

# MIL-DTL-83723 Series III Features and Application Bayonet and Threaded Coupling



## Features and Application

MIL-DTL-83723 Series III family offers connectors with bayonet and threaded coupling including lanyard-release quick-disconnects. These connectors combine the best features of MIL-DTL-26500 and NAS 1599 miniature connector specifications. They are intermateable with both bayonet and threaded 26500 connectors (exception: shell size 8, threaded coupling only) and have the added advantage provided by the rear-release contact retention system.

AE833 connectors are widely used on commercial, military and aerospace systems requiring general-purpose, miniature cylindrical bayonet or threaded coupling connectors. In addition, Series III threaded connectors with self-locking plugs are well suited for engine applications.

This family of connectors (bayonet as well as threaded) is offered in wall mount receptacles as well as jam nut mounted receptacles which incorporate “O” ring seals, designed for rear panel “D” hole mounting.

Series III bayonet-coupling plugs are available in two designs - with and without RFI grounding. Threaded coupling plugs are offered with and without RFI grounding, self-locking and RFI/self-locking. In addition we offer quick-disconnect (lanyard release) plugs, which mate with threaded receptacles via an adapter.

Thirty-one insert arrangements per MIL-STD-1554 are tooled and qualified to MIL-DTL-83723 Series III, utilizing 2 to 61 M39029 contacts. Contacts come in sizes 20, 16 and 12, terminating wire sizes from 24 to 12 gauge.

These connectors are available in wide range of shell materials and finishes. Aluminum shells are offered in electroless nickel, olive drab cadmium and black anodic. Other finishes such as zinc cobalt are available upon request to commercial callouts only. In addition, we offer passivated stainless steel shells with both standard and firewall-rated inserts, and for highly corrosive environments, nickel-aluminum-bronze shells with standard environment-resisting inserts (commercial callouts only).

**Universal I/R Tool** – A single, expendable plastic tool is used for both insertion and removal of contacts.

**Shell Polarization** – Alternate key/keyway positions prevent cross mating of adjacent connectors having same insert arrangement.

**Closed-Entry Socket Insert** – Hard dielectric socket face has lead-in chamfers for positive alignment of pins (even partially bent within pre-established limits) with sockets.

**Interfacial Pin Insert Seal** – Raised moisture barriers around each pin, which mate into lead-in chamfers of hard face socket insert, provide individual contact sealing. Interfacial seal is never touched by service tools.

**Elastomer Wire Sealing Grommet** – Sealing over a wide range of wire diameters is assured by a triple wire seal in each cavity at the rear of the connector.

**Superior Contact Stability** – Rear release crimp contact system features a stamped beryllium-copper retaining clip captivated by molded-in shoulders of each contact cavity in the insulator. A rear-inserted M81969 plastic tool expands the tines beyond the shoulder, releasing the contact.





# MIL-DTL-83723 Series III Performance Specifications Bayonet and Threaded Coupling

## Performance Specifications

### Operating Temperature Range

Classes A and R: -65°C to +200°C (-85°F to +392°F)  
 Class W: -65°C to +175°C (-85°F to +347°F)  
 Classes G and K: -65°C to +200°C (-85°F to +392°F)  
 Classes N and S: -65°C to +200°C (-85°F to +392°F)

### Material and Finish Data (Class)

A – aluminum shell, black anodized finish  
 G – stainless steel shell, passivated  
 K – stainless steel shell, passivated, firewall  
 R – aluminum shell, electroless nickel finish  
 S – stainless steel shell, passivated, firewall, and 360° teeth  
 W – aluminum shell, olive drab cadmium over nickel base  
 N – stainless steel shell, electrodeposited nickel, firewall, and 360° teeth

### Corrosion Resistance

Class W withstands 500-hour salt spray.  
 Class R withstands 48-hour salt spray.

### Environmental Seal

Wired, mated connectors with specified accessories attached, shall meet the altitude-immersion test specified by MIL-DTL-83723 Series III.

### Fluid Resistance

Connectors resist specified immersions in MIL-PRF-7808 (lubricating oil), MIL-PRF-23699 (lubricating oil), MIL-PRF-5606 (hydraulic fluid), M2-V Chevron oil, Coolanol 25, MIL-DTL-83133 (turbine fuel JP-8), MIL-DTL-5624 (turbine fuels JP-4 and JP-5), SAE-AMS1424 Type I (defrosting fluid), and other solvents and cleaning agents.

### Voltage Rating

| Service Rating | Suggested Operating Voltage* |      | Test Voltage | Test Voltage | Test Voltage | Test Voltage |
|----------------|------------------------------|------|--------------|--------------|--------------|--------------|
|                | (Sea Level)                  |      | Sea Level    | 50,000 Ft.   | 70,000 Ft.   | 110,000 Ft.  |
|                | AC (RMS)                     | DC   | V RMS        | V RMS        | V RMS        | V RMS        |
| I              | 600                          | 850  | 1500         | 500          | 375          | 200          |
| II             | 900                          | 1250 | 2300         | 750          | 500          | 200          |

\* To be used by designer only as a guide.

### Durability

Mated connectors withstand a minimum of 500 mating cycles for bayonet coupling straight plug (M83723/75, 76); 250 mating cycles for bayonet coupling RFI plug (M83723/77, 78); and 250 cycles for all threaded coupling plugs (M83723/86, 87, 91, 92, 95, 96, 97, 98).

### Shock and Vibration Requirements

Wired, mated connectors shall not be damaged, coupling ring shall not loosen, and there shall be no interruption of electrical continuity longer than one microsecond when subjected to the following:

### Shock

Mated connectors withstand a pulse of approximate half sine wave of 300 G ± 15 percent magnitude with duration of 3 ± 1 milliseconds applied in three axes.

### Vibration

Mated connectors withstand the following vibration levels:

- Random vibration per MIL-STD-1344, method 2005, test condition VI, letter J.

### Shielding Effectiveness

RFI attenuation at the specified frequency meets the requirements of MIL-DTL-83723 Series III.

- RFI shielding effectiveness of mated connectors with RFI backshells is measured in a triaxial radio frequency leakage fixture.

### Shell-to-Shell Conductivity (Except class A)

- With RFI spring fingers, the maximum potential drop shall not exceed 5 millivolts.
- Without spring fingers, the maximum potential drop shall not exceed 200 millivolts.

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# MIL-DTL-83723 Series III Part Number Development Bayonet Coupling



## Military and Aero-Electric Part Number Development

|  |                |           |          |           |           |          |             |
|--|----------------|-----------|----------|-----------|-----------|----------|-------------|
| <b>Mil. Prefix</b>   | <b>M83723/</b> | <b>71</b> | <b>R</b> | <b>12</b> | <b>12</b> | <b>N</b> |             |
| <b>Aero Prefix</b>   | <b>AE833</b>   | <b>71</b> | <b>R</b> | <b>12</b> | <b>12</b> | <b>N</b> | <b>-340</b> |
| <b>Shell type</b>  |                |           |          |           |           |          |             |
| 71 = Wall mount receptacle with socket contacts  |                |           |          |           |           |          |             |
| 72 = Wall mount receptacle with pin contacts   |                |           |          |           |           |          |             |
| 73 = Jam nut receptacle with socket contacts   |                |           |          |           |           |          |             |
| 74 = Jam nut receptacle with pin contacts  |                |           |          |           |           |          |             |
| 75 = Straight plug with socket contacts  |                |           |          |           |           |          |             |
| 76 = Straight plug with pin contacts   |                |           |          |           |           |          |             |
| 77 = RFI grounding plug with socket contacts   |                |           |          |           |           |          |             |
| 78 = RFI grounding plug with pin contacts  |                |           |          |           |           |          |             |
| <b>Class (Material and Finish)</b>   |                |           |          |           |           |          |             |
| A = Aluminum shell, black anodized finish (not available in 77 and 78 RFI plugs)                                     |                |           |          |           |           |          |             |
| G = Stainless steel shell, passivated  |                |           |          |           |           |          |             |
| R = Aluminum shell, electroless nickel finish  |                |           |          |           |           |          |             |
| W = Aluminum shell, olive drab cadmium over electroless nickel finish  |                |           |          |           |           |          |             |
| <b>Shell Size (SS)</b>   |                |           |          |           |           |          |             |
| 8, 10, 12, 14, 16, 18, 20, 22 or 24  |                |           |          |           |           |          |             |
| <b>Insert Arrangement</b>  |                |           |          |           |           |          |             |
| See pages 148 and 149  |                |           |          |           |           |          |             |
| <b>Polarization (Keying)</b>   |                |           |          |           |           |          |             |
| N = Normal   |                |           |          |           |           |          |             |
| 6, 7, 8, 9 or Y (Alternate keyed positions, Y is not available in SS 8)  |                |           |          |           |           |          |             |
| 1, 2, 3, 4 or 5 (Clocked insert polarizations within normally keyed shell, not approved for new design, n/a in SS 8) |                |           |          |           |           |          |             |
| <b>Modification (applies to Aero part numbers only)</b>  |                |           |          |           |           |          |             |
| 01 = Less contacts (Part is bagged and tagged, but not marked with 01)   |                |           |          |           |           |          |             |
| 340 = Connector kitted with M85049/31-XXX E-nut  |                |           |          |           |           |          |             |
| 341 = Connector kitted with M85049/52-1-XXX straight clamp   |                |           |          |           |           |          |             |
| 342 = Connector kitted with M85049/51-1-XXX right angle clamp  |                |           |          |           |           |          |             |
| Consult factory for other modifications  |                |           |          |           |           |          |             |

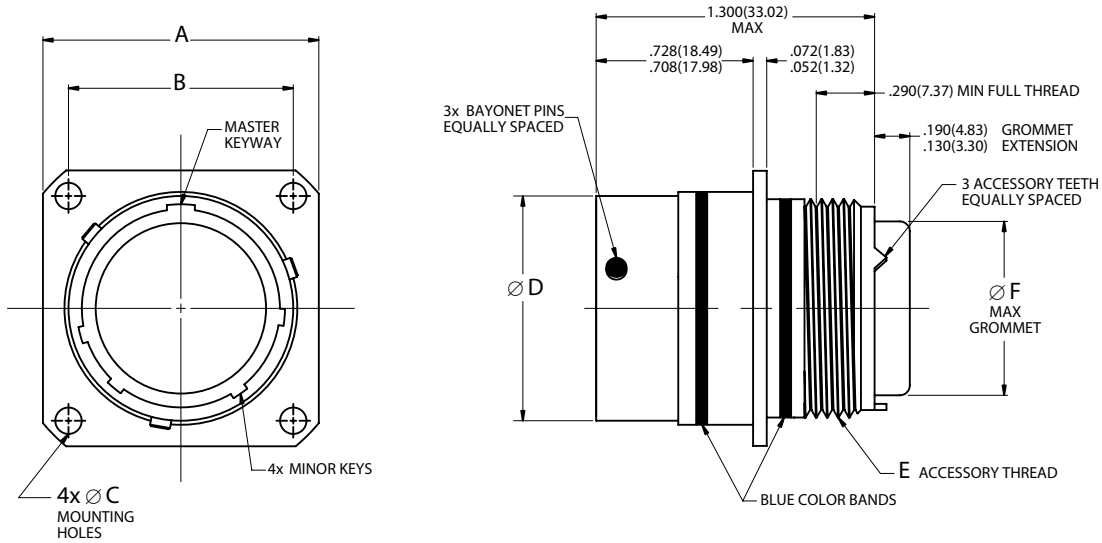
**Note 1:** Each connector is furnished with contacts unless ordered less contacts (L/C) as follows: One spare contact for inserts requiring 2 to 26 of each contact and two spares for inserts with 27 or more of each size, and a minimum of one sealing plug up to 15% of the number of contacts of each size. In addition, one insertion/removal tool of each size is included.

**Note 2:** Proper part number marking has no “0” in front of single digit shell size (8), but it does include the “0” in front of single digit layout. Examples: M83723/72W803N and M83723/77G10056. Please note that in this series “N” for normal is included in part number marking.



**M83723/71, 72**  
**Wall Mounting Receptacle**  
**AE83371, 72**

**Bayonet Coupling, Crimp Removable, Rear Release**



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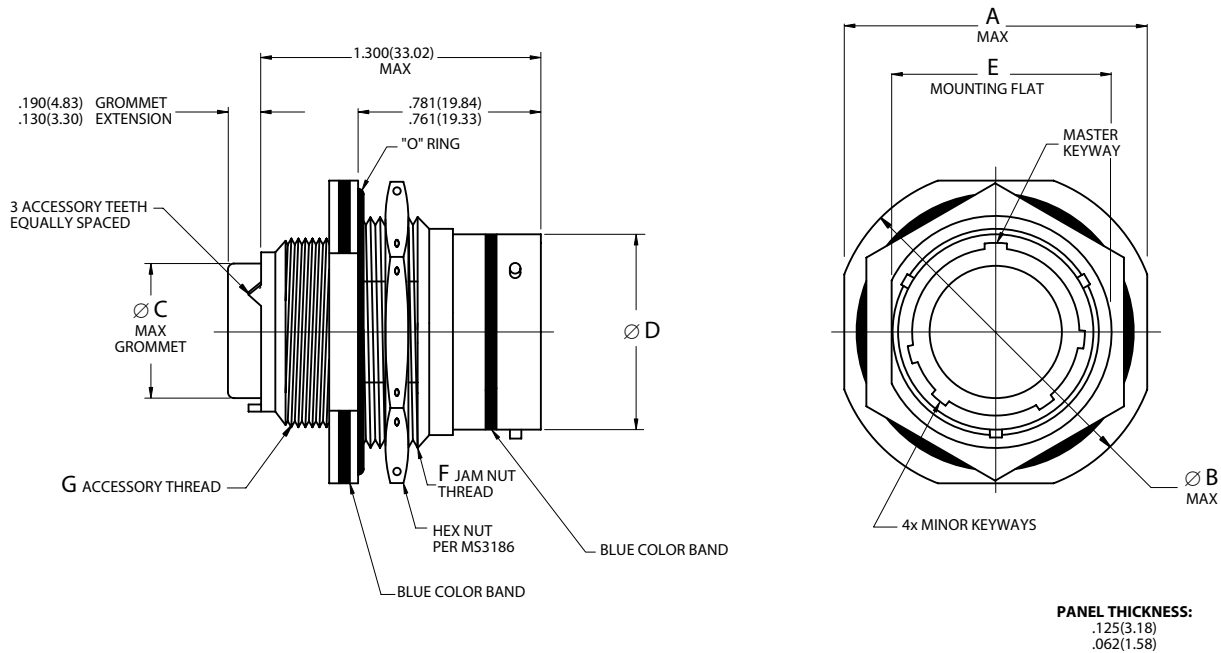
| Shell Size | A          |           | B     |       | $\varnothing$ C |           | $\varnothing$ D |       | E                            | $\varnothing$ F |       |
|------------|------------|-----------|-------|-------|-----------------|-----------|-----------------|-------|------------------------------|-----------------|-------|
|            | $\pm$ .005 | $\pm$ .13 | (TP)  |       | $\pm$ .005      | $\pm$ .13 | +0.000          | +0.00 | Accessory Thread<br>Class 2A | Maximum         |       |
|            | inch       | mm        | inch  | mm    | inch            | mm        | inch            | mm    |                              | inch            | mm    |
| 8          | .812       | 20.62     | .594  | 15.09 | .120            | 3.05      | .536            | 13.61 | 1/2-20UNF                    | .305            | 7.75  |
| 10         | .937       | 23.80     | .719  | 18.26 | .120            | 3.05      | .659            | 16.74 | 5/8-24UNEF                   | .405            | 10.29 |
| 12         | 1.031      | 26.19     | .812  | 20.62 | .120            | 3.05      | .829            | 21.06 | 3/4-20UNEF                   | .531            | 13.49 |
| 14         | 1.125      | 28.58     | .906  | 23.01 | .120            | 3.05      | .898            | 22.81 | 7/8-20UNEF                   | .665            | 16.89 |
| 16         | 1.250      | 31.75     | .969  | 24.61 | .120            | 3.05      | 1.025           | 26.04 | 1-20UNEF                     | .790            | 20.07 |
| 18         | 1.343      | 34.11     | 1.062 | 26.97 | .120            | 3.05      | 1.131           | 28.73 | 1-1/16-18UNEF                | .869            | 22.07 |
| 20         | 1.437      | 36.50     | 1.156 | 29.36 | .120            | 3.05      | 1.256           | 31.90 | 1-3/16-18UNEF                | .994            | 25.25 |
| 22         | 1.562      | 39.67     | 1.250 | 31.75 | .120            | 3.05      | 1.381           | 35.08 | 1-5/16-18UNEF                | 1.119           | 28.42 |
| 24         | 1.703      | 43.26     | 1.375 | 34.93 | .149            | 3.78      | 1.506           | 38.25 | 1-7/16-18UNEF                | 1.244           | 31.60 |

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**M83723/73, 74**  
**Jam Nut Receptacle**  
**AE83373, 74**



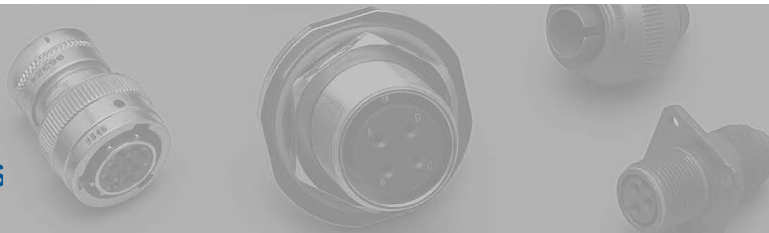
**Bayonet Coupling, Crimp Removable, Rear Release**



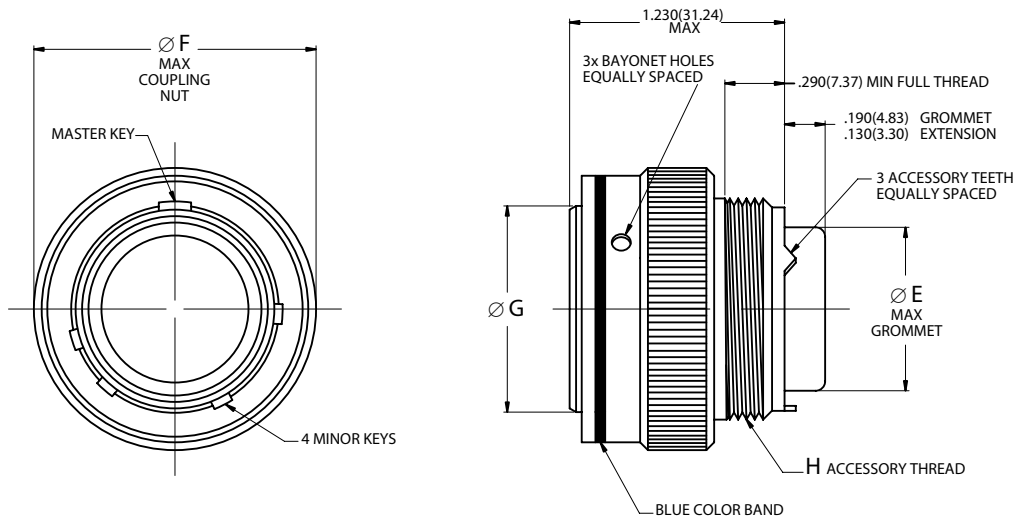
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| Shell Size | A       |       | Ø B     |       | Ø C     |       | Ø D             |                | E     |       | F                          | G                            |
|------------|---------|-------|---------|-------|---------|-------|-----------------|----------------|-------|-------|----------------------------|------------------------------|
|            | Maximum |       | Maximum |       | Maximum |       | +0.00<br>-0.005 | +0.00<br>-0.13 | ±.003 | ±.08  | Jam Nut Thread<br>Class 2A | Accessory Thread<br>Class 2A |
|            | inch    | mm    | inch    | mm    | inch    | mm    | inch            | mm             | inch  | mm    |                            |                              |
| 8          | .979    | 24.87 | 1.068   | 27.13 | .305    | 7.75  | .536            | 13.61          | .593  | 15.06 | 5/8-20UN                   | 1/2-20UNF                    |
| 10         | 1.104   | 28.04 | 1.192   | 30.28 | .405    | 10.29 | .659            | 16.74          | .718  | 18.24 | 3/4-20UNEF                 | 5/8-24UNEF                   |
| 12         | 1.291   | 32.79 | 1.380   | 35.05 | .531    | 13.49 | .829            | 21.06          | .905  | 22.99 | 15/16-20UNEF               | 3/4-20UNEF                   |
| 14         | 1.391   | 35.33 | 1.505   | 38.23 | .665    | 16.89 | .898            | 22.81          | .968  | 24.59 | 1-20UNEF                   | 7/8-20UNEF                   |
| 16         | 1.516   | 38.51 | 1.630   | 41.40 | .790    | 20.07 | 1.025           | 26.04          | 1.093 | 27.76 | 1-1/8-20UN                 | 1-20UNEF                     |
| 18         | 1.641   | 41.68 | 1.756   | 44.60 | .869    | 22.07 | 1.131           | 28.73          | 1.217 | 30.91 | 1-1/4-18UNEF               | 1-1/16-18UNEF                |
| 20         | 1.766   | 44.86 | 1.860   | 47.24 | .994    | 25.25 | 1.256           | 31.90          | 1.342 | 34.09 | 1-3/8-18UNEF               | 1-3/16-18UNEF                |
| 22         | 1.954   | 49.63 | 2.086   | 52.98 | 1.119   | 28.42 | 1.381           | 35.08          | 1.467 | 37.26 | 1-1/2-18UNEF               | 1-5/16-18UNEF                |
| 24         | 2.079   | 52.81 | 2.160   | 54.86 | 1.244   | 31.60 | 1.506           | 38.25          | 1.592 | 40.44 | 1-5/8-18UNEF               | 1-7/16-18UNEF                |

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**Bayonet Coupling, Crimp Removable, Rear Release**



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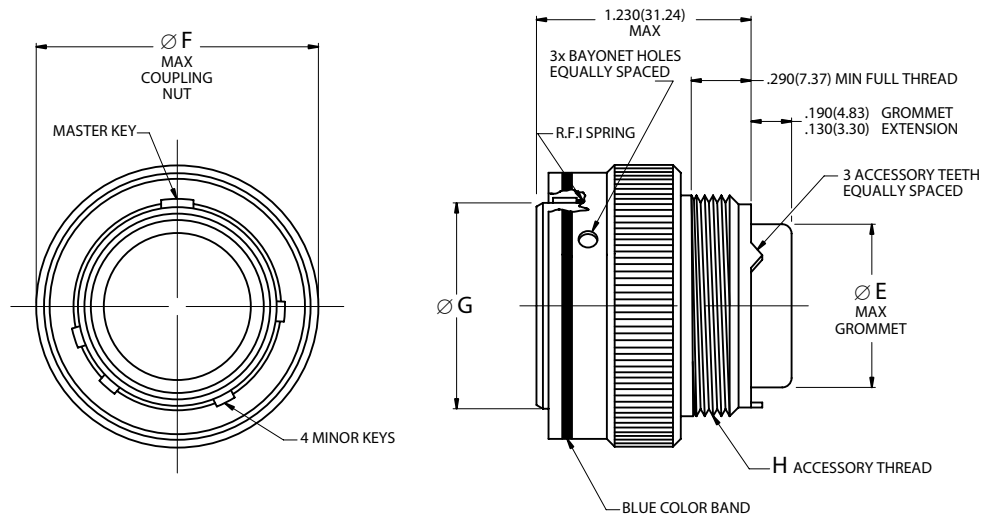
| Shell Size | Ø E     |       | Ø F     |       | Ø G            |                | H                            |
|------------|---------|-------|---------|-------|----------------|----------------|------------------------------|
|            | Maximum |       | Maximum |       | +0.05<br>-0.04 | +0.13<br>-0.10 | Accessory Thread<br>Class 2A |
|            | inch    | mm    | inch    | mm    | inch           | mm             |                              |
| 8          | .305    | 7.75  | .776    | 19.71 | .419           | 10.64          | 1/2-20UNF                    |
| 10         | .405    | 10.29 | .906    | 23.01 | .521           | 13.23          | 5/8-24UNEF                   |
| 12         | .531    | 13.49 | 1.078   | 27.38 | .691           | 17.55          | 3/4-20UNEF                   |
| 14         | .665    | 16.89 | 1.141   | 28.98 | .760           | 19.30          | 7/8-20UNEF                   |
| 16         | .790    | 20.07 | 1.266   | 32.16 | .887           | 22.53          | 1-20UNEF                     |
| 18         | .869    | 22.07 | 1.375   | 34.93 | .993           | 25.22          | 1-1/16-18UNEF                |
| 20         | .994    | 25.25 | 1.510   | 38.35 | 1.118          | 28.40          | 1-3/16-18UNEF                |
| 22         | 1.119   | 28.42 | 1.625   | 41.28 | 1.243          | 31.57          | 1-5/16-18UNEF                |
| 24         | 1.244   | 31.60 | 1.760   | 44.70 | 1.368          | 34.75          | 1-7/16-18UNEF                |

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**M83723/77, 78**  
**RFI Grounding Plug**  
**AE83377, 78**



**Bayonet Coupling, Crimp Removable, Rear Release**



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| Shell Size | $\varnothing E$ |       | $\varnothing F$ |       | $\varnothing G$ |       | H                         |
|------------|-----------------|-------|-----------------|-------|-----------------|-------|---------------------------|
|            | Maximum         |       | Maximum         |       | +0.05           | +0.13 |                           |
|            | inch            | mm    | inch            | mm    | inch            | mm    | Accessory Thread Class 2A |
| 8          | .305            | 7.75  | .776            | 19.71 | .419            | 10.64 | 1/2-20UNF                 |
| 10         | .405            | 10.29 | .906            | 23.01 | .521            | 13.23 | 5/8-24UNEF                |
| 12         | .531            | 13.49 | 1.078           | 27.38 | .691            | 17.55 | 3/4-20UNEF                |
| 14         | .665            | 16.89 | 1.141           | 28.98 | .760            | 19.30 | 7/8-20UNEF                |
| 16         | .790            | 20.07 | 1.266           | 32.16 | .887            | 22.53 | 1-20UNEF                  |
| 18         | .869            | 22.07 | 1.375           | 34.93 | .993            | 25.22 | 1-1/16-18UNEF             |
| 20         | .994            | 25.25 | 1.510           | 38.35 | 1.118           | 28.40 | 1-3/16-18UNEF             |
| 22         | 1.119           | 28.42 | 1.625           | 41.28 | 1.243           | 31.57 | 1-5/16-18UNEF             |
| 24         | 1.244           | 31.60 | 1.760           | 44.70 | 1.368           | 34.75 | 1-7/16-18UNEF             |

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**MIL-DTL-83723 Series III  
Part Number Development  
Threaded Coupling**

**Military and Aero-Electric Part Number Development**

|  |                |           |          |           |           |          |             |
|--|----------------|-----------|----------|-----------|-----------|----------|-------------|
| <b>Mil. Prefix</b>   | <b>M83723/</b> | <b>95</b> | <b>R</b> | <b>12</b> | <b>12</b> | <b>N</b> |             |
| <b>Aero Prefix</b>   | <b>AE833</b>   | <b>95</b> | <b>R</b> | <b>12</b> | <b>12</b> | <b>N</b> | <b>-340</b> |
| <b>Shell type</b>  |                |           |          |           |           |          |             |
| 82 = Wall mount receptacle with socket contacts  |                |           |          |           |           |          |             |
| 83 = Wall mount receptacle with pin contacts   |                |           |          |           |           |          |             |
| 84 = Jam nut receptacle with socket contacts   |                |           |          |           |           |          |             |
| 85 = Jam nut receptacle with pin contacts  |                |           |          |           |           |          |             |
| 86 = Straight plug with socket contacts  |                |           |          |           |           |          |             |
| 87 = Straight plug with pin contacts   |                |           |          |           |           |          |             |
| 91 = RFI grounding plug with socket contacts   |                |           |          |           |           |          |             |
| 92 = RFI grounding plug with pin contacts  |                |           |          |           |           |          |             |
| 95 = Self-locking plug with socket contacts  |                |           |          |           |           |          |             |
| 96 = Self-locking plug with pin contacts   |                |           |          |           |           |          |             |
| 97 = Self-locking, RFI grounding plug with socket contacts   |                |           |          |           |           |          |             |
| 98 = Self-locking, RFI grounding plug with pin contacts  |                |           |          |           |           |          |             |
| 68 = Lanyard release, quick-disconnect plug, pin (not available in K & S classes)                                    |                |           |          |           |           |          |             |
| 69 = Lanyard release, quick-disconnect plug, socket (not available in K & S classes)                                 |                |           |          |           |           |          |             |
| <b>Class (Material and Finish)</b>   |                |           |          |           |           |          |             |
| A = Aluminum shell, black anodized finish (Not available in 91, 92, 97 & 98 RFI plugs)                               |                |           |          |           |           |          |             |
| G = Stainless steel shell, passivated (n/a in 97 & 98)   |                |           |          |           |           |          |             |
| K = Stainless steel shell, passivated, with firewall rated insert (n/a in 91, 92, 97 & 98)                           |                |           |          |           |           |          |             |
| R = Aluminum shell, electroless nickel finish (n/a in 97 & 98 to mil number)   |                |           |          |           |           |          |             |
| W = Aluminum shell, olive drab cadmium over nickel base (n/a in 97 & 98 to mil number)                               |                |           |          |           |           |          |             |
| S = Stainless steel shell, passivated, full teeth, firewall insert (n/a in 86, 87, 91, 92, 95 & 96)                  |                |           |          |           |           |          |             |
| <b>Shell Size (SS)</b>   |                |           |          |           |           |          |             |
| 8, 10, 12, 14, 16, 18, 20, 22 or 24 (and shell size 28 available in Aero p/n only)                                   |                |           |          |           |           |          |             |
| <b>Insert Arrangement</b>  |                |           |          |           |           |          |             |
| See pages 148 and 149  |                |           |          |           |           |          |             |
| <b>Polarization (Keying)</b>   |                |           |          |           |           |          |             |
| N = Normal   |                |           |          |           |           |          |             |
| 6, 7, 8, 9 or Y (Alternate keyed positions, Y is not available in SS 8)  |                |           |          |           |           |          |             |
| 1, 2, 3, 4 or 5 (Clocked insert polarizations within normally keyed shell, not approved for new design, n/a in SS 8) |                |           |          |           |           |          |             |
| <b>Modification (applies to Aero part numbers only)</b>  |                |           |          |           |           |          |             |
| 01 = Less contacts (Part is bagged and tagged, but not marked with 01)   |                |           |          |           |           |          |             |
| 340 = Connector kitted with M85049/31-XXX E-nut  |                |           |          |           |           |          |             |
| 341 = Connector kitted with M85049/52-1-XXX straight clamp   |                |           |          |           |           |          |             |
| 342 = Connector kitted with M85049/51-1-XXX right angle clamp  |                |           |          |           |           |          |             |
| Consult factory for other modifications  |                |           |          |           |           |          |             |

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**Note 1:** Each connector is furnished with contacts unless ordered less contacts (L/C) as follows: One spare contact for inserts requiring 2 to 26 of each contact and two spares for inserts with 27 or more of each size, and a minimum of one sealing plug up to 15% of the number of contacts of each size. In addition, one insertion/removal tool of each size is included.

**Note 2:** Proper part number marking has no “0” in front of single digit shell size (8), but it does include the “0” in front of single digit layout. Examples: M83723/95G803N and M83723/98S10056. Please note that in this series “N” for normal is included in part number marking.

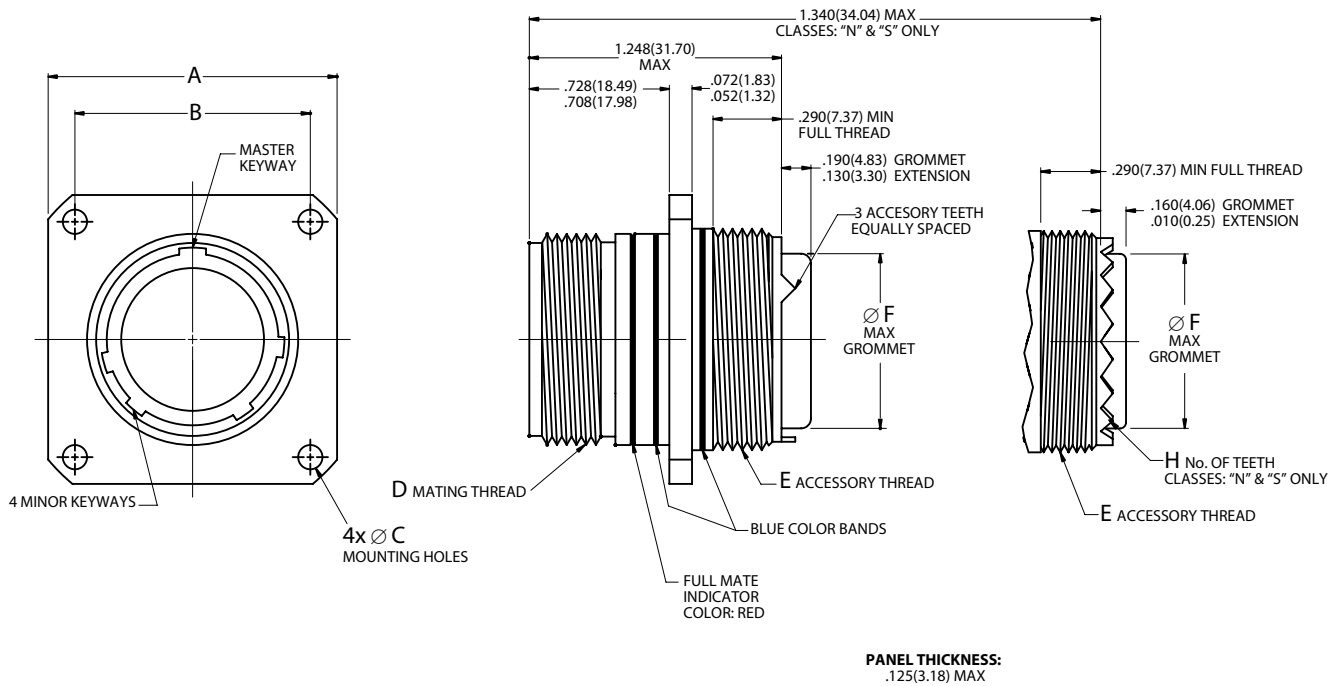
**Note 3:** Shell type M83723/70 (AE83370 Receptacle Adapter) is not listed above,



**M83723/82, 83**  
**Wall Mounting Receptacle**  
**AE83382, 83**



**Threaded Coupling, Crimp Removable, Rear Release**



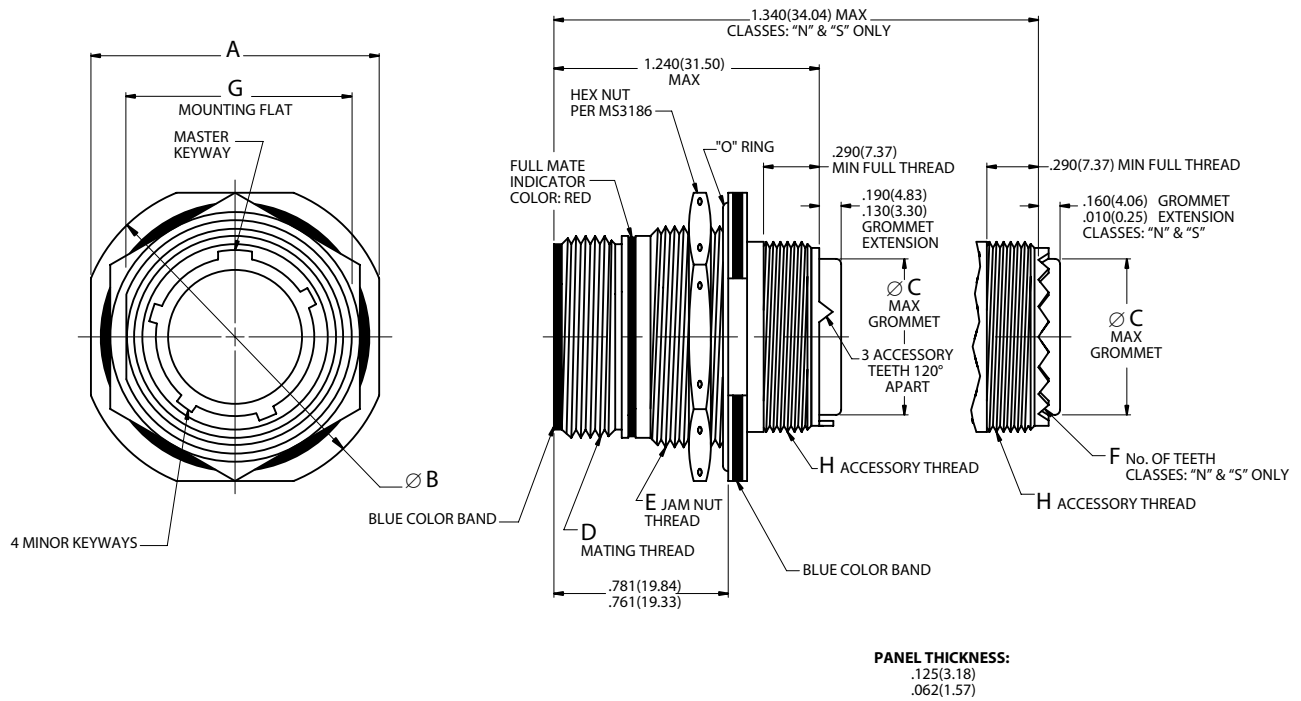
- Page 129 Completed Part Number
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| Shell Size | A     |       | B     |       | Ø C   |      | D             | E                | Ø F     |       | H            |
|------------|-------|-------|-------|-------|-------|------|---------------|------------------|---------|-------|--------------|
|            | ±.005 | ±.13  | (TP)  |       | +.005 | +.13 | Mating Thread | Accessory Thread | Maximum |       | No. of Teeth |
|            | inch  | mm    | inch  | mm    | inch  | mm   | Class 2A      | Class 2A         | inch    | mm    |              |
| 8          | .812  | 20.62 | .594  | 15.09 | .120  | 3.05 | 9/16-24UNEF   | 1/2-20UNF        | .305    | 7.75  | 12           |
| 10         | .937  | 23.80 | .719  | 18.26 | .120  | 3.05 | 11/16-24UNEF  | 5/8-24UNEF       | .405    | 10.29 | 15           |
| 12         | 1.031 | 26.19 | .812  | 20.62 | .120  | 3.05 | 7/8-20UNEF    | 3/4-20UNEF       | .531    | 13.49 | 21           |
| 14         | 1.125 | 28.58 | .906  | 23.01 | .120  | 3.05 | 15/16-20UNEF  | 7/8-20UNEF       | .665    | 16.89 | 24           |
| 16         | 1.250 | 31.75 | .969  | 24.61 | .120  | 3.05 | 1-1/16-18UNEF | 1-20UNEF         | .790    | 20.07 | 30           |
| 18         | 1.343 | 34.11 | 1.062 | 26.97 | .120  | 3.05 | 1-3/16-18UNEF | 1-1/16-18UNEF    | .869    | 22.07 | 33           |
| 20         | 1.437 | 36.50 | 1.156 | 29.36 | .120  | 3.05 | 1-5/16-18UNEF | 1-3/16-18UNEF    | .994    | 25.25 | 36           |
| 22         | 1.562 | 39.67 | 1.250 | 31.75 | .120  | 3.05 | 1-7/16-18UNEF | 1-5/16-18UNEF    | 1.119   | 28.42 | 39           |
| 24         | 1.703 | 43.26 | 1.375 | 34.93 | .149  | 3.78 | 1-9/16-18UNEF | 1-7/16-18UNEF    | 1.244   | 31.60 | 42           |
| 28         | 2.000 | 50.80 | 1.562 | 39.67 | .149  | 3.78 | 1-13/16-16UN  | 1-3/4-18UNS      | 1.475   | 37.47 | 54           |

83723 S III



**Threaded Coupling, Crimp Removable, Rear Release**



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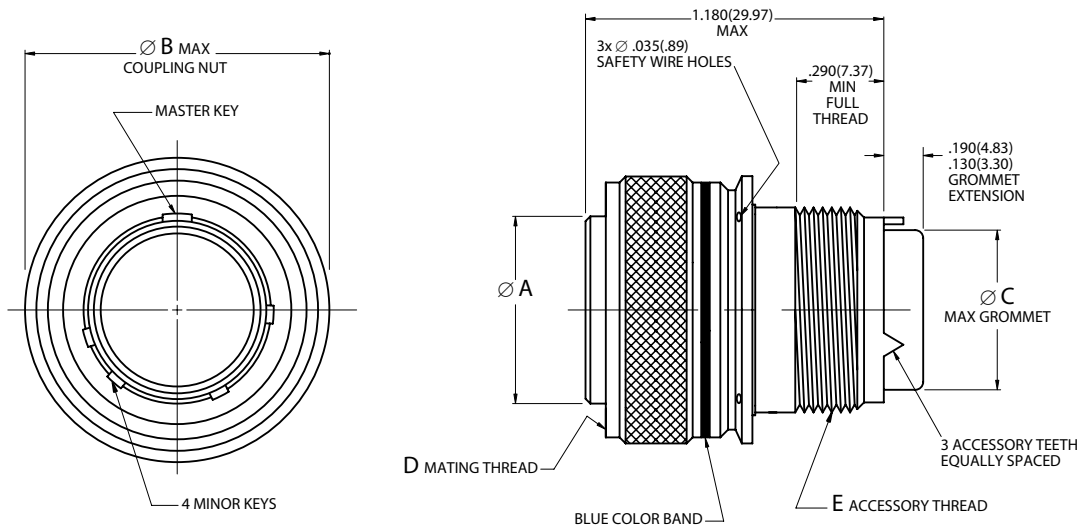
| Shell Size | A      |              | Ø B    |              | Ø C     |                        | D                       | E            | F     | G     |                           | H             |
|------------|--------|--------------|--------|--------------|---------|------------------------|-------------------------|--------------|-------|-------|---------------------------|---------------|
|            | +0.016 | <b>+0.41</b> | +0.016 | <b>+0.41</b> | Maximum | Mating Thread Class 2A | Jam Nut Thread Class 2A | No. of Teeth | ±.003 | ±.08  | Accessory Thread Class 2A |               |
|            | -.015  | <b>-.38</b>  | -.015  | <b>-.38</b>  |         |                        |                         |              |       |       |                           | inch          |
| 8          | .964   | <b>24.49</b> | 1.062  | <b>26.97</b> | .305    | <b>7.75</b>            | 9/16-24UNEF             | 5/8-20UN     | 12    | .593  | <b>15.06</b>              | 1/2-20UNF     |
| 10         | 1.088  | <b>27.64</b> | 1.176  | <b>29.87</b> | .405    | <b>10.29</b>           | 11/16-24UNEF            | 3/4-20UNEF   | 15    | .718  | <b>18.24</b>              | 5/8-24UNEF    |
| 12         | 1.275  | <b>32.39</b> | 1.364  | <b>34.65</b> | .531    | <b>13.49</b>           | 7/8-20UNEF              | 15/16-20UNEF | 21    | .905  | <b>22.99</b>              | 3/4-20UNEF    |
| 14         | 1.375  | <b>34.93</b> | 1.545  | <b>39.24</b> | .665    | <b>16.89</b>           | 15/16-20UNEF            | 1-20UNEF     | 24    | .968  | <b>24.59</b>              | 7/8-20UNEF    |
| 16         | 1.500  | <b>38.10</b> | 1.625  | <b>41.28</b> | .790    | <b>20.07</b>           | 1-1/16-18UNEF           | 1-1/8-18UNEF | 30    | 1.093 | <b>27.76</b>              | 1-20UNEF      |
| 18         | 1.625  | <b>41.28</b> | 1.750  | <b>44.45</b> | .869    | <b>22.07</b>           | 1-3/16-18UNEF           | 1-1/4-18UNEF | 33    | 1.217 | <b>30.91</b>              | 1-1/16-18UNEF |
| 20         | 1.750  | <b>44.45</b> | 1.938  | <b>49.23</b> | .994    | <b>25.25</b>           | 1-5/16-18UNEF           | 1-3/8-18UNEF | 36    | 1.342 | <b>34.09</b>              | 1-3/16-18UNEF |
| 22         | 1.938  | <b>49.23</b> | 2.062  | <b>52.37</b> | 1.119   | <b>28.42</b>           | 1-7/16-18UNEF           | 1-1/2-18UNEF | 39    | 1.467 | <b>37.26</b>              | 1-5/16-18UNEF |
| 24         | 2.063  | <b>52.40</b> | 2.166  | <b>55.02</b> | 1.244   | <b>31.60</b>           | 1-9/16-18UNEF           | 1-5/8-18UNEF | 42    | 1.592 | <b>40.44</b>              | 1-7/16-18UNEF |
| 28         | 2.314  | <b>58.78</b> | 2.428  | <b>61.67</b> | 1.475   | <b>37.47</b>           | 1-13/16-16UN            | 1-7/8-20UN   | 54    | 1.840 | <b>46.74</b>              | 1-3/4-18UNS   |

**83723 S III**

**M83723/86, 87**  
**Straight Plug**  
**AE83386, 87**



**Threaded Coupling, Crimp Removable, Rear Release**



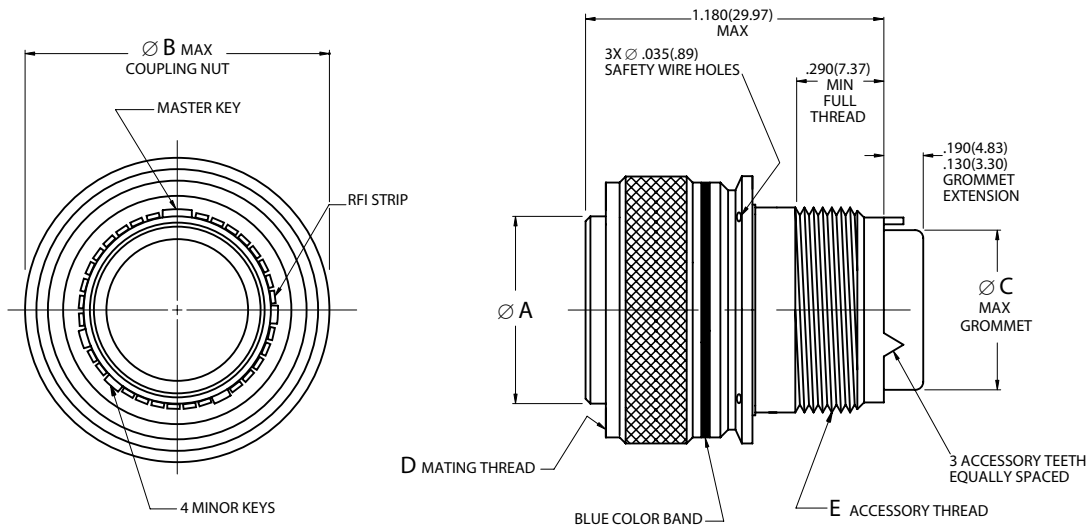
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| Shell Size | Ø A    |              | Ø B     |              | Ø C     |              | D                      | E                         |
|------------|--------|--------------|---------|--------------|---------|--------------|------------------------|---------------------------|
|            | +0.005 | <b>+.13</b>  | Maximum | Maximum      | Maximum | Maximum      | Mating Thread Class 2B | Accessory Thread Class 2A |
|            | -.004  | <b>-.10</b>  |         |              |         |              |                        |                           |
|            | inch   | <b>mm</b>    | inch    | <b>mm</b>    | inch    | <b>mm</b>    |                        |                           |
| 8          | .400   | <b>10.16</b> | .776    | <b>19.71</b> | .305    | <b>7.75</b>  | 9/16-24UNEF            | 1/2-20UNF                 |
| 10         | .521   | <b>13.23</b> | .906    | <b>23.01</b> | .405    | <b>10.29</b> | 11/16-24UNEF           | 5/8-24UNEF                |
| 12         | .691   | <b>17.55</b> | 1.078   | <b>27.38</b> | .531    | <b>13.49</b> | 7/8-20UNEF             | 3/4-20UNEF                |
| 14         | .760   | <b>19.30</b> | 1.141   | <b>28.98</b> | .665    | <b>16.89</b> | 15/16-20UNEF           | 7/8-20UNEF                |
| 16         | .887   | <b>22.53</b> | 1.266   | <b>32.16</b> | .790    | <b>20.07</b> | 1-1/16-18UNEF          | 1-20UNEF                  |
| 18         | .993   | <b>25.22</b> | 1.375   | <b>34.93</b> | .869    | <b>22.07</b> | 1-3/16-18UNEF          | 1-1/16-18UNEF             |
| 20         | 1.118  | <b>28.40</b> | 1.510   | <b>38.35</b> | .994    | <b>25.25</b> | 1-5/16-18UNEF          | 1-3/16-18UNEF             |
| 22         | 1.243  | <b>31.57</b> | 1.625   | <b>41.28</b> | 1.119   | <b>28.42</b> | 1-7/16-18UNEF          | 1-5/16-18UNEF             |
| 24         | 1.368  | <b>34.75</b> | 1.760   | <b>44.70</b> | 1.244   | <b>31.60</b> | 1-9/16-18UNEF          | 1-7/16-18UNEF             |
| 28         | 1.618  | <b>41.10</b> | 2.050   | <b>52.07</b> | 1.475   | <b>37.47</b> | 1-13/16-16UN           | 1-3/4-18UNS               |

83723 S III



**Threaded Coupling, Crimp Removable, Rear Release**



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 Page 147 Insert Availability and Contact Information  
 Page 143 Polarization

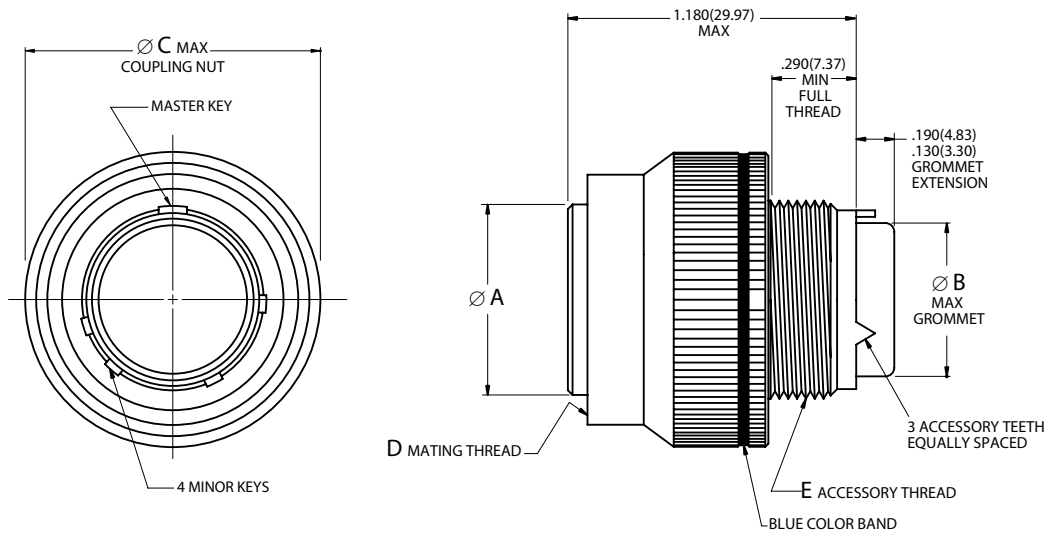
| Shell Size | Ø A    |              | Ø B     |              | Ø C     |              | D             | E                |
|------------|--------|--------------|---------|--------------|---------|--------------|---------------|------------------|
|            | +0.005 | <b>+.13</b>  | Maximum |              | Maximum |              | Mating Thread | Accessory Thread |
|            | -.004  | <b>-.10</b>  | inch    | mm           | inch    | mm           | Class 2B      | Class 2A         |
| 8          | .400   | <b>10.16</b> | .776    | <b>19.71</b> | .305    | <b>7.75</b>  | 9/16-24UNEF   | 1/2-20UNF        |
| 10         | .521   | <b>13.23</b> | .906    | <b>23.01</b> | .405    | <b>10.29</b> | 11/16-24UNEF  | 5/8-24UNEF       |
| 12         | .691   | <b>17.55</b> | 1.078   | <b>27.38</b> | .531    | <b>13.49</b> | 7/8-20UNEF    | 3/4-20UNEF       |
| 14         | .760   | <b>19.30</b> | 1.141   | <b>28.98</b> | .665    | <b>16.89</b> | 15/16-20UNEF  | 7/8-20UNEF       |
| 16         | .887   | <b>22.53</b> | 1.266   | <b>32.16</b> | .790    | <b>20.07</b> | 1-1/16-18UNEF | 1-20UNEF         |
| 18         | .993   | <b>25.22</b> | 1.375   | <b>34.93</b> | .869    | <b>22.07</b> | 1-3/16-18UNEF | 1-1/16-18UNEF    |
| 20         | 1.118  | <b>28.40</b> | 1.510   | <b>38.35</b> | .994    | <b>25.25</b> | 1-5/16-18UNEF | 1-3/16-18UNEF    |
| 22         | 1.243  | <b>31.57</b> | 1.625   | <b>41.28</b> | 1.119   | <b>28.42</b> | 1-7/16-18UNEF | 1-5/16-18UNEF    |
| 24         | 1.368  | <b>34.75</b> | 1.760   | <b>44.70</b> | 1.244   | <b>31.60</b> | 1-9/16-18UNEF | 1-7/16-18UNEF    |
| 28         | 1.618  | <b>41.10</b> | 2.050   | <b>52.07</b> | 1.475   | <b>37.47</b> | 1-13/16-16UN  | 1-3/4-18UNS      |

**83723 S III**

**M83723/95, 96**  
**Self-Locking Plug**  
**AE83395, 96**



**Threaded Coupling, Crimp Removable, Rear Release**



- Page 129 Completed Part Number
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- Pages 148,149 Insert Arrangements
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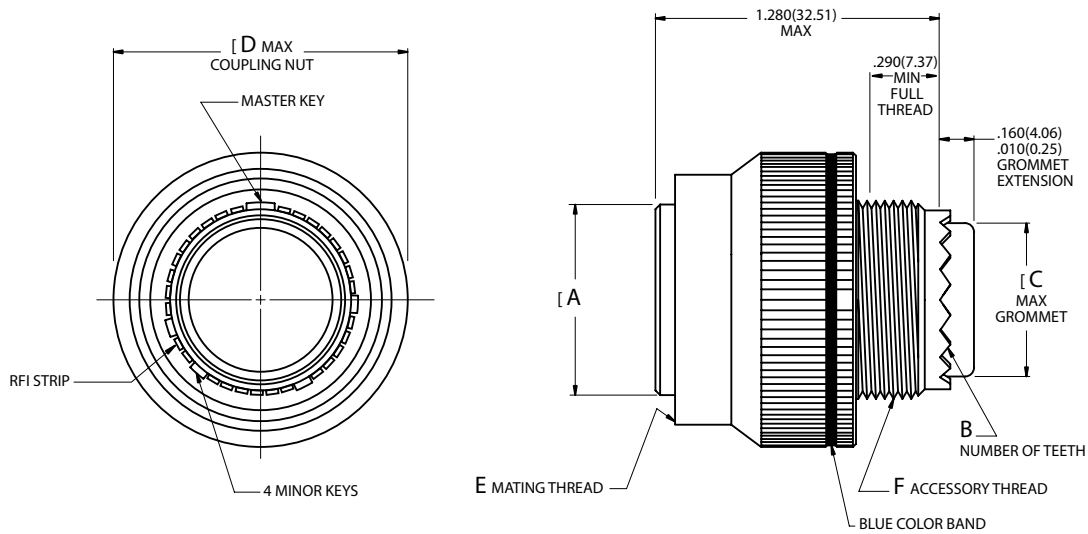
| Shell Size | $\varnothing A$ |              | $\varnothing B$ |              | $\varnothing C$ |              | <b>D</b>      | <b>E</b>         |
|------------|-----------------|--------------|-----------------|--------------|-----------------|--------------|---------------|------------------|
|            | +0.005          | <b>+13</b>   | Maximum         |              | Maximum         |              | Mating Thread | Accessory Thread |
|            | -.004           | <b>-10</b>   | inch            | mm           | inch            | mm           | Class 2B      | Class 2A         |
| 8          | .400            | <b>10.16</b> | .305            | <b>7.75</b>  | .832            | <b>21.13</b> | 9/16-24UNEF   | 1/2-20UNF        |
| 10         | .521            | <b>13.23</b> | .405            | <b>10.29</b> | .959            | <b>24.36</b> | 11/16-24UNEF  | 5/8-24UNEF       |
| 12         | .691            | <b>17.55</b> | .531            | <b>13.49</b> | 1.097           | <b>27.86</b> | 7/8-20UNEF    | 3/4-20UNEF       |
| 14         | .760            | <b>19.30</b> | .665            | <b>16.89</b> | 1.236           | <b>31.39</b> | 15/16-20UNEF  | 7/8-20UNEF       |
| 16         | .887            | <b>22.53</b> | .790            | <b>20.07</b> | 1.360           | <b>34.54</b> | 1-1/16-18UNEF | 1-20UNEF         |
| 18         | .993            | <b>25.22</b> | .869            | <b>22.07</b> | 1.473           | <b>37.41</b> | 1-3/16-18UNEF | 1-1/16-18UNEF    |
| 20         | 1.118           | <b>28.40</b> | .994            | <b>25.25</b> | 1.586           | <b>40.28</b> | 1-5/16-18UNEF | 1-3/16-18UNEF    |
| 22         | 1.243           | <b>31.57</b> | 1.119           | <b>28.42</b> | 1.703           | <b>43.26</b> | 1-7/16-18UNEF | 1-5/16-18UNEF    |
| 24         | 1.368           | <b>34.75</b> | 1.244           | <b>31.60</b> | 1.846           | <b>46.89</b> | 1-9/16-18UNEF | 1-7/16-18UNEF    |
| 28         | 1.618           | <b>41.10</b> | 1.475           | <b>37.47</b> | 2.278           | <b>57.86</b> | 1-13/16-16UN  | 1-3/4-18UNS      |

83723 S III



**M83723/97, 98**  
**Self-Locking, RFI Grounding Plug**  
**AE83397, 98**

**Threaded Coupling, Crimp Removable, Rear Release**



- Page 129 Completed Part Number
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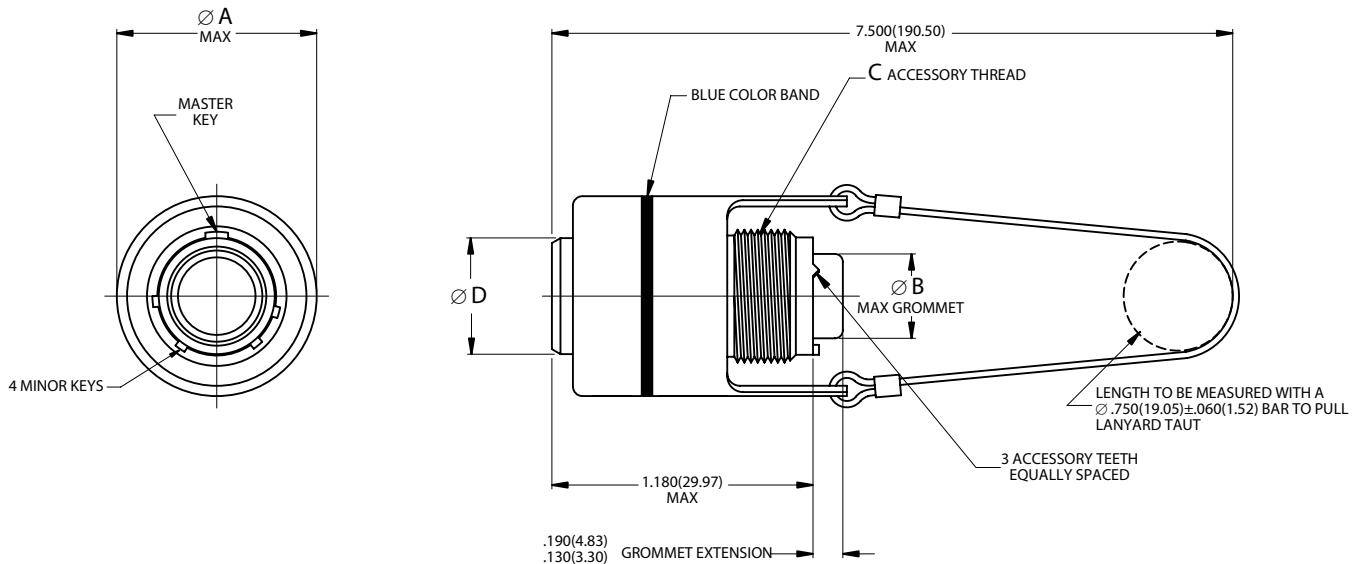
| Shell Size | Ø A              |                        | B               | Ø C     |              | Ø D     |              | E                         | F                            |
|------------|------------------|------------------------|-----------------|---------|--------------|---------|--------------|---------------------------|------------------------------|
|            | +0.005<br>-0.004 | <b>+0.13<br/>-0.10</b> | No. of<br>Teeth | Maximum |              | Maximum |              | Mating Thread<br>Class 2B | Accessory Thread<br>Class 2A |
|            | inch             | <b>mm</b>              |                 | inch    | <b>mm</b>    | inch    | <b>mm</b>    |                           |                              |
| 8          | .400             | <b>10.16</b>           | 12              | .305    | <b>7.75</b>  | .967    | <b>24.56</b> | 9/16-24UNEF               | 1/2-20UNF                    |
| 10         | .521             | <b>13.23</b>           | 15              | .405    | <b>10.29</b> | 1.093   | <b>27.76</b> | 11/16-24UNEF              | 5/8-24UNEF                   |
| 12         | .691             | <b>17.55</b>           | 21              | .531    | <b>13.49</b> | 1.170   | <b>29.72</b> | 7/8-20UNEF                | 3/4-20UNEF                   |
| 14         | .760             | <b>19.30</b>           | 24              | .665    | <b>16.89</b> | 1.310   | <b>33.27</b> | 15/16-20UNEF              | 7/8-20UNEF                   |
| 16         | .887             | <b>22.53</b>           | 30              | .790    | <b>20.07</b> | 1.500   | <b>38.10</b> | 1-1/16-18UNEF             | 1-20UNEF                     |
| 18         | .993             | <b>25.22</b>           | 33              | .869    | <b>22.07</b> | 1.562   | <b>39.67</b> | 1-3/16-18UNEF             | 1-1/16-18UNEF                |
| 20         | 1.118            | <b>28.40</b>           | 36              | .994    | <b>25.25</b> | 1.710   | <b>43.43</b> | 1-5/16-18UNEF             | 1-3/16-18UNEF                |
| 22         | 1.243            | <b>31.57</b>           | 39              | 1.119   | <b>28.42</b> | 1.812   | <b>46.02</b> | 1-7/16-18UNEF             | 1-5/16-18UNEF                |
| 24         | 1.368            | <b>34.75</b>           | 42              | 1.244   | <b>31.60</b> | 1.948   | <b>49.48</b> | 1-9/16-18UNEF             | 1-7/16-18UNEF                |
| 28         | 1.618            | <b>41.10</b>           | 54              | 1.475   | <b>37.47</b> | 2.278   | <b>57.86</b> | 1-13/16-16UN              | 1-3/4-18UNS                  |

**83723 S III**

**M83723/68, 69**  
**Lanyard Release, Quick-Disconnect Plug**  
**AE83368, 69**



**Quick-Disconnect, Threaded Coupling, Crimp Removable, Rear Release**



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 Page 143 Polarization

**Note 1:** M83723/70 receptacle adapter (page 142) is required to mate the Quick-Disconnect Plug with a receptacle.

**Note 2:** Not available in shell size 8.

| Shell Size | $\varnothing A$ |       | $\varnothing B$ |       | C<br>Accessory Thread<br>Class 2A | $\varnothing D$ |             |
|------------|-----------------|-------|-----------------|-------|-----------------------------------|-----------------|-------------|
|            | Maximum         |       | Maximum         |       |                                   | inch            | mm          |
|            | inch            | mm    | inch            | mm    |                                   |                 |             |
| 10         | 1.240           | 31.50 | .405            | 10.29 | 5/8-24UNEF                        | .526/.517       | 13.36/13.13 |
| 12         | 1.432           | 36.37 | .531            | 13.49 | 3/4-20UNEF                        | .696/.687       | 17.68/17.45 |
| 14         | 1.490           | 37.85 | .665            | 16.89 | 7/8-20UNEF                        | .765/.756       | 19.43/19.20 |
| 16         | 1.711           | 43.46 | .790            | 20.07 | 1-20UNEF                          | .892/.883       | 22.66/22.43 |
| 18         | 1.815           | 46.10 | .869            | 22.07 | 1-1/16-18UNEF                     | .998/.989       | 25.35/25.12 |
| 20         | 1.962           | 49.83 | .994            | 25.25 | 1-3/16-18UNEF                     | 1.123/1.114     | 28.52/28.30 |
| 22         | 2.070           | 52.58 | 1.119           | 28.42 | 1-5/16-18UNEF                     | 1.248/1.239     | 31.70/31.47 |
| 24         | 2.195           | 55.75 | 1.244           | 31.60 | 1-7/16-18UNEF                     | 1.373/1.364     | 34.87/34.65 |

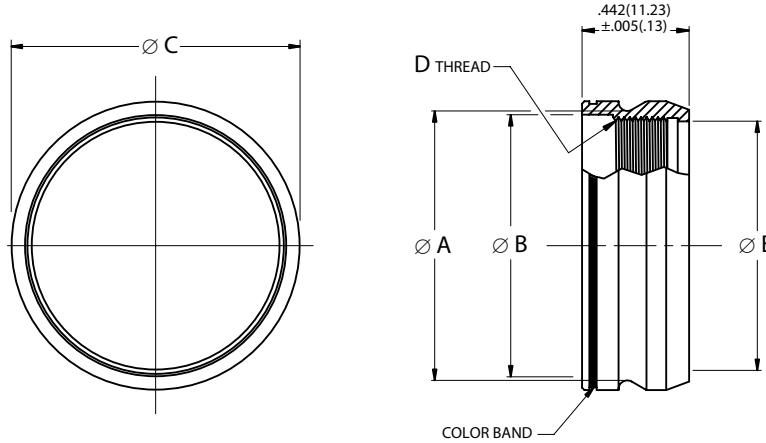


**M83723/70**

**Receptacle Adapter, Quick-Disconnect**

**AE83370**

**Quick-Disconnect (Push-Pull) Receptacle Adapter**



|   |                |           |          |           |
|---|----------------|-----------|----------|-----------|
| <b>Mil Prefix</b>                                       | <b>M83723/</b> | <b>70</b> | <b>W</b> | <b>10</b> |
| <b>Aero Prefix</b>                                      | <b>AE833</b>   | <b>70</b> | <b>W</b> | <b>10</b> |
| <b>Specification Sheet (Shell type)</b>                 |                |           |          |           |
| 70 = Receptacle adapter, quick-disconnect               |                |           |          |           |
| <b>Class (Material and Finish)</b>                      |                |           |          |           |
| A = Aluminum shell, black anodized finish               |                |           |          |           |
| G = Stainless steel shell, passivated                   |                |           |          |           |
| R = Aluminum shell, electroless nickel finish           |                |           |          |           |
| W = Aluminum shell, cadmium olive drab over nickel base |                |           |          |           |
| <b>Shell Size</b>                                       |                |           |          |           |
| 8, 10, 12, 14, 16, 18, 20, 22 or 24                     |                |           |          |           |

**Note:** The adapter is required to mate the Lanyard Release and Push-Pull Quick-Disconnect plugs (M83723/66 thru 69) with M83723/82, 83, 84, 85, 88, 89 and 90 threaded coupling receptacles. Use compatible thread seizing compound to permanently secure to the receptacle.

| Shell Size | D                        | Ø A   |       | Ø B   |       | Ø C   |       | Ø E   |       |
|------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|            | Coupling Thread Class 2B | ±.002 | ±.05  | ±.002 | ±.05  | ±.002 | ±.05  | ±.005 | ±.13  |
|            |                          | inch  | mm    | inch  | mm    | inch  | mm    | inch  | mm    |
| 8          | 9/16-24UNEF              | .605  | 15.37 | .577  | 14.66 | .687  | 17.45 | .525  | 13.34 |
| 10         | 11/16-24UNEF             | .730  | 18.54 | .712  | 18.08 | .812  | 20.62 | .650  | 16.51 |
| 12         | 7/8-20UNEF               | .917  | 23.29 | .892  | 22.66 | .999  | 25.37 | .840  | 21.34 |
| 14         | 15/16-20UNEF             | .980  | 24.89 | .952  | 24.18 | 1.062 | 26.97 | .900  | 22.86 |
| 16         | 1-1/16-18UNEF            | 1.105 | 28.07 | 1.077 | 27.36 | 1.187 | 30.15 | 1.025 | 26.04 |
| 18         | 1-3/16-18UNEF            | 1.230 | 31.24 | 1.202 | 30.53 | 1.328 | 33.73 | 1.150 | 29.21 |
| 20         | 1-5/16-18UNEF            | 1.355 | 34.42 | 1.327 | 33.71 | 1.453 | 36.91 | 1.275 | 32.39 |
| 22         | 1-7/16-18UNEF            | 1.480 | 37.59 | 1.452 | 36.88 | 1.578 | 40.08 | 1.400 | 35.56 |
| 24         | 1-9/16-18UNEF            | 1.605 | 40.77 | 1.577 | 40.06 | 1.703 | 43.26 | 1.525 | 38.74 |

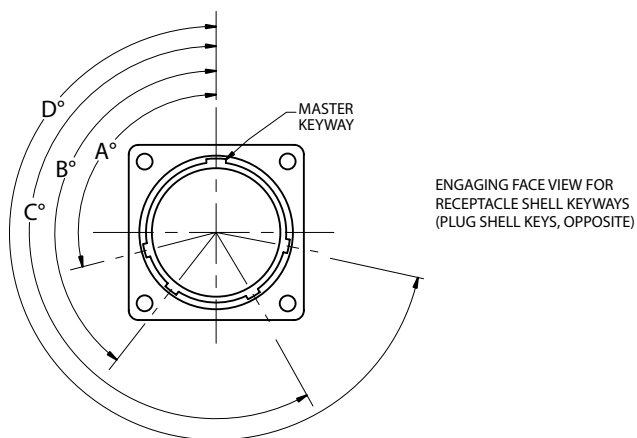
83723 S III



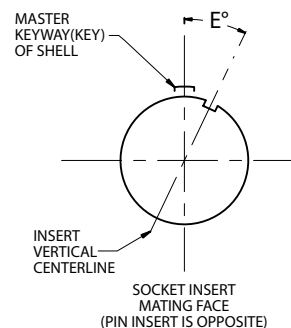
# MIL-DTL-83723 Series III Polarization (Shell Keying, Insert Clocking) Bayonet and Threaded



## Shell Keying



## Insert Clocking



### Notes:

1. In the normal position (N), the insert centerline coincides with the centerline of the master keyway (key) of the shell.  $E = 0^\circ$
2. In the alternate keying positions (6, 7, 8, 9 and Y), the minor keyways (keys) are positioned with reference to master keyway (key) as indicated in the keying position table below.
3. In the alternate insert clocking positions (1, 2, 3, 4 and 5), the socket insert (viewing from the mating side) is rotated counter-clockwise relative to the centerline of the master keyway (key) of the shell. The pin insert is rotated clockwise.

| Shell Size       | Polarizing |     | Key/Keyway Positions |     |     |    | Insert Position |  |
|------------------|------------|-----|----------------------|-----|-----|----|-----------------|--|
|                  | Position   | A°  | B°                   | C°  | D°  | E° |                 |  |
| 8*, 10           | N          | 105 | 140                  | 215 | 265 | 0  |                 |  |
|                  | 6          | 102 | 132                  | 248 | 320 | 0  |                 |  |
|                  | 7          | 80  | 118                  | 230 | 312 | 0  |                 |  |
|                  | 8          | 35  | 140                  | 205 | 275 | 0  |                 |  |
|                  | 9          | 64  | 155                  | 234 | 304 | 0  |                 |  |
| 10 only          | Y          | 25  | 115                  | 220 | 270 | 0  |                 |  |
| 12 thru 24, 28** | N          | 105 | 140                  | 215 | 265 | 0  |                 |  |
|                  | 6          | 18  | 149                  | 192 | 259 | 0  |                 |  |
|                  | 7          | 92  | 152                  | 222 | 342 | 0  |                 |  |
|                  | 8          | 84  | 152                  | 204 | 334 | 0  |                 |  |
|                  | 9          | 24  | 135                  | 199 | 240 | 0  |                 |  |
|                  | Y          | 98  | 152                  | 268 | 338 | 0  |                 |  |
| 10 thru 24       | 1†         | 105 | 140                  | 215 | 265 | 10 |                 |  |
|                  | 2†         | 105 | 140                  | 215 | 265 | 20 |                 |  |
|                  | 3†         | 105 | 140                  | 215 | 265 | 30 |                 |  |
|                  | 4†         | 105 | 140                  | 215 | 265 | 40 |                 |  |
|                  | 5†         | 105 | 140                  | 215 | 265 | 50 |                 |  |

\* Per MIL-STD-1554, keyed position Y and clocked positions 1, 2, 3, 4 and 5 are not available in shell size 8.

\*\* Shell size 28 is not from military standard. It is only available in threaded family to Aero-Electric part number.

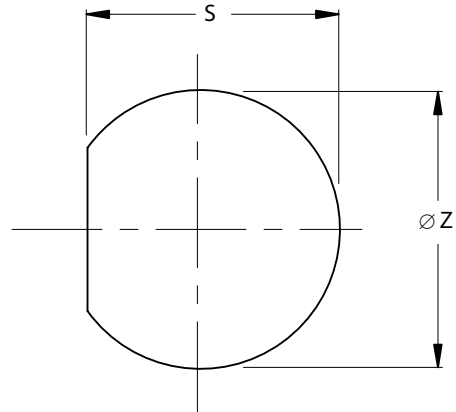
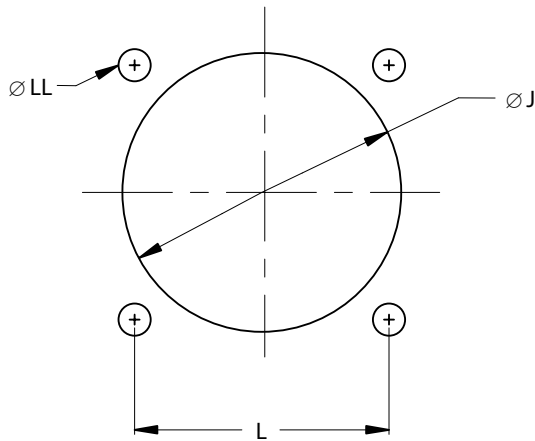
† Per MIL-STD-1554, insert positions 1 thru 5 are inactive for new design.

**Note:** Alternate positions “Z” and “10” are cancelled and superseded by Position “Y”.



# MIL-DTL-83723 Series III, Bayonet and Threaded Flange and Jam Nut Receptacles Panel Cutouts

## Panel Cutouts



### Panel Thickness

| Receptacle Type                    | Rear Mounting |           | Front Mounting |          |
|------------------------------------|---------------|-----------|----------------|----------|
|                                    | inch          | mm        | inch           | mm       |
| Wall Mount Receptacle, Bayonet     | .250 max*     | 6.36 max* | .125 max       | 3.18 max |
| Wall Mount Receptacle, Threaded    | .125 max      | 3.18 max  | .125 max       | 3.18 max |
| Jam Nut Mount (Bayonet & Threaded) | .062/.125     | 1.57/3.18 | —              | —        |

\* Includes screw-head

### Flange and Jam Nut Mounting Dimensions

| Shell Size | L     |       | Ø J                       |       | Ø J                        |       | Ø LL   |       | S     |       | Ø Z   |       |
|------------|-------|-------|---------------------------|-------|----------------------------|-------|--------|-------|-------|-------|-------|-------|
|            | (TP)  |       | For Back Mounting Minimum |       | For Front Mounting Minimum |       | +0.000 | +0.00 | ±.005 | ±.13  | ±.005 | ±.13  |
|            | inch  | mm    | inch                      | mm    | inch                       | mm    | -.009  | -.23  | inch  | mm    | inch  | mm    |
| 8          | .594  | 15.09 | .620                      | 15.75 | .510                       | 12.95 | .125   | 3.18  | .605  | 15.37 | .635  | 16.13 |
| 10         | .719  | 18.26 | .748                      | 19.00 | .635                       | 16.13 | .125   | 3.18  | .730  | 18.54 | .760  | 19.30 |
| 12         | .812  | 20.62 | .918                      | 23.32 | .760                       | 19.30 | .125   | 3.18  | .917  | 23.29 | .947  | 24.05 |
| 14         | .906  | 23.01 | .988                      | 25.10 | .885                       | 22.48 | .125   | 3.18  | .980  | 24.89 | 1.010 | 25.65 |
| 16         | .969  | 24.61 | 1.114                     | 28.30 | 1.010                      | 25.65 | .125   | 3.18  | 1.105 | 28.07 | 1.135 | 28.83 |
| 18         | 1.062 | 26.97 | 1.220                     | 30.99 | 1.072                      | 27.23 | .125   | 3.18  | 1.229 | 31.22 | 1.260 | 32.00 |
| 20         | 1.156 | 29.36 | 1.346                     | 34.19 | 1.197                      | 30.40 | .125   | 3.18  | 1.354 | 34.39 | 1.385 | 35.18 |
| 22         | 1.250 | 31.75 | 1.470                     | 37.34 | 1.322                      | 33.58 | .125   | 3.18  | 1.479 | 37.57 | 1.510 | 38.35 |
| 24         | 1.375 | 34.93 | 1.596                     | 40.54 | 1.442                      | 36.63 | .154   | 3.91  | 1.604 | 40.74 | 1.635 | 41.53 |

83723 S III

# MIL-DTL-83723 Contacts, Tools and Seal Plugs Series III



## Contacts, Plastic Insertion/Removal Tools and Seal Plugs

|              | Application  | Pin Contacts | Socket Contacts | Seal Plugs   | Insertion/Removal Tools |
|--------------|--------------|--------------|-----------------|--------------|-------------------------|
| Contact Size |              |              |                 |              | Plastic                 |
|              | Type         | Military No. | Military No.    | Military No. | Military No.            |
| 20           | Power/Signal | M39029/4-110 | M39029/5-115    | MS27488-20-1 | M81969/14-11            |
| 16           | Power/Signal | M39029/4-111 | M39029/5-116    | MS27488-16-1 | M81969/14-03            |
| 12           | Power/Signal | M39029/4-113 | M39029/5-118    | MS27488-12-1 | M81969/14-04            |

## Crimping and Metal Insertion/Extraction Tools

|              | Crimp Tool   | Positioner       | Positioner          | Insertion Tool | Extraction Tool |
|--------------|--------------|------------------|---------------------|----------------|-----------------|
| Contact Size |              | For Pin Contacts | For Socket Contacts | Metal          | Metal           |
|              | Military No. | Military No.     | Military No.        | Military No.   | Military No.    |
| 20           | M22520/1-01  | M22520/1-02      | M22520/1-02         | M81969/8-205   | M81969/8-206    |
|              | M22520/2-01  | M22520/2-02      | M22520/2-02         |                |                 |
| 16           | M22520/1-01  | M22520/1-02      | M22520/1-02         | M81969/8-207   | M81969/8-208    |
| 12           | M22520/1-01  | M22520/1-02      | M22520/1-02         | M81969/8-209   | M81969/8-210    |

## Contact and Wire Data

| Contact Size | Test Current | Voltage    | Crimp Well Data |                   |      | Wire Range |                 | Finished Wire Ø Range |      |         |      |
|--------------|--------------|------------|-----------------|-------------------|------|------------|-----------------|-----------------------|------|---------|------|
|              | DC Test      | Max. Drop  | Well Dia.       | Minimum Well Dept |      |            |                 | Minimum               |      | Maximum |      |
|              | Amps         | Millivolts | inch            | inch              | mm   | AWG        | mm <sup>2</sup> | inch                  | mm   | inch    | mm   |
| 20           | 7.5          | 55         | .049 ±.001      | .155              | 3.94 | 24-20      | .20-.52         | .040                  | 1.02 | .083    | 2.11 |
| 16           | 13.0         | 49         | .067 ±.001      | .250              | 6.35 | 20-16      | .52-1.31        | .053                  | 1.35 | .103    | 2.62 |
| 12           | 23.0         | 42         | .100 ±.002      | .250              | 6.35 | 14-12      | 2.08-3.31       | .097                  | 2.46 | .158    | 4.01 |

**Note:** Test Current and Maximum Voltage Drop when tested with silver-plated wire at 25°C.



## MIL-DTL-83723 Series III Contact Installation Instructions Bayonet and Threaded Coupling

# Contact Installation Instructions

### Crimping Contacts

1. Select the appropriate crimp tool and ensure that the proper crimp head positioner is used.
2. Cycle the tool to be sure the indentors are open.
3. Determine the correct selector setting for the wire size from the data plate on the positioner (turret head assembly) and set the selector knob on the crimp tool to match.
4. Place the contact, mating end first, into the tool.
5. Insert the stripped wire into the hollow end of the contact. Be sure the wire is inserted as far as it will go.
6. Close the tool completely to crimp. Unless the tool is closed completely, the tool will not release the contact.
7. Remove the crimped contact from the tool. Check the inspection hole to verify that the wire is fully inserted.

### Insertion of Contacts

1. Before inserting the contacts, unscrew the accessories (clamps, backshells or adapters) from rear of plug or receptacle. Slide the hardware over the wire bundle in the proper order for reassembly after all the contacts are inserted.
2. To assist insertion of contacts, lubricate insulator (grommet) cavities with isopropyl alcohol. Alcohol will evaporate and will not leave a conductive film. **Caution: Never use any lubricant other than isopropyl alcohol.**

3. Place the correct insertion tool on the contact so that the wire runs along the groove in the tool. (Tool tip will butt against the shoulder.) Hold the plug or receptacle body firmly.
4. Beginning with a center cavity, insert the contact into the insulator with a slow, even pressure until the contact snaps into position. Make sure the contact and tool are held perpendicular to the face of the insert during the contact installation or the grommet could be damaged.
  - 4.1 If contacts are not inserted all the way prior to removing insertion tool, do not try to reinsert the insertion tool. Instead, remove the contact and try again; otherwise reinserting the insertion tool may damage the inside of the contact cavity.
5. Remove tool and check the face of the connector for proper contact installation. Proper installation may also be checked by pulling back lightly on the wire to make sure the contact is properly seated.

### Completion

After all the cavities have been filled, slide the hardware back into position on the connector and tighten.

### Extraction of Contacts (Rework)

1. Slide the hardware back over the wire bundle.
2. Select the appropriate tool. Place the wire into the extraction tool of the pin or socket.
3. Slowly slide the extraction tool down wire into the contact cavities until the tool tip bottoms against the contact shoulder, expanding the clip retaining tines. Hold the wire firmly in the tool and pull the wired contact and tool straight out of the rear of the insulator.

| Size | Pin Contact  | Socket Contact | Basic Crimp Tool | Pin Positioner     | Socket Positioner  | Insertion/Removal Tool |
|------|--------------|----------------|------------------|--------------------|--------------------|------------------------|
| 20   | M39029/4-110 | M39029/5-115   | M22520/1-01      | M22520/1-02 Red    | M22520/1-02 Red    | M81969/14-11           |
|      |              |                | M22520/2-01      | M22520/2-02        | M22520/2-02        |                        |
| 16   | M39029/4-111 | M39029/5-116   | M22520/1-01      | M22520/1-02 Blue   | M22520/1-02 Blue   | M81969/14-03           |
| 12   | M39029/4-113 | M39029/5-118   | M22520/1-01      | M22520/1-02 Yellow | M22520/1-02 Yellow | M81969/14-04           |

**MIL-DTL-83723 Series III**  
**Insert Availability and Contact Information**  
**per MIL-STD-1554**



**Insert Availability and Contact Information**

| Insert Arrangement | Aero-Electric |        | Total    | Quantity of Contacts |    |    |          | Service | Alternate Positions**        |     |     |     |     |
|--------------------|---------------|--------|----------|----------------------|----|----|----------|---------|------------------------------|-----|-----|-----|-----|
|                    | Status        |        | No. of   | (by Size)            |    |    |          |         | (Insert Rotation in Degrees) |     |     |     |     |
|                    | QPL'd         | Tooled | Contacts | 20                   | 16 | 12 | # 8 coax | Rating  | 1                            | 2   | 3   | 4   | 5   |
| 8-2Δ               | Yes           | Yes    | 2        | 2                    |    |    |          | I       | N/A                          | N/A | N/A | N/A | N/A |
| 8-3                | Yes           | Yes    | 3        | 3                    |    |    |          | I       | N/A                          | N/A | N/A | N/A | N/A |
| 8-98               | Yes           | Yes    | 3        | 3                    |    |    |          | I       | N/A                          | N/A | N/A | N/A | N/A |
| 10-2               | Yes           | Yes    | 2        | 2                    |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 10-5               | Yes           | Yes    | 5        | 5                    |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 10-6               | Yes           | Yes    | 6        | 6                    |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 10-20              | Yes           | Yes    | 2        |                      | 2  |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 12-3               | Yes           | Yes    | 3        |                      | 3  |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 12-12              | Yes           | Yes    | 12       | 12                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 14-4               | Yes           | Yes    | 4        |                      |    | 4  |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 14-7               | Yes           | Yes    | 7        |                      | 7  |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 14-12              | Yes           | Yes    | 12       | 9                    | 3  |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 14-15              | Yes           | Yes    | 15       | 15                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 16-10              | Yes           | Yes    | 10       |                      | 10 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 16-24              | Yes           | Yes    | 24       | 24                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 18-8               | Yes           | Yes    | 8        |                      |    | 8  |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 18-14              | Yes           | Yes    | 14       |                      | 14 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 18-31              | Yes           | Yes    | 31       | 31                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 20-16              | Yes           | Yes    | 16       |                      | 16 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 20-25              | Yes           | Yes    | 25       | 19                   |    | 6  |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 20-28              | Yes           | Yes    | 28       | 24                   |    | 4  |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 20-39              | Yes           | Yes    | 39       | 37                   | 2  |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 20-41              | Yes           | Yes    | 41       | 41                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 22-12              | Yes           | Yes    | 12       |                      |    | 12 |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 22-19              | Yes           | Yes    | 19       |                      | 19 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 22-32              | Yes           | Yes    | 32       | 26                   |    | 6  |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 22-55              | Yes           | Yes    | 55       | 55                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 24-19              | Yes           | Yes    | 19       |                      |    | 19 |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 24-29*             | N/A           | Yes    | 29       |                      | 29 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 24-30*             | N/A           | Yes    | 30       |                      | 30 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 24-43              | Yes           | Yes    | 43       | 23                   | 20 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 24-57              | Yes           | Yes    | 57       | 55                   |    | 2  |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 24-61              | Yes           | Yes    | 61       | 61                   |    |    |          | I       | 10                           | 20  | 30  | 40  | 50  |
| 28-42*             | N/A           | Yes    | 42       |                      | 42 |    |          | I       | 10                           | 20  | 30  | 40  | 50  |

\* Non MIL-STD-1554 layout, available to Aero-Electric part number only.  
 Δ Consult factory for pin insert availability.

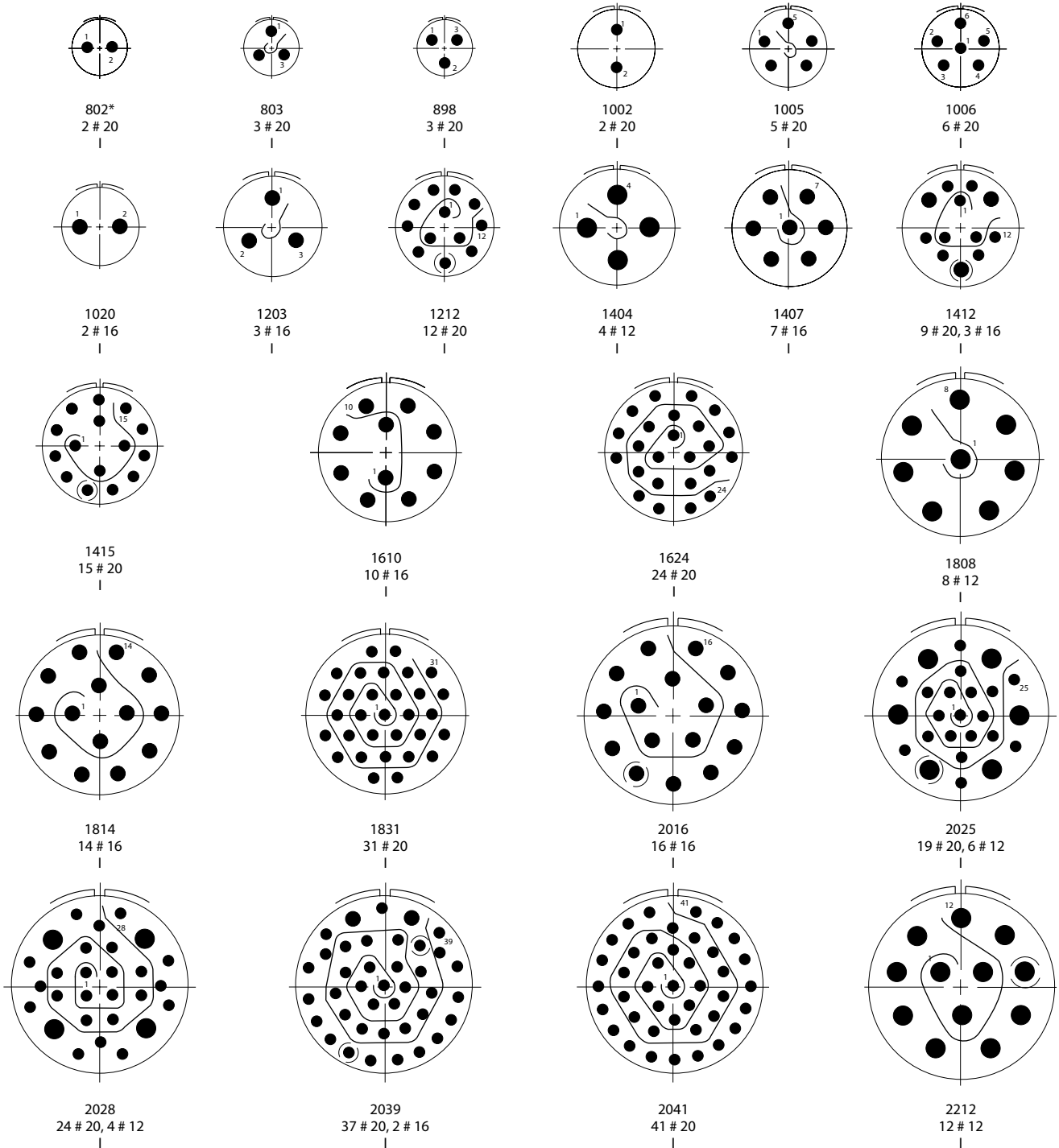
\*\* Alternate clocking positions (1, 2, 3, 4, and 5) are for interchangeability use only. Inactive for new design per MIL-STD-1554.



**MIL-STD-1554**

**Insert Arrangements (Socket Front View)  
for MIL-DTL-83723 Series III Connectors**

**Insert Arrangement Views**



\* Consult factory for pin insert availability.

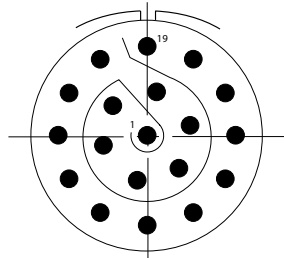
**83723 S III**

MIL-STD-1554

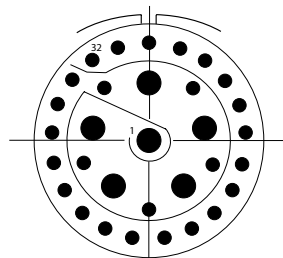
# Insert Arrangements (Socket Front View) for MIL-DTL-83723 Series III Connectors



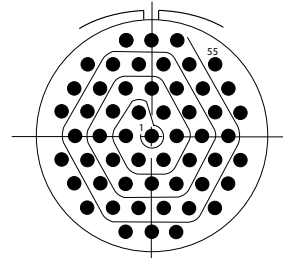
## Insert Arrangement Views



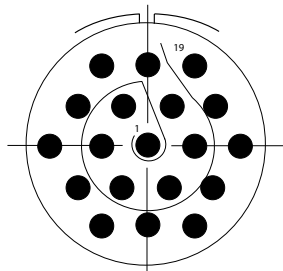
2219  
19 # 16



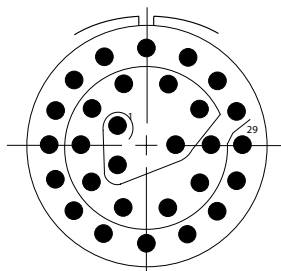
2232  
26 # 20, 6 # 12



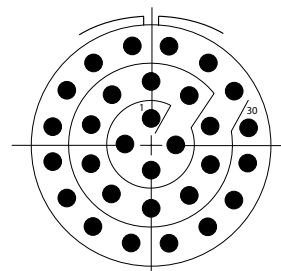
2255  
55 # 20



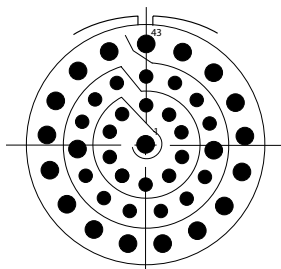
2419  
19 # 12



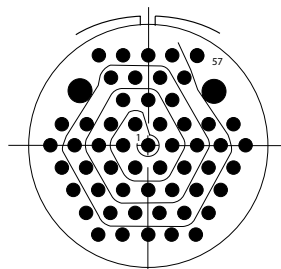
2429Δ  
29 # 16



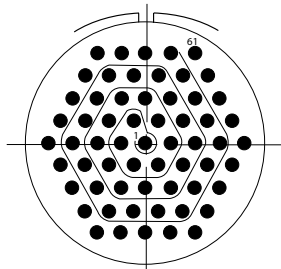
2430Δ  
30 # 16



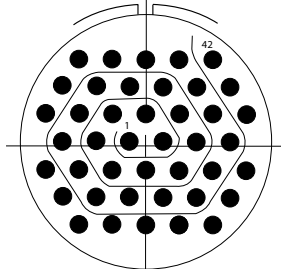
2443  
23 # 20, 20 # 16



2457  
55 # 20, 2 # 12



2461  
61 # 20



2842Δ  
42 # 16

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Δ Non MIL-STD-1554 layout, available to Aero-Electric part number only.