.500-28 UNEF	0.414	0.365	0.252	0.250	0.570	0.510
10S	.625-24 UNEF		0.440	0.323	0.320		
10SL			0.446	0.398	0.397		
12S	.750-20 UNEF	0.664	0.555	0.450	0.448	0.757	0.698
12							
14S	.875-20 UNEF	0.414	0.675	0.526	0.525	0.570	0.510
14		0.664				0.757	0.698
16S	1.000-20 UNEF	0.414	0.805	0.651	0.650	0.570	0.501
16		0.664					
18	1.125-18 UNEF		0.930	0.776	0.770		
20	1.250-18 UNEF		1.050	0.932	0.925		
22	1.375-18 UNEF		1.175	1.026	1.020		
24	1.500-18 UNEF		1.300	1.151	1.145		
28	1.750-18 UNS		1.520	1.370	1.365		
32	2.000-18 UNS		1.770	1.620	1.615		
36	2.250-16 UN		1.980	1.838	1.830		
40	2.500-16 UN		2.230	2.057	2.045		
44	2.750-16 UN		2.485	2.310	2.300		
48	3.000-16 UN		2.735	2.560	2.550		

1/ On shell size 10SL "E" diameter tolerance is +0.000/-0.006 and "F" diameter tolerance is +0.006/-0.000.



1/ Hermetic connector contacts shall be fixed solder type contacts with mating end conforming to Figure 7 socket or pin detail as required.

NOTE: See Figure 6 for contact insert interface dimensions.

Figure 5 - Connector, receptacle, rear release, series III and hermetic interface dimensions