

# MIL-DTL-5015, Matrix®



## TABLE OF CONTENTS FOR SECTION M

Design Characteristics, Customer Options .....2

Insert Availability and Identification .....3, 4

Insert Arrangement Drawings .....5-13

Class Descriptions, Performance Specifications.....14

Insert Alternate Positioning .....15

How to Order, Military and Commercial .....16

Shell Styles:

Wall mounting receptacle threaded MS3450 (9440) .....17

Cable connecting receptacle threaded MS3451 (9441).....18

Box mounting receptacle threaded MS3452 (9442).....19

Jam nut receptacle threaded MS3454 (9444) .....20

Straight plug threaded MS3456 (9446) .....21

Straight plug, self-locking threaded MS3459 (9816) .....22

Quick disconnect plug push-pull coupling (9817/9818).....23

Matrix® 5015 with RADSOK® contacts, for high power .....24

Contact information, sealing plugs, tools .....25

Protection caps, dust caps .....26-28

Additional MIL-DTL-5015 connectors offered by Amphenol .....29

# MIL-DTL-5015 with Crimp Rear Release Contacts



**MS3450  
WALL MOUNTING  
RECEPTACLE**

**MS3451  
CABLE CONNECTING  
RECEPTACLE**

**MS3452  
BOX MOUNTING  
RECEPTACLE**



**MS3454  
JAM NUT RECEPTACLE**



**MS3456  
PLUG WITH  
THREADED COUPLING**



**MS3459  
PLUG WITH  
SELF-LOCKING  
COUPLING NUT**



**COMMERCIAL QUICK  
DISCONNECT PLUG  
WITH/WITHOUT  
LANYARD**

## AMPHENOL BROADENS THEIR MS/STANDARD FAMILY OF CONNECTORS WITH THE MIL-DTL-5015 CRIMP REAR RELEASE SERIES

This series provides an improved alternative to the older MIL-C-5015 solder type. It bridges the gap between an old connector standard and the environmental and high performance needs of current technologies.

### DESIGN CHARACTERISTICS

- Medium to heavy weight environmental cylindrical
- MS345( ) series intermateable with existing MIL-DTL-5015 solder or crimp versions on existing equipment
- Captive coupling nut mechanism, utilizes retaining rings in combination with "L" washers to prevent inadvertent disassembly
- Multiple interlock systems ensure permanent insert retention
- Positive control of dielectric separation with guaranteed ease of contact insertion
- Positive contact retention provided by a closely toleranced damage-proof metal retention clip
- Completely sealed against environmental extremes with -
  - Individual contact seals (conical risers on pin interface)
  - Interfacial seals between contacts
  - Peripheral gasket shell-to-shell seals
  - Redundant rear wire seals and insert-to-shell seals

### CUSTOMER OPTIONS

- Seven mounting styles, in shell sizes 8 to 40
- Threaded coupling or self-locking plug (MS3459) with an internal ratcheting mechanism to prevent unmating due to vibration and shock, eliminating the need for safety wiring
- Proprietary quick disconnect plug, with or without lanyard available
- Classes include aluminum or stainless steel shells, or firewall capability
- Mil-Spec and custom proprietary versions available
- Some styles are supplied to McDonnell Douglas Specification BAN 7025, DC60 Series
- Accommodation of contact sizes 0 to 16
- Over 100 insert arrangement patterns available, accommodating from a minimum of 1 to a maximum of 85 circuits
- Alternate positioning available
- High power RADSOK socket contacts available

NOTE: MIL-C-5015 is superseded to MIL-DTL-5015 for all Amphenol/Matrix rear release crimp type contacts.

# Amphenol Matrix 5015 Connector With RADSOK® Contacts

## FOR HIGH POWER APPLICATIONS

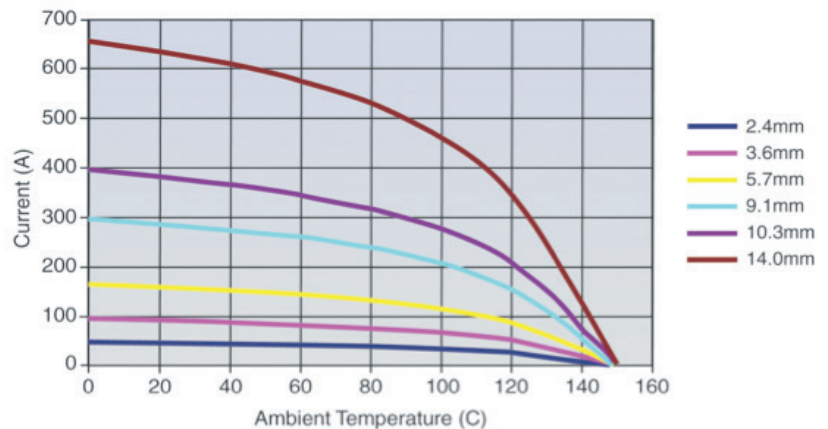
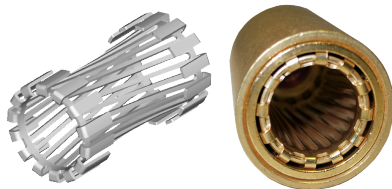
- Completely environmentally sealed with contact seals, gaskets, wire seals and insert-to-shell seals
- Special design enhanced with RADSOK contacts in the plug or receptacle instead of standard rear release crimp contacts
- All the shell styles and finishes of the Matrix 5015 family are available, including firewall styles and non-decoupling style
- Recommended for applications up to 150° operating temperature
- Up to 40% increased current carrying capability
- RADSOK contacts provide high amperage capability with minimal voltage loss and low insertion forces
- The RADSOK contact has a hyperbolic, stamped grid configuration with the socket circular. As a male pin is inserted, axial members in the female socket deflect, enabling high current flow across the connection with minimal voltage loss



**RADSOK**

| Standard Contacts |      |
|-------------------|------|
| Size              | Amps |
| 8                 | 46   |
| 4                 | 80   |
| 0                 | 150  |

| RADSOK Contacts |      |                |
|-----------------|------|----------------|
| Size            | Amps | Cartridge size |
| 8               | 70   | 3.6 MM         |
| 4               | 120  | 5.7MM          |
| 0               | 250  | 9.1MM          |



## NEW RoHS FINISHES

### BLACK ZINC NICKEL IS AMPHENOL'S 2ND RoHS COMPLIANT PLATING ALTERNATIVE TO CADMIUM

Amphenol is now offering a new RoHS compliant alternative to Cadmium. Black Zinc Nickel is a non-reflective and conductive black finish approved for 500 hrs salt spray making it an excellent choice for harsh environments. Black Zinc Nickel has been qualified by the DLA. Black Zinc Nickel is compatible with other platings and available on a wide variety of accessories.

### AMPHENOL'S DURMALON™

Durmalon, like Olive-Drab Cadmium plating (Class W), meets 500 hours of dynamic salt spray, combined with 500 mating cycles and meets specified millivolt drop shell-to-shell conductivity. Durmalon also meets a 200° C temperature rating. Durmalon has been proven to meet this requirement as well as Potassium Formate-Deicer fluid testing performed by Boeing.



**BLACK ZINC NICKLE FINISH**

# Insert Availability and Identification

| Insert Arrangement | Service Rating | Total Contacts | Contact Size |   |   |    |    | Insert Arrangement | Service Rating | Total Contacts | Contact Size |   |   |    |    |
|--------------------|----------------|----------------|--------------|---|---|----|----|--------------------|----------------|----------------|--------------|---|---|----|----|
|                    |                |                | 0            | 4 | 8 | 12 | 16 |                    |                |                | 0            | 4 | 8 | 12 | 16 |
| 8S-1               | A              | 1              |              |   |   |    | 1  | 18-24              | A/Inst.        | 10             |              |   |   |    | 10 |
| 10S-2              | A              | 1              |              |   |   |    | 1  | 18-27•             | D              | 3              |              |   |   | 2  | 1  |
| 10SL-3             | A              | 3              |              |   |   |    | 3  | 18-28•             | D              | 3              |              |   |   | 2  | 1  |
| 10SL-4             | A              | 2              |              |   |   |    | 2  | 20-2               | D              | 1              | 1            |   |   |    |    |
| 12S-1              | A              | 2              |              |   |   |    | 2  | 20-4               | D              | 4              |              |   |   | 4  |    |
| 12S-2              | A              | 2              |              |   |   |    | 2  | 20-7               | D/A            | 8              |              |   |   |    | 8  |
| 12S-3              | A              | 2              |              |   |   |    | 2  | 20-8               | Inst.          | 6              |              |   | 2 |    | 4  |
| 12S-4              | D              | 1              |              |   |   |    | 1  | 20-14              | A              | 5              |              |   | 2 | 3  |    |
| 12-5               | D              | 1              |              |   |   | 1  |    | 20-15              | A              | 7              |              |   |   | 7  |    |
| 14S-2              | Inst.          | 4              |              |   |   |    | 4  | 20-16              | A              | 9              |              |   |   | 2  | 7  |
| 14-3               | A              | 1              |              |   | 1 |    |    | 20-17              | A              | 6              |              |   |   | 5  | 1  |
| 14S-5              | Inst.          | 5              |              |   |   |    | 5  | 20-18              | A              | 9              |              |   |   | 3  | 6  |
| 14S-6              | Inst.          | 6              |              |   |   |    | 6  | 20-19              | A              | 3              |              |   | 3 |    |    |
| 14S-7              | A              | 3              |              |   |   |    | 3  | 20-21              | A              | 9              |              |   |   | 1  | 8  |
| 14S-9**            | A              | 2              |              |   |   |    | 2  | 20-22              | A              | 6              |              |   | 3 |    | 3  |
| 14S-10             | Inst.          | 4              |              |   |   |    | 4  | 20-24              | A              | 4              |              |   | 2 |    | 2  |
| 14S-11             | Inst.          | 4              |              |   |   |    | 4  | 20-27              | A              | 14             |              |   |   |    | 14 |
| 14S-12             | A              | 3              |              |   |   |    | 3  | 20-29              | A              | 17             |              |   |   |    | 17 |
| 14S-13             | A              | 3              |              |   |   |    | 3  | 20-32              | D/A            | 8              |              |   |   |    | 8  |
| 16S-1              | A              | 7              |              |   |   |    | 7  | 20-33              | A              | 11             |              |   |   |    | 11 |
| 16-2*              | E              | 1              |              |   |   | 1  |    | 22-2               | D              | 3              |              |   | 3 |    |    |
| 16S-8              | A              | 5              |              |   |   |    | 5  | 22-5               | D              | 6              |              |   |   | 2  | 4  |
| 16-9               | A              | 4              |              |   |   | 2  | 2  | 22-6*              | D              | 3              |              |   | 2 |    | 1  |
| 16-10              | A              | 3              |              |   |   | 3  |    | 22-7*              | E              | 1              | 1            |   |   |    |    |
| 16-11              | A              | 2              |              |   |   | 2  |    | 22-10*             | E              | 4              |              |   |   |    | 4  |
| 16-12              | A              | 1              |              | 1 |   |    |    | 22-11*             | B              | 2              |              |   |   |    | 2  |
| 16-13              | A              | 2              |              |   |   | 2  |    | 22-14              | A              | 19             |              |   |   |    | 19 |
| 18-1               | A/Inst.        | 10             |              |   |   |    | 10 | 22-19              | A              | 14             |              |   |   |    | 14 |
| 18-4               | D              | 4              |              |   |   |    | 4  | 22-21              | A              | 3              | 1            |   |   |    | 2  |
| 18-5 •             | D              | 3              |              |   |   | 2  | 1  | 22-22              | A              | 4              |              |   | 4 |    |    |
| 18-6*              | D              | 1              |              | 1 |   |    |    | 22-23              | D/A            | 8              |              |   |   | 8  |    |
| 18-8               | A              | 8              |              |   |   | 1  | 7  | 22-30              | A              | 19             |              |   |   |    | 19 |
| 18-9               | Inst.          | 7              |              |   |   | 2  | 5  | 22-32              | D              | 6              |              |   |   | 2  | 4  |
| 18-10**            | A              | 4              |              |   |   | 4  |    | 24-2               | D              | 7              |              |   |   | 7  |    |
| 18-11              | A              | 5              |              |   |   | 5  |    | 24-5**             | A              | 16             |              |   |   |    | 16 |
| 18-12              | A              | 6              |              |   |   |    | 6  |                    |                |                |              |   |   |    |    |
| 18-13              | A              | 4              |              |   | 1 | 3  |    |                    |                |                |              |   |   |    |    |
| 18-15              | A              | 4              |              |   |   | 4  |    |                    |                |                |              |   |   |    |    |
| 18-17              | Inst.          | 7              |              |   |   | 2  | 5  |                    |                |                |              |   |   |    |    |
| 18-18              | Inst.          | 7              |              |   |   | 2  | 5  |                    |                |                |              |   |   |    |    |
| 18-19**            | A              | 10             |              |   |   |    | 10 |                    |                |                |              |   |   |    |    |
| 18-22**            | D              | 3              |              |   |   |    | 3  |                    |                |                |              |   |   |    |    |
| 18-23              | A/Inst.        | 10             |              |   |   |    | 10 |                    |                |                |              |   |   |    |    |

\* Consult Amphenol Aerospace for availability

\*\* Inactive for new design

• Socket Only

5015

MATRIX

M

# Insert Availability and Identification

| Insert Arrangement | Service Rating | Total Contacts | Contact Size |   |   |    |    |  | Insert Arrangement                                                          | Service Rating | Total Contacts | Contact Size |   |   |    |    |    |
|--------------------|----------------|----------------|--------------|---|---|----|----|--|-----------------------------------------------------------------------------|----------------|----------------|--------------|---|---|----|----|----|
|                    |                |                | 0            | 4 | 8 | 12 | 16 |  |                                                                             |                |                | 0            | 4 | 8 | 12 | 16 |    |
| 24-7               | A              | 16             |              |   |   | 2  | 14 |  | 32-63                                                                       | D              | 5              |              | 5 |   |    |    |    |
| 24-10              | A              | 7              |              |   | 7 |    |    |  | 32-73                                                                       | A              | 46             |              |   |   |    |    | 46 |
| 24-11              | A              | 9              |              |   | 3 | 6  |    |  | 36-3                                                                        | D              | 6              | 3            |   |   |    | 3  |    |
| 24-12              | A              | 5              |              | 2 |   | 3  |    |  | 36-5                                                                        | A              | 4              | 4            |   |   |    |    |    |
| 24-15              | A              | 16             |              |   |   |    | 16 |  | 36-6                                                                        | A              | 6              | 2            | 4 |   |    |    |    |
| 24-20              | D              | 11             |              |   |   | 2  | 9  |  | 36-7                                                                        | A              | 47             |              |   |   |    | 7  | 40 |
| 24-22              | D              | 4              |              |   | 4 |    |    |  | 36-8                                                                        | A              | 47             |              |   |   |    | 1  | 46 |
| 24-24              | A              | 16             |              |   |   |    | 16 |  | 36-9                                                                        | A              | 31             |              | 1 | 2 | 14 | 14 |    |
| 24-28              | Inst.          | 24             |              |   |   |    | 24 |  | 36-10                                                                       | A              | 48             |              |   |   |    |    | 48 |
| 28-1               | D/A            | 9              |              |   | 3 | 6  |    |  | 36-11                                                                       | A              | 48             |              |   |   |    |    | 48 |
| 28-2               | D              | 14             |              |   |   | 2  | 12 |  | 36-12                                                                       | A              | 48             |              |   |   |    |    | 48 |
| 28-9               | D              | 12             |              |   |   | 6  | 6  |  | 36-15                                                                       | D/A            | 35             |              |   |   |    |    | 35 |
| 28-10              | D/A            | 7              |              | 2 | 2 | 3  |    |  | 36-16                                                                       | A              | 47             |              |   |   |    | 7  | 40 |
| 28-11              | A              | 22             |              |   |   | 4  | 18 |  | 36-17                                                                       | A              | 47             |              |   |   |    | 7  | 40 |
| 28-12              | A              | 26             |              |   |   |    | 26 |  | 36-18                                                                       | A              | 31             |              | 1 | 2 | 14 | 14 |    |
| 28-13              | A              | 26             |              |   |   |    | 26 |  | 36-21                                                                       | A              | 31             |              | 1 | 2 | 14 | 14 |    |
| 28-15              | A              | 35             |              |   |   |    | 35 |  | 36-52                                                                       | A              | 52             |              |   |   |    |    | 52 |
| 28-17              | B/D/A          | 15             |              |   |   |    | 15 |  | 40-1                                                                        | D              | 30             |              |   |   |    | 6  | 24 |
| 28-19*             | B/D/A          | 10             |              |   |   | 4  | 6  |  | 40-9                                                                        | A              | 47             |              |   | 1 | 22 | 24 |    |
| 28-20              | A              | 14             |              |   |   | 10 | 4  |  | 40-56                                                                       | A              | 85             |              |   |   |    |    | 85 |
| 28-21              | A              | 37             |              |   |   |    | 37 |  | * Consult Amphenol Aerospace for availability<br>** Inactive for new design |                |                |              |   |   |    |    |    |
| 28-22              | D              | 6              |              | 3 |   |    | 3  |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-1               | E/D            | 5              | 2            |   |   | 3  |    |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-6               | A              | 23             |              | 2 | 3 | 2  | 16 |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-7               | Inst./A        | 35             |              |   |   | 7  | 28 |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-9               | D              | 14             |              | 2 |   |    | 12 |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-13              | D              | 23             |              |   |   | 5  | 18 |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-15              | D              | 8              | 2            |   |   | 6  |    |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-16              | A              | 23             |              | 2 | 3 | 2  | 16 |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-17              | D              | 4              |              | 4 |   |    |    |  |                                                                             |                |                |              |   |   |    |    |    |
| 32-19              | E/D            | 5              | 2            |   |   | 3  |    |  |                                                                             |                |                |              |   |   |    |    |    |

# Insert Arrangements

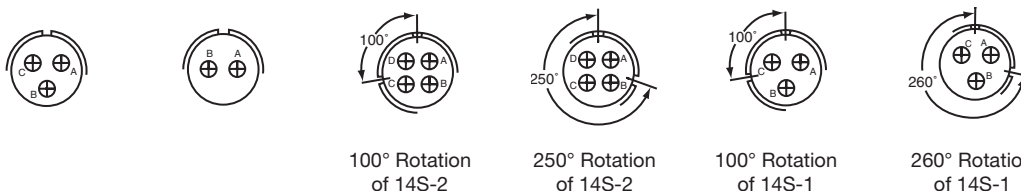
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



| Insert Arrangement | 8S-1 | 10S-2 | 10SL-3 | 10SL-4 | 12S-1 | 12S-2 | 12S-3 |
|--------------------|------|-------|--------|--------|-------|-------|-------|
| Service Rating     | A    | A     | A***   | A      | A     | A     | A     |
| Number of Contacts | 1    | 1     | 3      | 2      | 2     | 2     | 2     |
| Contact Size       | 16   | 16    | 16     | 16     | 16    | 16    | 16    |



| Insert Arrangement | 12S-4 | 12-5 | 14S-2 | 14-3 | 14S-5 | 14S-6 |
|--------------------|-------|------|-------|------|-------|-------|
| Service Rating     | D     | D    | Inst. | A    | Inst. | Inst. |
| Number of Contacts | 1     | 1    | 4     | 1    | 5     | 6     |
| Contact Size       | 16    | 12   | 16    | 8    | 16    | 16    |



| Insert Arrangement | 14S-7 | 14S-9** | 14S-10 | 14S-11 | 14S-12 | 14S-13 |
|--------------------|-------|---------|--------|--------|--------|--------|
| Service Rating     | A     | A       | Inst.  | Inst.  | A      | A      |
| Number of Contacts | 3     | 2       | 4      | 4      | 3      | 3      |
| Contact Size       | 16    | 16      | 16     | 16     | 16     | 16     |



| Insert Arrangement | 16S-1 | 16-2* | 16S-8 | 16-9 | 16-10 | 16-11 |
|--------------------|-------|-------|-------|------|-------|-------|
| Service Rating     | A     | E     | A     | A    | A     | A     |
| Number of Contacts | 7     | 1     | 5     | 2    | 3     | 2     |
| Contact Size       | 16    | 12    | 16    | 12   | 12    | 12    |



| Insert Arrangement | 16-12 | 16-13 | 18-1                            | 18-4 | 18-5 • | 18-6* |
|--------------------|-------|-------|---------------------------------|------|--------|-------|
| Service Rating     | A     | A     | B, C, F, G = A;<br>Bal. = Inst. | D    | D      | D     |
| Number of Contacts | 1     | 2†    | 10                              | 4    | 2      | 1     |
| Contact Size       | 4     | 12    | 16                              | 16   | 12     | 4     |

\* Consult Amphenol Aerospace for availability.

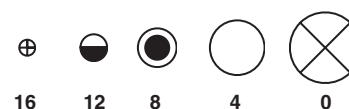
\*\* Inactive for new design

\*\*\* Service rating Inst. Class K

• Socket only

† One Iron contact and one Constantan contact

CONTACT LEGEND



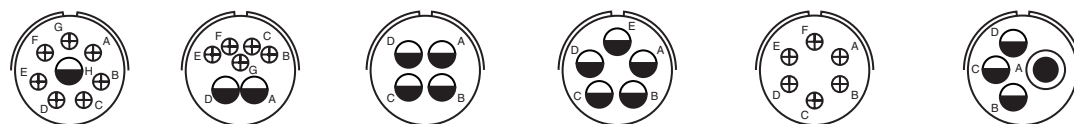
5015

MATRIX

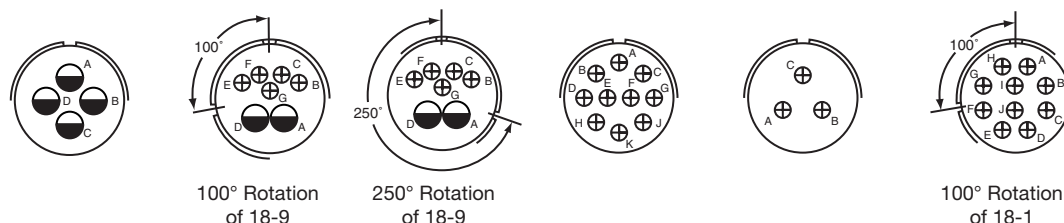
M

# Insert Arrangements

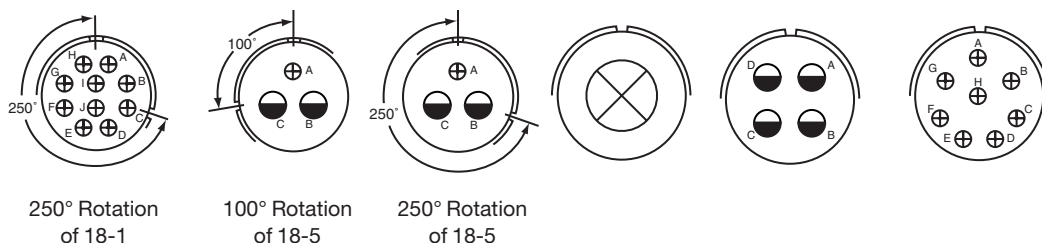
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



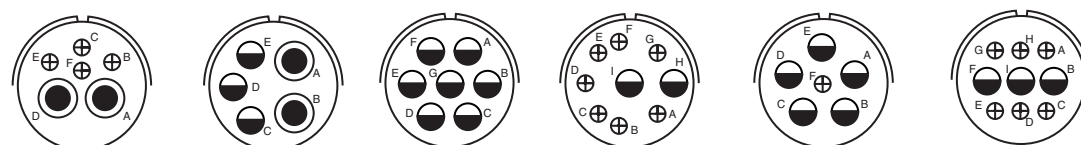
| Insert Arrangement | 18-8* |    | 18-9  |    | 18-10** |  | 18-11 |  | 18-12 |  | 18-13 |    |
|--------------------|-------|----|-------|----|---------|--|-------|--|-------|--|-------|----|
| Service Rating     | A     |    | Inst. |    | A       |  | A     |  | A     |  | A     |    |
| Number of Contacts | 1     | 7  | 2     | 5  | 4       |  | 5     |  | 6     |  | 1     | 3  |
| Contact Size       | 12    | 16 | 12    | 16 | 12      |  | 12    |  | 16    |  | 8     | 12 |



| Insert Arrangement | 18-15 | 18-17 |    | 18-18 |    | 18-19** | 18-22** | 18-23                        |
|--------------------|-------|-------|----|-------|----|---------|---------|------------------------------|
| Service Rating     | A     | Inst. |    | Inst. |    | A       | D       | B, C, F, G = A; Bal. = Inst. |
| Number of Contacts | 4††   | 2     | 5  | 2     | 5  | 10      | 3       | 10                           |
| Contact Size       | 12    | 12    | 16 | 12    | 16 | 16      | 16      | 16                           |



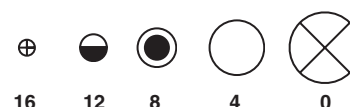
| Insert Arrangement | 18-24                        | 18-27 • |    | 18-28 • |    | 20-2 | 20-4 | 20-7                             |
|--------------------|------------------------------|---------|----|---------|----|------|------|----------------------------------|
| Service Rating     | B, C, F, G = A; Bal. = Inst. | D       |    | D       |    | D    | D    | A, B, G, H = D<br>C, D, E, F = A |
| Number of Contacts | 10                           | 2       | 1  | 2       | 1  | 1    | 4    | 8                                |
| Contact Size       | 16                           | 12      | 16 | 12      | 16 | 0    | 12   | 16                               |



| Insert Arrangement | 20-8* |    | 20-14 |    | 20-15 | 20-16 |    | 20-17 |    | 20-18 |    |
|--------------------|-------|----|-------|----|-------|-------|----|-------|----|-------|----|
| Service Rating     | Inst. |    | A     |    | A     | A     |    | A     |    | A     |    |
| Number of Contacts | 2     | 4  | 2     | 3  | 7     | 2     | 7  | 5     | 1  | 3     | 6  |
| Contact Size       | 8     | 16 | 8     | 12 | 12    | 12    | 16 | 12    | 16 | 12    | 16 |

- \* Consult Amphenol Aerospace for availability.
- \*\* Inactive for new design
- Socket only
- †† A, C = Iron; B, D = Constantan

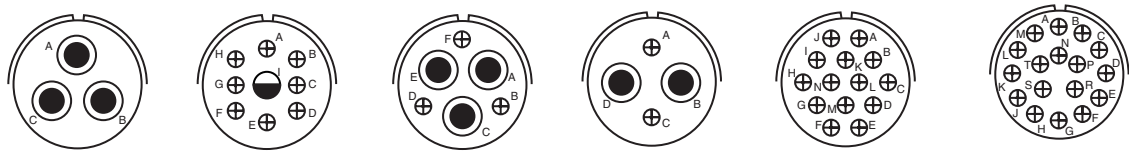
## CONTACT LEGEND



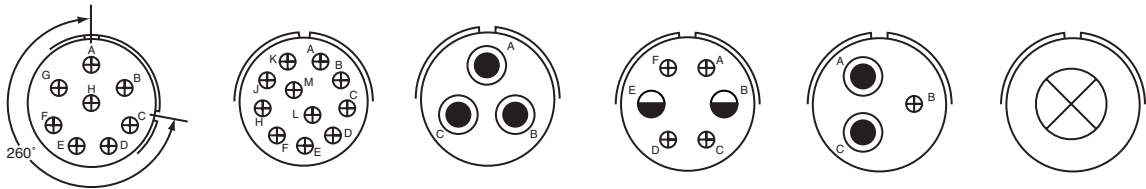


# Insert Arrangements

Front Face of Pin Insert or Rear Face of Socket Insert Illustrated

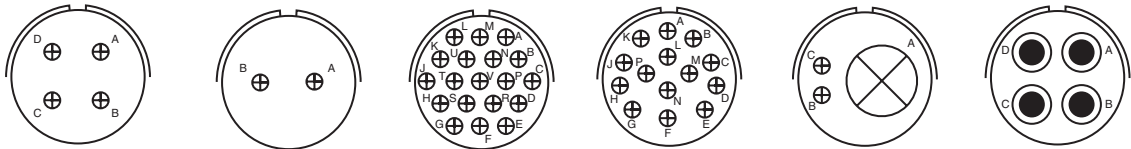


| Insert Arrangement | 20-19 |  | 20-21 |    | 20-22 |    | 20-24 |    | 20-27 |  | 20-29 |
|--------------------|-------|--|-------|----|-------|----|-------|----|-------|--|-------|
| Service Rating     | A     |  | A     |    | A     |    | A     |    | A     |  | A     |
| Number of Contacts | 3     |  | 1     | 8  | 3     | 3  | 2     | 2  | 14    |  | 17    |
| Contact Size       | 8     |  | 12    | 16 | 8     | 16 | 8     | 16 | 16    |  | 16    |

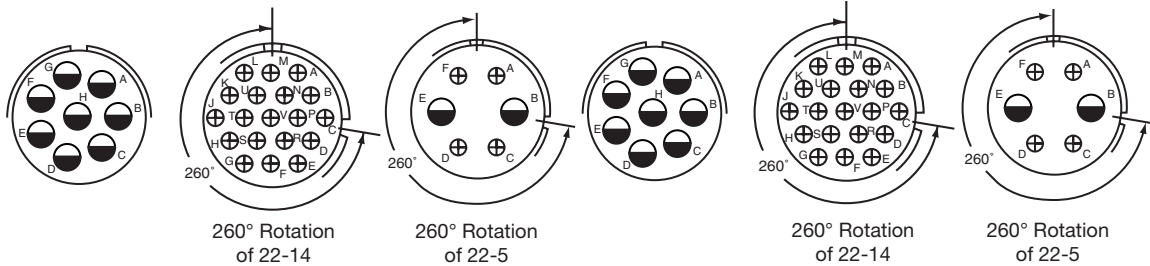


260° Rotation of 20-7

| Insert Arrangement | 20-32                    | 20-33 | 22-2 | 22-5 |    | 22-6** |    | 22-7* |
|--------------------|--------------------------|-------|------|------|----|--------|----|-------|
| Service Rating     | A, B, G, H = D; Bal. = A | A     | D    | D    |    | D      |    | E     |
| Number of Contacts | 8                        | 11    | 3    | 2    | 4  | 2      | 1  | 1     |
| Contact Size       | 16                       | 16    | 8    | 12   | 16 | 8      | 16 | 0     |



| Insert Arrangement | 22-10* | 22-11* | 22-14 | 22-19 | 22-21 |    | 22-22 |
|--------------------|--------|--------|-------|-------|-------|----|-------|
| Service Rating     | E      | B      | A     | A     | A     |    | A     |
| Number of Contacts | 4      | 2      | 19    | 14    | 1     | 2  | 4     |
| Contact Size       | 16     | 16     | 16    | 16    | 0     | 16 | 8     |

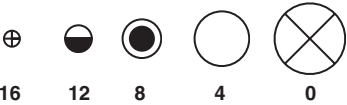


| Insert Arrangement | 22-23           | 22-30 | 22-32 |    | 22-33           | 22-34 | 22-35 |    |
|--------------------|-----------------|-------|-------|----|-----------------|-------|-------|----|
| Service Rating     | H = D; Bal. = A | A     | D     |    | H = D; Bal. = A | A     | D     |    |
| Number of Contacts | 8               | 19    | 2     | 4  | 8               | 19    | 2     | 4  |
| Contact Size       | 12              | 16    | 12    | 16 | 12              | 16    | 12    | 16 |

\*Consult Amphenol Aerospace for availability.

\*\* Inactive for new design

## CONTACT LEGEND



5015

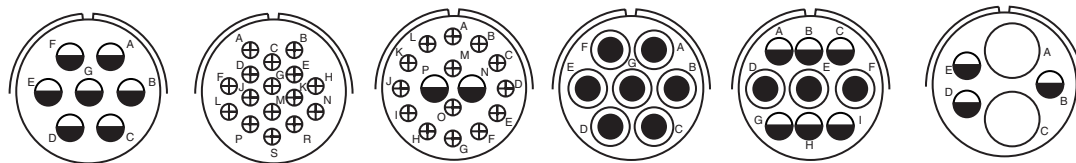
MATRIX

M

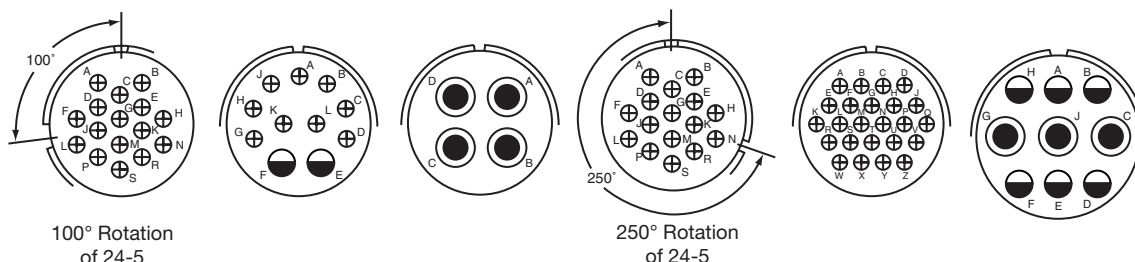


# Insert Arrangements

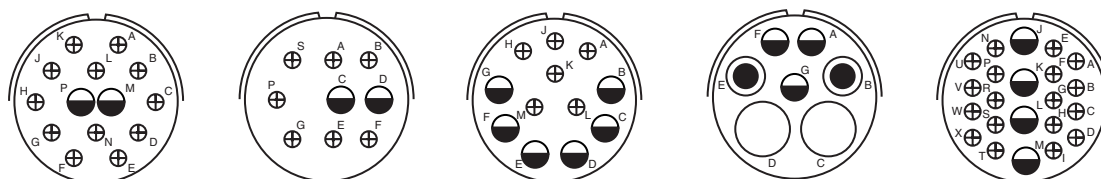
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



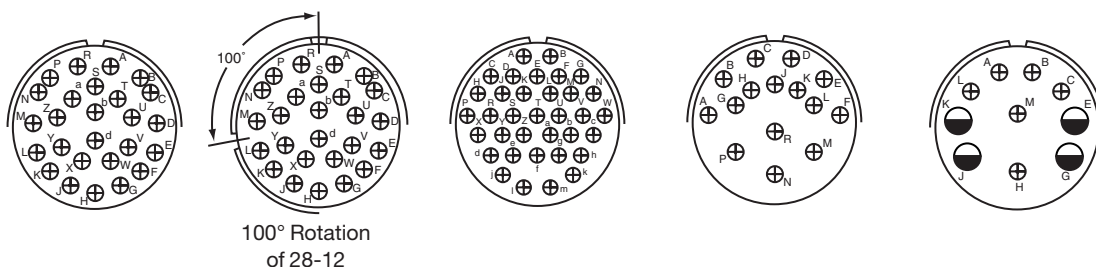
| Insert Arrangement | 24-2 | 24-5** | 24-7    | 24-10 | 24-11  | 24-12  |
|--------------------|------|--------|---------|-------|--------|--------|
| Service Rating     | D    | A      | A       | A     | A      | A      |
| Number of Contacts | 7    | 16     | 2   14  | 7     | 3   6  | 2   3  |
| Contact Size       | 12   | 16     | 12   16 | 8     | 8   12 | 4   12 |



| Insert Arrangement | 24-15  | 24-20 | 24-22 | 24-24 | 24-28 | 28-1                     |
|--------------------|--------|-------|-------|-------|-------|--------------------------|
| Service Rating     | A      | D     | D     | A     | Inst. | A, J, E = D;<br>Bal. = A |
| Number of Contacts | 16   1 | 9     | 4     | 16    | 24    | 2   7                    |
| Contact Size       | 16   8 | 16    | 8     | 16    | 16    | 12   6                   |



| Insert Arrangement | 28-2    | 28-4*                 | 28-9    | 28-10           | 28-11   |
|--------------------|---------|-----------------------|---------|-----------------|---------|
| Service Rating     | D       | G, P, S = E; Bal. = D | D       | G = D, Bal. = A | A       |
| Number of Contacts | 2   12  | 2   7                 | 6   6   | 2   2   3       | 4   18  |
| Contact Size       | 12   16 | 12   16               | 12   16 | 4   8   12      | 12   16 |

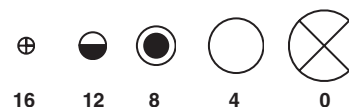


| Insert Arrangement | 28-12 | 28-13 | 28-15 | 28-17                           | 28-19*                          |
|--------------------|-------|-------|-------|---------------------------------|---------------------------------|
| Service Rating     | A     | A     | A     | R = B; M, N, P = D;<br>Bal. = A | H, M = B; A, B = D;<br>Bal. = A |
| Number of Contacts | 26    | 26    | 35    | 15                              | 4   6                           |
| Contact Size       | 16    | 16    | 16    | 16                              | 12   16                         |

\*Consult Amphenol Aerospace for availability.

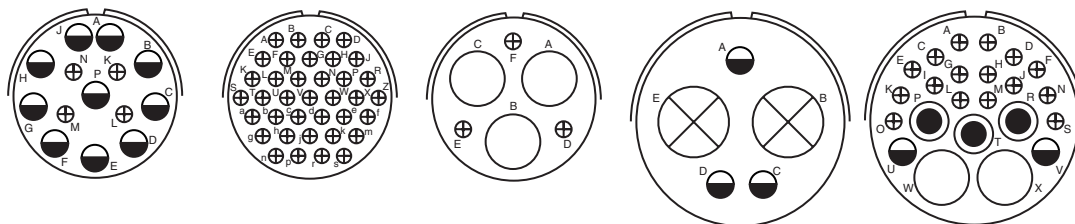
\*\* Inactive for new design

## CONTACT LEGEND

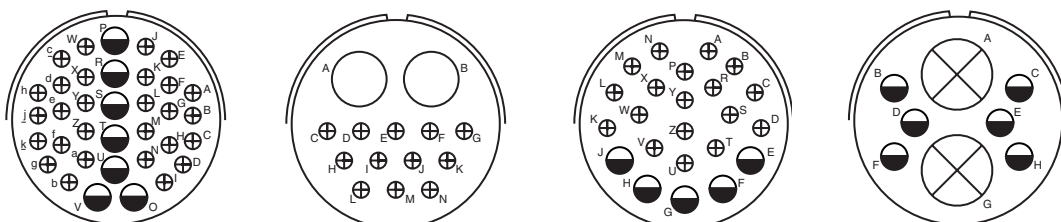


# Insert Arrangements

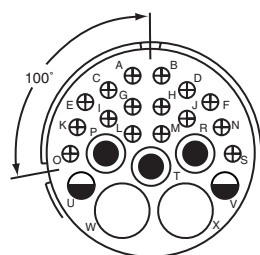
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



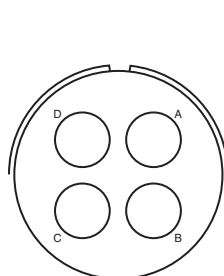
| Insert Arrangement | 28-20 |    | 28-21 |  | 28-22 |    | 32-1                  |    | 32-6 |   |    |    |
|--------------------|-------|----|-------|--|-------|----|-----------------------|----|------|---|----|----|
| Service Rating     | A     |    | A     |  | D     |    | A = E; B, C, D, E = D |    | A    |   |    |    |
| Number of Contacts | 10    | 4  | 37    |  | 3     | 3  | 2                     | 3  | 2    | 3 | 2  | 16 |
| Contact Size       | 12    | 16 | 16    |  | 4     | 16 | 0                     | 12 | 4    | 8 | 12 | 16 |



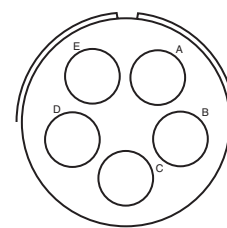
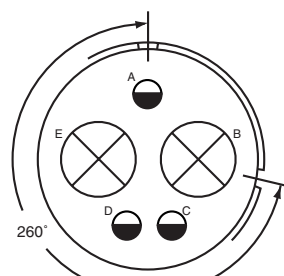
| Insert Arrangement | 32-7                         |    | 32-9 |    | 32-13 |    | 32-15 |    |
|--------------------|------------------------------|----|------|----|-------|----|-------|----|
| Service Rating     | A, B, h, j = Inst.; Bal. = A |    | D    |    | D     |    | D     |    |
| Number of Contacts | 7                            | 28 | 2    | 12 | 5     | 18 | 2     | 6  |
| Contact Size       | 12                           | 16 | 4    | 16 | 12    | 16 | 0     | 12 |



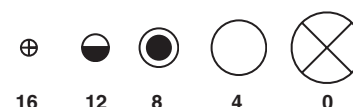
100° Rotation  
of 32-6



260° Rotation  
of 32-1



| Insert Arrangement | 32-16 |   |    |    | 32-17 |  | 32-19           |    | 32-63 |  |  |   |
|--------------------|-------|---|----|----|-------|--|-----------------|----|-------|--|--|---|
| Service Rating     | A     |   |    |    | D     |  | A = E, Bal. = D |    | D     |  |  |   |
| Number of Contacts | 2     | 3 | 2  | 16 | 4     |  | 2               | 3  |       |  |  | 5 |
| Contact Size       | 4     | 8 | 12 | 16 | 4     |  | 0               | 12 |       |  |  | 4 |



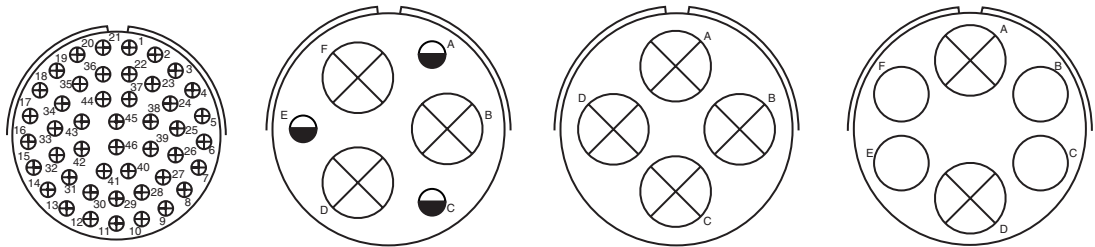
CONTACT LEGEND

5015

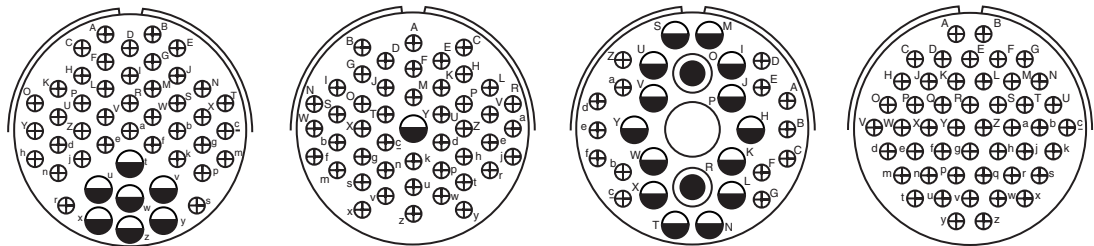
MATRIX

M

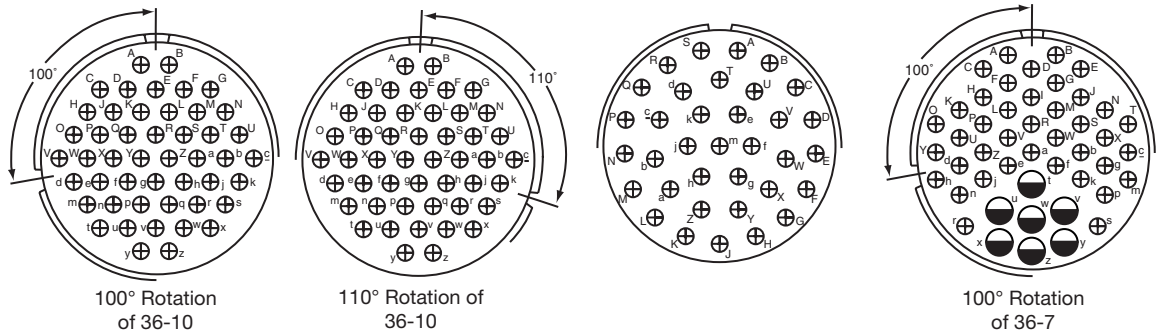
Front Face of Pin Insert or Rear Face of Socket Insert Illustrated



| Insert Arrangement | 32-73 |  | 36-3 |    | 36-5 |  | 36-6 |   |
|--------------------|-------|--|------|----|------|--|------|---|
| Service Rating     | A     |  | D    |    | A    |  | A    |   |
| Number of Contacts | 46    |  | 3    | 3  | 4    |  | 2    | 4 |
| Contact Size       | 16    |  | 0    | 12 | 0    |  | 0    | 4 |

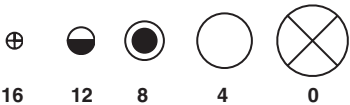


| Insert Arrangement | 36-7 |    | 36-8 |    | 36-9 |   |    |    | 36-10 |
|--------------------|------|----|------|----|------|---|----|----|-------|
| Service Rating     | A    |    | A    |    | A    |   |    |    | A     |
| Number of Contacts | 7    | 40 | 1    | 46 | 1    | 2 | 14 | 14 | 48    |
| Contact Size       | 12   | 16 | 12   | 16 | 4    | 8 | 12 | 16 | 16    |



| Insert Arrangement | 36-11 | 36-12 | 36-15           | 36-16 |    |
|--------------------|-------|-------|-----------------|-------|----|
| Service Rating     | A     | A     | M = D, Bal. = A | A     |    |
| Number of Contacts | 48    | 48    | 35              | 7     | 40 |
| Contact Size       | 16    | 16    | 16              | 12    | 16 |

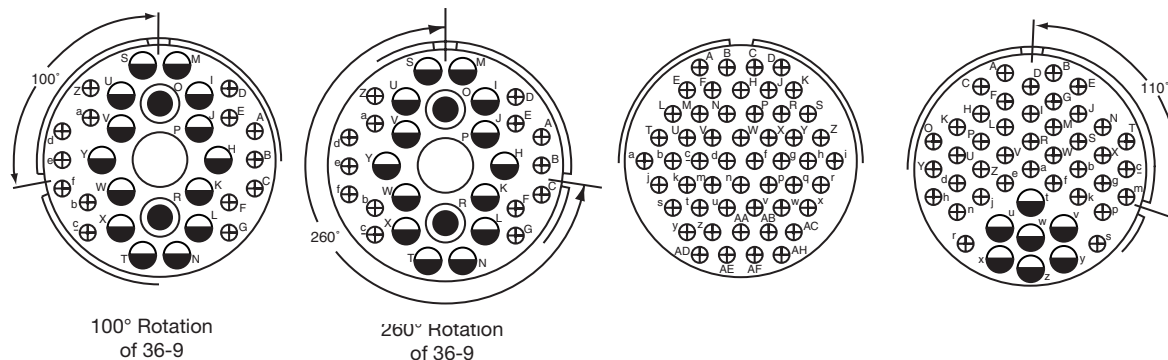
CONTACT LEGEND



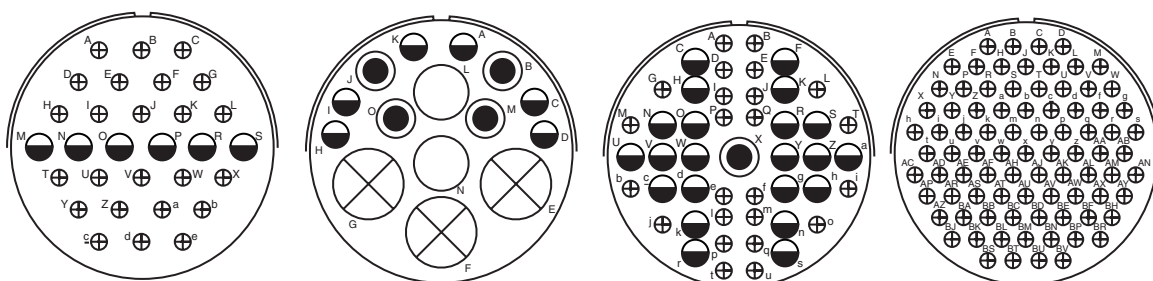
# Insert Arrangements

Front Face of Pin Insert or Rear Face of Socket Insert Illustrated

110° Rotation of  
36-7



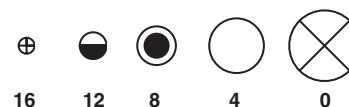
| Insert Arrangement | 36-18 |   |    |    | 36-21 |   |    |    | 36-52 |  | 36-17 |    |
|--------------------|-------|---|----|----|-------|---|----|----|-------|--|-------|----|
| Service Rating     | A     |   |    |    | A     |   |    |    | A     |  | A     |    |
| Number of Contacts | 1     | 2 | 14 | 14 | 1     | 2 | 14 | 14 | 52    |  | 7     | 40 |
| Contact Size       | 4     | 8 | 12 | 16 | 4     | 8 | 12 | 16 | 16    |  | 12    | 16 |



| Insert Arrangement | 40-1 |    | 40-5* |   |   |   | 40-9 |    |    | 40-56 |  |
|--------------------|------|----|-------|---|---|---|------|----|----|-------|--|
| Service Rating     | D    |    | A     |   |   |   | A    |    |    | A     |  |
| Number of Contacts | 6    | 24 | 3     | 2 | 4 | 6 | 1    | 22 | 24 | 85    |  |
| Contact Size       | 12   | 16 | 0     | 4 | 8 | 2 | 6    | 12 | 16 | 16    |  |

\* Consult Amphenol Aerospace for availability.

## CONTACT LEGEND



## CLASS DESCRIPTIONS

| MILITARY MIL-DTL-5015 |                                                                                                            | AMPHENOL/MATRIX |                                                                                                            |
|-----------------------|------------------------------------------------------------------------------------------------------------|-----------------|------------------------------------------------------------------------------------------------------------|
| Class L*              | Aluminum shell, electroless nickel finish, fluid resistant insert                                          | Class A         | Aluminum shell, black anodize finish, fluid resistant insert                                               |
| Class W               | Aluminum shell, cadmium olive drab finish, fluid resistant insert                                          | Class F         | Aluminum shell, electroless nickel finish, fluid resistant insert                                          |
| Class LS              | Stainless steel shell, passivated, fluid resistant insert                                                  | Class W         | Aluminum shell, cadmium/olive drab finish, fluid resistant insert                                          |
| Class KT**            | Firewall, steel shell, cadmium olive drab finish, non-flammable hard dielectric and fluid resistant insert | Class FS        | Stainless steel shell, passivated, fluid resistant insert                                                  |
| Class KS              | Firewall, stainless steel shell, passivated, non-flammable hard dielectric and fluid resistant insert      | Class KT        | Firewall, steel shell, cadmium olive drab finish, non-flammable hard dielectric and fluid resistant insert |
|                       |                                                                                                            | Class KS        | Firewall, stainless steel shell, passivated, non-flammable hard dielectric and fluid resistant insert      |
|                       |                                                                                                            | Class DT        | Aluminum shell, Durmalon (Nickel PTFE)                                                                     |
|                       |                                                                                                            | Class DZ        | Aluminum shell, Black Zinc Nickel*                                                                         |

\* Class L inactivates older Class U (aluminum, electroless nickel)

\*\* Class KT (ferrous alloy, cadmium/olive drab) inactivates older Class K (ferrous alloy, electroless nickel)

\* Not available in size 36 or 40

## PERFORMANCE SPECIFICATIONS

| VOLTAGE RATING |       |      |      |      |      |      |
|----------------|-------|------|------|------|------|------|
| Altitude       | Inst. | A    | D    | E    | B    | C    |
| Sea Level      | 1000  | 2000 | 2800 | 3500 | 4500 | 7000 |
| 50,000 ft.     | 400   | 600  | 675  | 750  | 825  | 975  |
| 70,000 ft.     | 260   | 360  | 400  | 440  | 480  | 560  |
| 110,000 ft.    | 200   | 200  | 200  | 200  | 200  | 200  |

### SHOCK

Wired, mated connectors are subjected to one shock in each of three mutually perpendicular axes with pulse of an approximate half sine wave of 50g magnitude for a duration of 11 milliseconds. All contacts wired in series circuit with  $100 \pm 10$  Milliamperes of current flow.

### OPERATING TEMPERATURE RANGE

Classes L, LS and KS have temperature range of  $-55^{\circ}\text{C}$  ( $-75^{\circ}\text{F}$ ) to  $200^{\circ}\text{C}$  ( $392^{\circ}\text{F}$ )

Classes W and KT have temperature range of  $-55^{\circ}\text{C}$  ( $-75^{\circ}\text{F}$ ) to  $175^{\circ}\text{C}$  ( $347^{\circ}\text{F}$ )

### ENVIRONMENTAL SEAL

Wired, mated connectors with the specified accessory attached will meet the altitude immersion test specified in MIL-DTL-5015.

### DURABILITY

Minimum of 100 mating cycles.

5015

MATRIX

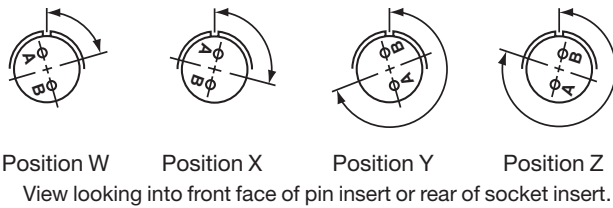
M

# Insert Alternate Positioning

To avoid cross-plugging problems in applications requiring the use of more than one connector of the same size and arrangement, alternate rotations are available as indicated in the accompanying charts.

As shown in the diagram below, the front face of the pin insert is rotated within the shell in a clockwise direction from the normal shell key. The socket insert would be rotated counter-clockwise the same number of degrees in respect to the normal shell key.

The charts give the W, X, Y, Z positions for the alternate rotations available for the insert arrangements of the rear release MIL-DTL-5015 series of connectors. If an insert arrangement number is not given, then there is no available alternate rotation for that pattern.



The following insert arrangements have the same alternate insert rotations for W, X, Y and Z, which are:

| Degrees |     |     |     |
|---------|-----|-----|-----|
| W       | X   | Y   | Z   |
| 80      | 110 | 250 | 280 |

|       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|
| 16-7  | 20-22 | 24-4  | 28-4  | 28-21 | 40-3  |
| 18-5  | 22-6  | 24-5  | 28-8  | 32-1  | 40-4  |
| 18-9  | 22-12 | 24-6  | 28-9  | 32-3  | 40-5  |
| 18-13 | 22-14 | 24-7  | 28-10 | 32-6  | 40-6  |
| 18-14 | 22-15 | 24-12 | 28-11 | 32-9  | 40-7  |
| 20-7  | 22-17 | 24-16 | 28-15 | 32-13 | 40-11 |
| 20-8  | 22-18 | 24-20 | 28-16 | 32-22 |       |
| 20-9  | 22-19 | 24-21 | 28-17 | 36-7  |       |
| 20-14 | 22-21 | 24-28 | 28-19 | 36-8  |       |
| 20-16 | 24-1  | 28-1  | 28-20 | 40-2  |       |

| Insert Arrangement | Degrees |     |     |     |
|--------------------|---------|-----|-----|-----|
|                    | W       | X   | Y   | Z   |
| 12S-3              | 70      | 145 | 215 | 290 |
| 14S-2              | -       | 120 | 240 | -   |
| 14S-5              | -       | 110 | -   | -   |
| 14S-7              | 90      | 180 | 270 | -   |
| 14S-9              | 70      | 145 | 215 | 290 |
| 16S-1              | 80      | -   | -   | 280 |
| 16S-4              | 35      | 110 | 250 | 325 |
| 16S-8              | -       | 170 | 265 | -   |
| 16-9               | 35      | 110 | 250 | 325 |
| 16-10              | 90      | 180 | 270 | -   |
| 16-11              | 35      | 110 | 250 | 325 |
| 16-13              | 35      | 110 | 250 | 325 |
| 18-1               | 70      | 145 | 215 | 290 |
| 18-4               | 35      | 110 | 250 | 325 |
| 18-8               | 70      | -   | -   | 290 |
| 18-10              | -       | 120 | 240 | -   |
| 18-11              | -       | 170 | 265 | -   |
| 18-12              | 80      | -   | -   | 280 |
| 18-15              | -       | 120 | 240 | -   |
| 18-19              | -       | 120 | 240 | -   |
| 18-22              | 70      | 145 | 215 | 290 |
| 20-4               | 45      | 110 | 250 | -   |
| 20-15              | 80      | -   | -   | 280 |

| Insert Arrangement | Degrees |     |     |     |
|--------------------|---------|-----|-----|-----|
|                    | W       | X   | Y   | Z   |
| 20-17              | 90      | 180 | 270 | -   |
| 20-18              | 35      | 110 | 250 | 325 |
| 20-19              | 90      | 180 | 270 | -   |
| 20-21              | 35      | 110 | 250 | 325 |
| 20-24              | 35      | 110 | 250 | 325 |
| 20-27              | 35      | 110 | 250 | 325 |
| 20-29              | 80      | -   | -   | 280 |
| 22-2               | 70      | 145 | 215 | 290 |
| 22-4               | 35      | 110 | 250 | 325 |
| 22-5               | 35      | 110 | 250 | 325 |
| 22-9               | 70      | 145 | 215 | 290 |
| 22-10              | 35      | 110 | 250 | 325 |
| 22-11              | 35      | 110 | 250 | 325 |
| 22-22              | -       | 110 | 250 | -   |
| 22-23              | 35      | -   | 250 | -   |
| 22-27              | 80      | -   | 250 | 280 |
| 22-36              | 90      | -   | 270 | -   |
| 24-2               | 80      | -   | -   | 280 |
| 24-10              | 80      | -   | -   | 280 |
| 24-11              | 35      | 110 | 250 | 325 |
| 24-22              | 45      | 110 | 250 | -   |
| 24-27              | 80      | -   | -   | 280 |
| 24-80              | 35      | 145 | 240 | 300 |

| Insert Arrangement | Degrees |     |     |     |
|--------------------|---------|-----|-----|-----|
|                    | W       | X   | Y   | Z   |
| 28-2               | 35      | 110 | 250 | 325 |
| 28-3               | 70      | 145 | 215 | 290 |
| 28-5               | 35      | 110 | 250 | 325 |
| 28-12              | 90      | 180 | 270 | -   |
| 28-18              | 70      | 145 | 215 | 290 |
| 28-22              | 70      | 145 | 215 | 290 |
| 32-2               | 70      | 145 | 215 | 290 |
| 32-7               | 80      | 125 | 235 | 280 |
| 32-15              | 35      | 110 | 250 | 280 |
| 32-17              | 45      | 110 | 250 | -   |
| 32-73              | 36      | -   | -   | -   |
| 36-3               | 70      | 145 | 215 | 290 |
| 36-5               | -       | 120 | 240 | -   |
| 36-6               | 35      | 110 | 250 | 325 |
| 36-9               | 80      | 125 | 235 | 280 |
| 36-10              | 80      | 125 | 235 | 280 |
| 36-15              | 60      | 125 | 245 | 305 |
| 36-52              | 72      | 144 | 216 | 288 |
| 36-66              | 110     | 250 | 260 | 280 |
| 40-1               | 65      | 130 | 235 | 300 |
| 40-9               | 65      | 125 | 255 | 310 |
| 40-10              | 65      | 125 | 255 | 310 |
| 40-56              | 72      | 144 | 216 | 288 |
| 40-62              | 30      | 130 | 220 | 290 |

|                                               | 1.             | 2.          | 3.            | 4.                            | 5.            | 6.                  | 7.                  |
|-----------------------------------------------|----------------|-------------|---------------|-------------------------------|---------------|---------------------|---------------------|
| MIL-DTL-5015 with rear release crimp contacts | Connector Type | Shell Style | Service class | Shell Size–Insert Arrangement | Contact Types | Alternate Positions | Modification Number |
| MILITARY                                      | MS             | 3456        | L             | 16S-8                         | P             | W                   | NA                  |
| COMMERCIAL                                    | 944            | 6           | F             | 16S-8                         | P             | W                   | (XXX)               |

## 1. MILITARY CONNECTOR TYPE

**MS** Designates Military Standard

## 2. SHELL STYLE - THREADED COUPLING

|             |                                              |
|-------------|----------------------------------------------|
| <b>3450</b> | Wall mounting receptacle                     |
| <b>3451</b> | Cable connecting receptacle                  |
| <b>3452</b> | Box mounting receptacle                      |
| <b>3454</b> | Jam nut receptacle                           |
| <b>3456</b> | Straight plug                                |
| <b>3459</b> | Straight plug with self-locking coupling nut |

## 3. SERVICE CLASS

|           |                                                                   |
|-----------|-------------------------------------------------------------------|
| <b>L</b>  | Aluminum shell, electroless nickel finish, fluid resistant insert |
| <b>W</b>  | Aluminum shell, cadmium olive drab finish, fluid resistant insert |
| <b>LS</b> | Stainless steel shell, passivated, fluid resistant insert         |

### FIREWALL STYLES ONLY AVAILABLE FOR 3450, 3456, 3459 PER MIL SPEC:

|           |                                                                                                            |
|-----------|------------------------------------------------------------------------------------------------------------|
| <b>KT</b> | Firewall, steel shell, cadmium/olive drab finish, non-flammable hard dielectric and fluid resistant insert |
| <b>KS</b> | Firewall, stainless steel shell, passivated, non-flammable hard dielectric and fluid resistant insert      |

Note: Class L inactivates older Class U.

Class K is inactive and has been replaced by Class KT for all applications.

## 4. SHELL SIZE & INSERT ARRANGEMENT SEE PAGES 3-13

First number represents Shell Size,  
second number is the Insert Arrangement.

## 5. CONTACT TYPE

|          |              |
|----------|--------------|
| <b>P</b> | Pin          |
| <b>S</b> | Socket       |
| <b>A</b> | Less pins    |
| <b>B</b> | Less sockets |

## 6. ALTERNATE POSITIONS

“W”, “X”, “Y”, “Z” designate that insert is rotated in its shell from normal position. No letter required for normal (no rotation) position. See page 15 for description of alternate positions.

## 1. COMMERCIAL CONNECTOR TYPE

**944** Designates Amphenol/Matrix Commercial Series

**981** Designates self locking/Quick disconnect (+)(-) lanyard

## 2. SHELL STYLE - THREADED COUPLING

|          |                             |
|----------|-----------------------------|
| <b>0</b> | Wall mounting receptacle    |
| <b>1</b> | Cable connecting receptacle |
| <b>2</b> | Box mounting receptacle     |
| <b>4</b> | Jam nut receptacle          |
| <b>6</b> | Straight plug               |

## 2. SELF LOCKING/QUICK DISCONNECT (981)

|          |                                              |
|----------|----------------------------------------------|
| <b>6</b> | Straight plug with self-locking coupling nut |
| <b>7</b> | Quick disconnect plug with lanyard           |
| <b>8</b> | Quick disconnect plug without lanyard        |

## 3. SERVICE CLASS

|               |                                                                                                            |
|---------------|------------------------------------------------------------------------------------------------------------|
| <b>A</b>      | Aluminum shell, black anodize finish, fluid resistant insert (not MIL-Spec)                                |
| <b>F</b>      | Aluminum shell, electroless nickel finish, fluid resistant insert                                          |
| <b>W</b>      | Aluminum shell, cadmium olive drab finish, fluid resistant insert                                          |
| <b>FS</b>     | Stainless steel shell, passivated, fluid resistant insert                                                  |
| <b>RS</b>     | Fluid resistant insert                                                                                     |
| <b>KT</b>     | Firewall, steel shell, cadmium/olive drab finish, non-flammable hard dielectric and fluid resistant insert |
| <b>KS</b>     | Firewall, stainless steel shell, passivated, non-flammable hard dielectric and fluid resistant insert      |
| <b>NEW DT</b> | Aluminum shell, Durmalon (Nickle PTFE)                                                                     |
| <b>NEW DZ</b> | Aluminum shell, Black Zinc Nickel*                                                                         |

\* Not available in size 36 or 40

## 4. SHELL SIZE & INSERT ARRANGEMENT SEE PAGES 3-13

First number represents Shell Size,  
second number is the Insert Arrangement.

## 5. CONTACT TYPE

|          |        |
|----------|--------|
| <b>P</b> | Pin    |
| <b>S</b> | Socket |

## 6. ALTERNATE POSITIONS

“W”, “X”, “Y”, “Z” designate that insert is rotated in its shell from normal position. No letter required for normal (no rotation) position. See page 15 for description of alternate positions.

## 7. MODIFICATION NUMBER

Consult Amphenol Aerospace for information.

For strain reliefs use the following modification codes:

|       |                                                |
|-------|------------------------------------------------|
| (189) | E-nut M85049/31 configuration                  |
| (190) | Straight strain relief M85049/52 configuration |
| (191) | 90° strain relief M85049/51 configuration      |
| (988) | RADSOK sockets (sizes 0-8 guage only)          |

**NEW**



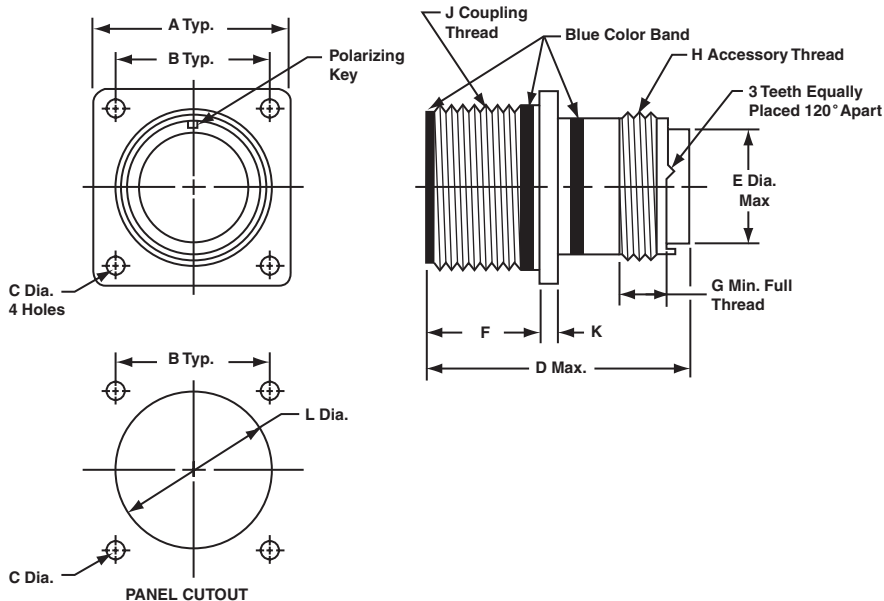
# Wall Mounting Receptacle

## Military (MS3450), Commercial (9440)

PART NUMBER BUILDER PAGE M16

MILITARY  
MS3450

COMMERCIAL



| Shell Size* | A<br>±.031 | B     | C Dia.<br>+.010<br>-.005 |         | D Max.                |                       | E Dia.<br>Max. | F         | G Min. | H Thread<br>Class 2A | J Thread<br>Class 2A | K    | L Dia.<br>±.010 |
|-------------|------------|-------|--------------------------|---------|-----------------------|-----------------------|----------------|-----------|--------|----------------------|----------------------|------|-----------------|
|             |            |       | Class A, F, R, W         | Class K | Size 16 & 12 Contacts | Size 8, 4, 0 Contacts |                |           |        |                      |                      |      |                 |
| 8S          | .875       | .594  | .120                     | .150    | 2.031                 | —                     | .305           | .593/.562 | .290   | .5000-20 UNEF        | .5000-28 UNEF        | .083 | .562            |
| 10S         | 1.000      | .719  | .120                     | .150    | 2.031                 | —                     | .405           | .593/.562 | .290   | .6250-24 UNEF        | .6250-24 UNEF        | .083 | .688            |
| 10SL        | 1.000      | .719  | .120                     | .150    | 2.031                 | —                     | .405           | .593/.562 | .290   | .6250-24 UNEF        | .6250-24 UNEF        | .083 | .688            |
| 12          | 1.094      | .812  | .120                     | .150    | 2.125                 | —                     | .549           | .781/.750 | .290   | .7500-20 UNEF        | .7500-20 UNEF        | .083 | .812            |
| 12S         | 1.094      | .812  | .120                     | .150    | 2.031                 | —                     | .549           | .593/.562 | .290   | .7500-20 UNEF        | .7500-20 UNEF        | .083 | .812            |
| 14          | 1.188      | .906  | .120                     | .150    | 2.125                 | —                     | .665           | .781/.750 | .290   | .8750-20 UNEF        | .8750-20 UNEF        | .083 | .938            |
| 14S         | 1.188      | .906  | .120                     | .150    | 2.031                 | —                     | .665           | .593/.562 | .290   | .8750-20 UNEF        | .8750-20 UNEF        | .083 | .938            |
| 16          | 1.281      | .969  | .120                     | .150    | 2.125                 | 2.500                 | .790           | .781/.750 | .290   | 1.0000-20 UNEF       | 1.0000-20 UNEF       | .083 | 1.062           |
| 16S         | 1.281      | .969  | .120                     | .150    | 2.031                 | —                     | .790           | .593/.562 | .290   | 1.0000-20 UNEF       | 1.0000-20 UNEF       | .083 | 1.062           |
| 18          | 1.375      | 1.062 | .120                     | .177    | 2.125                 | 2.500                 | .869           | .781/.750 | .290   | 1.0625-18 UNEF       | 1.1250-18 UNEF       | .125 | 1.188           |
| 20          | 1.500      | 1.156 | .120                     | .177    | 2.125                 | 2.500                 | .994           | .781/.750 | .290   | 1.1875-18 UNEF       | 1.2500-18 UNEF       | .125 | 1.312           |
| 22          | 1.625      | 1.250 | .120                     | .177    | 2.125                 | 2.500                 | 1.119          | .781/.750 | .290   | 1.3125-18 UNEF       | 1.3750-18 UNEF       | .125 | 1.438           |
| 24          | 1.750      | 1.375 | .147                     | .177    | 2.125                 | 2.500                 | 1.244          | .843/.812 | .290   | 1.4375-18 UNEF       | 1.5000-18 UNEF       | .125 | 1.562           |
| 28          | 2.000      | 1.562 | .147                     | .177    | 2.125                 | 2.500                 | 1.465          | .843/.812 | .467   | 1.7500-18 UNS        | 1.7500-18 UNS        | .125 | 1.812           |
| 32          | 2.250      | 1.750 | .173                     | .209    | 2.125                 | 2.500                 | 1.715          | .906/.875 | .467   | 2.0000-18 UNS        | 2.0000-18 UNS        | .125 | 2.062           |
| 36          | 2.500      | 1.938 | .173                     | .209    | 2.125                 | 2.500                 | 1.930          | .906/.875 | .467   | 2.2500-16 UN         | 2.2500-16 UN         | .125 | 2.312           |
| 40          | 2.750      | 2.188 | .173                     | .209    | 2.125                 | 2.500                 | 2.145          | .906/.875 | .467   | 2.5000-16 UN         | 2.5000-16 UN         | .125 | 2.562           |

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.

5015

MATRIX

M

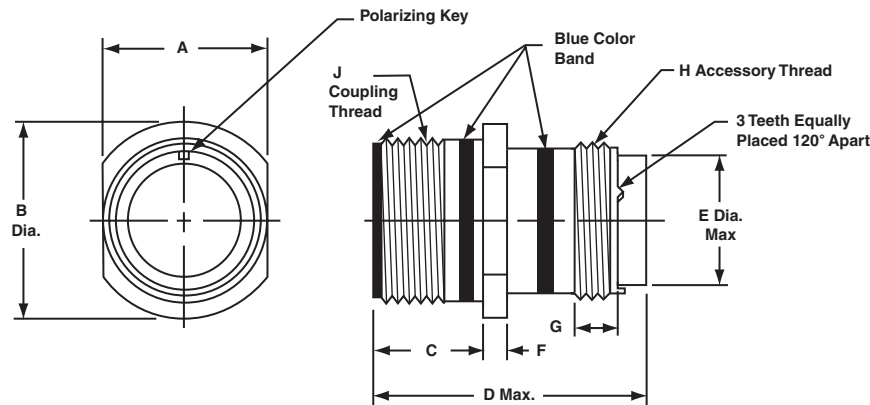
# Cable Connecting Receptacle

## Military (MS3451), Commercial (9441)

PART NUMBER BUILDER PAGE M16

**MILITARY**  
**MS3451**

**COMMERCIAL**  
**9441**



| Shell Size | A           | B Dia. ±.031 | C         | D Max.                |                       | E Dia. Max. | F ±.015 | G Min. | H Thread Class 2A | J Thread Class 2A |
|------------|-------------|--------------|-----------|-----------------------|-----------------------|-------------|---------|--------|-------------------|-------------------|
|            |             |              |           | Size 16 & 12 Contacts | Size 8, 4, 0 Contacts |             |         |        |                   |                   |
| 8S         | .504/.496   | .729         | .577/.562 | 2.031                 | —                     | .305        | .083    | .290   | .5000-20 UNEF     | .5000-28 UNEF     |
| 10S        | .629/.621   | .854         | .577/.562 | 2.031                 | —                     | .405        | .083    | .290   | .6250-24 UNEF     | .6250-24 UNEF     |
| 10SL       | .629/.621   | .854         | .577/.562 | 2.031                 | —                     | .405        | .083    | .290   | .6250-24 UNEF     | .6250-24 UNEF     |
| 12         | .754/.746   | .974         | .765/.750 | 2.125                 | —                     | .549        | .083    | .290   | .7500-20 UNEF     | .7500-20 UNEF     |
| 12S        | .754/.746   | .974         | .577/.562 | 2.031                 | —                     | .549        | .083    | .290   | .7500-20 UNEF     | .7500-20 UNEF     |
| 14         | .879/.871   | 1.099        | .765/.750 | 2.125                 | —                     | .665        | .083    | .290   | .8750-20 UNEF     | .8750-20 UNEF     |
| 14S        | .879/.871   | 1.099        | .577/.562 | 2.031                 | —                     | .665        | .083    | .290   | .8750-20 UNEF     | .8750-20 UNEF     |
| 16         | 1.005/.996  | 1.224        | .765/.750 | 2.125                 | 2.500                 | .790        | .083    | .290   | 1.0000-20 UNEF    | 1.0000-20 UNEF    |
| 16S        | 1.005/.996  | 1.224        | .577/.562 | 2.031                 | —                     | .790        | .083    | .290   | 1.0000-20 UNEF    | 1.0000-20 UNEF    |
| 18         | 1.131/1.121 | 1.349        | .765/.750 | 2.125                 | 2.500                 | .869        | .125    | .290   | 1.0625-18 UNEF    | 1.1250-18 UNEF    |
| 20         | 1.256/1.246 | 1.474        | .765/.750 | 2.125                 | 2.500                 | .994        | .125    | .290   | 1.1875-18 UNEF    | 1.2500-18 UNEF    |
| 22         | 1.381/1.371 | 1.599        | .765/.750 | 2.125                 | 2.500                 | 1.119       | .125    | .290   | 1.3125-18 UNEF    | 1.3750-18 UNEF    |
| 24         | 1.506/1.496 | 1.715        | .827/.812 | 2.125                 | 2.500                 | 1.244       | .125    | .290   | 1.4375-18 UNEF    | 1.5000-18 UNEF    |
| 28         | 1.756/1.746 | 1.974        | .827/.812 | 2.125                 | 2.500                 | 1.465       | .125    | .467   | 1.7500-18 UNS     | 1.7500-18 UNS     |
| 32         | 2.007/1.996 | 2.224        | .890/.870 | 2.125                 | 2.500                 | 1.715       | .125    | .467   | 2.0000-18 UNS     | 2.0000-18 UNS     |
| 36         | 2.257/2.246 | 2.474        | .890/.870 | 2.125                 | 2.500                 | 1.930       | .125    | .467   | 2.2500-16 UN      | 2.2500-16 UN      |
| 40         | 2.511/2.456 | 2.724        | .890/.870 | 2.125                 | 2.500                 | 2.145       | .125    | .467   | 2.5000-16 UN      | 2.5000-16 UN      |

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.

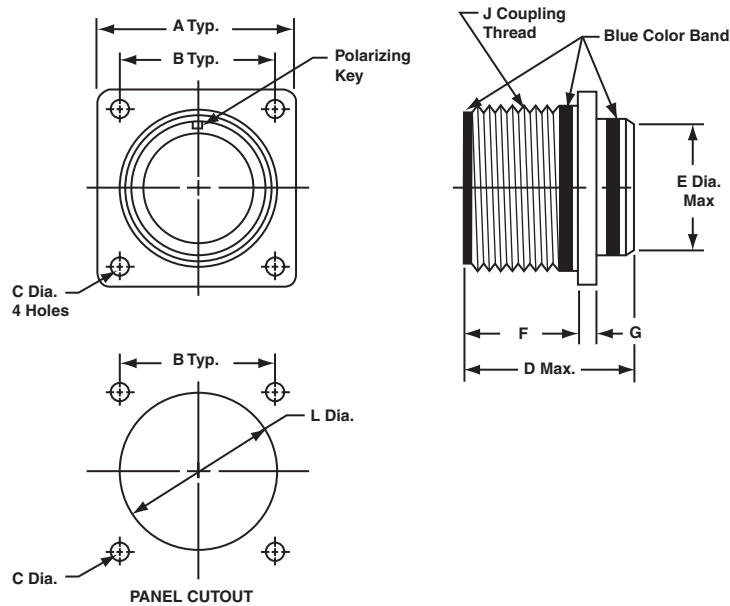
# Box Mounting Receptacle

## Military (MS3452), Commercial (9442)

PART NUMBER BUILDER PAGE M16

MILITARY  
MS3452

COMMERCIAL  
9442



| Shell Size* | A<br>±.031 | B     | C<br>Dia. | D Max.                      |                             | E<br>Dia.<br>±.016 | F         | G<br>±.015 | J<br>Thread<br>Class 2A | L<br>Dia.<br>±.010 |
|-------------|------------|-------|-----------|-----------------------------|-----------------------------|--------------------|-----------|------------|-------------------------|--------------------|
|             |            |       |           | Size<br>16 & 12<br>Contacts | Size<br>8, 4, 0<br>Contacts |                    |           |            |                         |                    |
| 8S          | .875       | .594  | .130/.115 | 1.662                       | —                           | .500               | .578/.562 | .083       | .5000-28 UNEF           | .562               |
| 10S         | 1.000      | .719  | .130/.115 | 1.662                       | —                           | .625               | .578/.562 | .083       | .6250-24 UNEF           | .688               |
| 10SL        | 1.000      | .719  | .130/.115 | 1.662                       | —                           | .625               | .578/.562 | .083       | .6250-24 UNEF           | .688               |
| 12          | 1.094      | .812  | .130/.115 | 1.662                       | —                           | .750               | .765/.750 | .083       | .7500-20 UNEF           | .812               |
| 12S         | 1.094      | .812  | .130/.115 | 1.662                       | —                           | .750               | .578/.562 | .083       | .7500-20 UNEF           | .812               |
| 14          | 1.188      | .906  | .130/.115 | 1.662                       | —                           | .875               | .765/.750 | .083       | .8750-20 UNEF           | .938               |
| 14S         | 1.188      | .906  | .130/.115 | 1.662                       | —                           | .875               | .577/.562 | .083       | .8750-20 UNEF           | .938               |
| 16          | 1.281      | .969  | .130/.115 | 1.662                       | 1.937                       | 1.000              | .765/.750 | .083       | 1.0000-20 UNEF          | 1.062              |
| 16S         | 1.281      | .969  | .130/.115 | 1.662                       | —                           | 1.000              | .577/.562 | .083       | 1.0000-20 UNEF          | 1.062              |
| 18          | 1.375      | 1.062 | .130/.115 | 1.662                       | 1.937                       | 1.062              | .765/.750 | .125       | 1.1250-18 UNEF          | 1.188              |
| 20          | 1.500      | 1.156 | .130/.115 | 1.662                       | 1.937                       | 1.187              | .765/.750 | .125       | 1.2500-18 UNEF          | 1.312              |
| 22          | 1.625      | 1.250 | .130/.115 | 1.662                       | 1.937                       | 1.312              | .765/.750 | .125       | 1.3750-18 UNEF          | 1.438              |
| 24          | 1.750      | 1.375 | .157/.142 | 1.662                       | 1.937                       | 1.437              | .827/.812 | .125       | 1.5000-18 UNEF          | 1.562              |
| 28          | 2.000      | 1.562 | .157/.142 | 1.662                       | 1.937                       | 1.750              | .827/.812 | .125       | 1.7500-18 UNS           | 1.812              |
| 32          | 2.250      | 1.750 | .183/.168 | 1.662                       | 1.937                       | 2.000              | .988/.875 | .125       | 2.0000-18 UNS           | 2.062              |
| 36          | 2.500      | 1.938 | .183/.168 | 1.662                       | 1.937                       | 2.250              | .988/.875 | .125       | 2.2500-16 UN            | 2.312              |
| 40          | 2.750      | 2.188 | .183/.168 | 1.662                       | 1.937                       | 2.500              | .988/.875 | .125       | 2.5000-16 UN            | 2.562              |

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.

5015

MATRIX

M

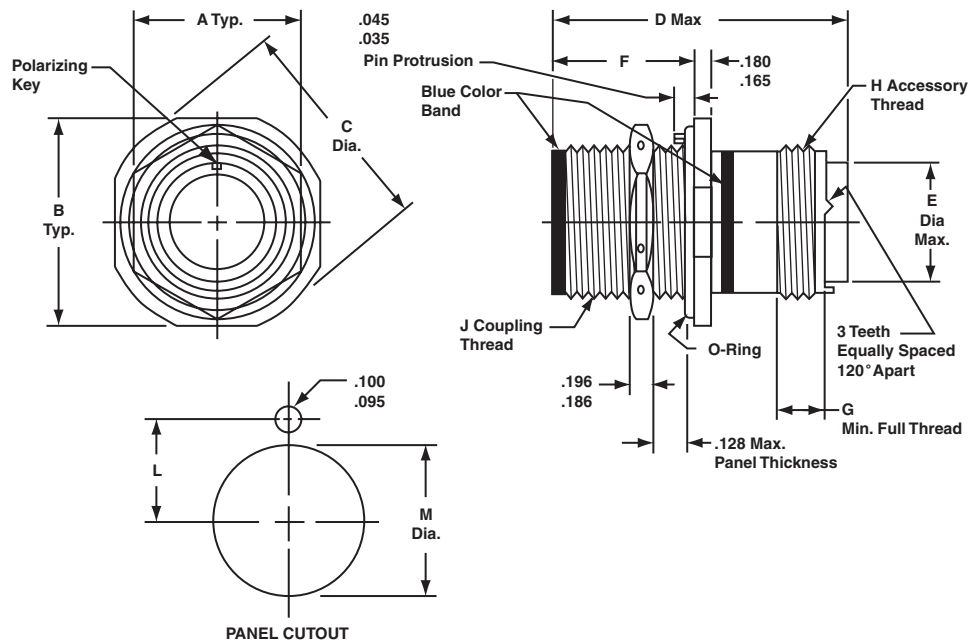
# Jam Nut Receptacle

## Military (MS3454), Commercial (9444)

### PART NUMBER BUILDER PAGE M16

**MILITARY**  
**MS3454**

**COMMERCIAL**  
**9444**



| Shell Size* | A<br>±.010 | B<br>±.005 | C Dia.<br>±.005 | D Max.                |                       | E Dia.<br>Max. | F<br>±.005 | G Min. | H Thread<br>Class 2A | J Thread<br>Class 2A | Panel Cutout Dimensions |                          |
|-------------|------------|------------|-----------------|-----------------------|-----------------------|----------------|------------|--------|----------------------|----------------------|-------------------------|--------------------------|
|             |            |            |                 | Size 16 & 12 Contacts | Size 8, 4, 0 Contacts |                |            |        |                      |                      | L<br>±.005              | M Dia.<br>+.015<br>-.000 |
| 8S          | .687       | 1.187      | 1.272           | 2.031                 | —                     | .305           | .720       | .290   | .5000-20 UNEF        | .5000-28 UNEF        | .323                    | .505                     |
| 10S         | .812       | 1.312      | 1.397           | 2.031                 | —                     | .405           | .720       | .290   | .6250-24 UNEF        | .6250-24 UNEF        | .385                    | .630                     |
| 10SL        | .812       | 1.312      | 1.397           | 2.031                 | —                     | .405           | .720       | .290   | .6250-24 UNEF        | .6250-24 UNEF        | .385                    | .630                     |
| 12          | .937       | 1.437      | 1.522           | 2.125                 | —                     | .549           | .970       | .290   | .7500-20 UNEF        | .7500-20 UNEF        | .448                    | .755                     |
| 12S         | .937       | 1.437      | 1.522           | 2.031                 | —                     | .549           | .720       | .290   | .7500-20 UNEF        | .7500-20 UNEF        | .448                    | .755                     |
| 14          | 1.125      | 1.562      | 1.647           | 2.125                 | —                     | .665           | .970       | .290   | .8750-20 UNEF        | .8750-20 UNEF        | .510                    | .880                     |
| 14S         | 1.125      | 1.562      | 1.647           | 2.031                 | —                     | .665           | .720       | .290   | .8750-20 UNEF        | .8750-20 UNEF        | .510                    | .880                     |
| 16          | 1.250      | 1.687      | 1.772           | 2.125                 | 2.500                 | .790           | .970       | .290   | 1.0000-20 UNEF       | 1.0000-20 UNEF       | .573                    | 1.005                    |
| 16S         | 1.250      | 1.687      | 1.772           | 2.031                 | —                     | .790           | .720       | .290   | 1.0000-20 UNEF       | 1.0000-20 UNEF       | .573                    | 1.005                    |
| 18          | 1.375      | 1.812      | 1.897           | 2.125                 | 2.500                 | .869           | .970       | .290   | 1.0625-18 UNEF       | 1.1250-18 UNEF       | .635                    | 1.130                    |
| 20          | 1.500      | 1.937      | 2.022           | 2.125                 | 2.500                 | .994           | .970       | .290   | 1.1875-18 UNEF       | 1.2500-18 UNEF       | .698                    | 1.255                    |
| 22          | 1.625      | 2.156      | 2.241           | 2.125                 | 2.500                 | 1.119          | .970       | .290   | 1.3125-18 UNEF       | 1.3750-18 UNEF       | .760                    | 1.380                    |
| 24          | 1.750      | 2.281      | 2.366           | 2.125                 | 2.500                 | 1.244          | .970       | .290   | 1.4375-18 UNEF       | 1.5000-18 UNEF       | .823                    | 1.505                    |
| 28          | 2.000      | 2.531      | 2.616           | 2.125                 | 2.500                 | 1.465          | .970       | .467   | 1.7500-18 UNS        | 1.7500-18 UNS        | .948                    | 1.755                    |
| 32          | 2.375      | 2.781      | 2.866           | 2.125                 | 2.500                 | 1.715          | .970       | .467   | 2.0000-18 UNS        | 2.0000-18 UNS        | 1.073                   | 2.005                    |
| 36          | 2.625      | 3.031      | 3.116           | 2.125                 | 2.500                 | 1.930          | .970       | .467   | 2.2500-16 UN         | 2.2500-16 UN         | 1.198                   | 2.255                    |
| 40          | 2.875      | 3.281      | 3.366           | 2.125                 | 2.500                 | 2.145          | .970       | .467   | 2.5000-16 UN         | 2.5000-16 UN         | 1.323                   | 2.505                    |

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.

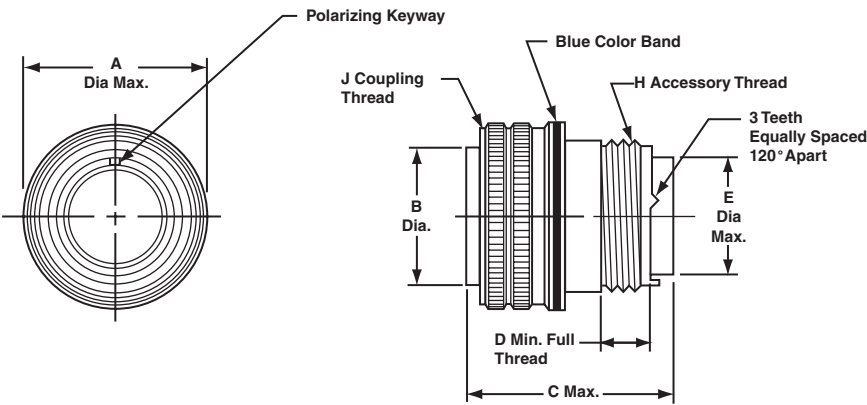
# Straight Plug

## Military (MS3456), Commercial (9446)

PART NUMBER BUILDER PAGE M16

MILITARY  
MS3456

COMMERCIAL 9446



| Shell Size* | A Dia. Max. | B Dia. ±.005 | C Max.                |                       | D Min. | E Dia. Max. | H Thread Class 2A | J Thread Class 2B |
|-------------|-------------|--------------|-----------------------|-----------------------|--------|-------------|-------------------|-------------------|
|             |             |              | Size 16 & 12 Contacts | Size 8, 4, 0 Contacts |        |             |                   |                   |
| 8S          | .844        | .360         | 2.031                 | —                     | .290   | .305        | .5000-20 UNF      | .5000-28 UNEF     |
| 10S         | .969        | .435         | 2.031                 | —                     | .290   | .405        | .6250-24 UNEF     | .6250-24 UNEF     |
| 10SL        | .969        | .441**       | 2.031                 | —                     | .290   | .405        | .6250-24 UNEF     | .6250-24 UNEF     |
| 12          | 1.062       | .550         | 2.125                 | —                     | .290   | .549        | .7500-20 UNEF     | .7500-20 UNEF     |
| 12S         | 1.062       | .550         | 2.031                 | —                     | .290   | .549        | .7500-20 UNEF     | .7500-20 UNEF     |
| 14          | 1.156       | .670         | 2.125                 | —                     | .290   | .665        | .8750-20 UNEF     | .8750-20 UNEF     |
| 14S         | 1.156       | .670         | 2.031                 | —                     | .290   | .665        | .8750-20 UNEF     | .8750-20 UNEF     |
| 16          | 1.250       | .800         | 2.125                 | 2.500                 | .290   | .790        | 1.0000-20 UNEF    | 1.0000-20 UNEF    |
| 16S         | 1.250       | .800         | 2.031                 | —                     | .290   | .790        | 1.0000-20 UNEF    | 1.0000-20 UNEF    |
| 18          | 1.344       | .925         | 2.125                 | 2.500                 | .290   | .869        | 1.0625-18 UNEF    | 1.1250-18 UNEF    |
| 20          | 1.469       | 1.045        | 2.125                 | 2.500                 | .290   | .994        | 1.1875-18 UNEF    | 1.2500-18 UNEF    |
| 22          | 1.594       | 1.170        | 2.125                 | 2.500                 | .290   | 1.119       | 1.3125-18 UNEF    | 1.3750-18 UNEF    |
| 24          | 1.719       | 1.295        | 2.125                 | 2.500                 | .290   | 1.244       | 1.4375-18 UNEF    | 1.5000-18 UNEF    |
| 28          | 1.969       | 1.515        | 2.125                 | 2.500                 | .467   | 1.465       | 1.7500-18 UNS     | 1.7500-18 UNS     |
| 32          | 2.219       | 1.765        | 2.125                 | 2.500                 | .467   | 1.715       | 2.0000-18 UNS     | 2.0000-18 UNS     |
| 36          | 2.469       | 1.975        | 2.125                 | 2.500                 | .467   | 1.930       | 2.2500-16 UN      | 2.2500-16 UN      |
| 40          | 2.719       | 2.225        | 2.125                 | 2.500                 | .467   | 2.145       | 2.5000-16 UN      | 2.5000-16 UN      |

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.

\*\* Tolerance on this dimension is +.000 –.006

5015

MATRIX

M

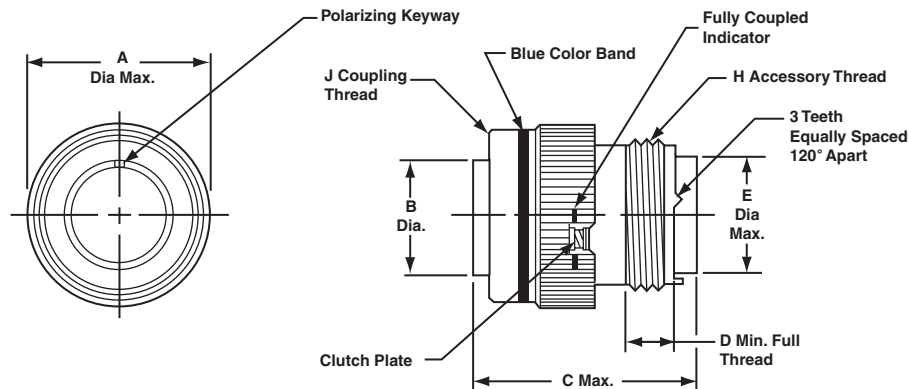
# Straight Plug with Self-locking Coupling Nut

## Military (MS3459), Commercial (9816)

### PART NUMBER BUILDER PAGE M16

**MILITARY**  
**MS3459**

**COMMERCIAL** **9816**



| Shell Size* | A Dia. Max. | B Dia. ±.005 | C Max.                |                       | D Min. | E Dia. Max. | H Thread Class 2A | J Thread Class 2B |
|-------------|-------------|--------------|-----------------------|-----------------------|--------|-------------|-------------------|-------------------|
|             |             |              | Size 16 & 12 Contacts | Size 8, 4, 0 Contacts |        |             |                   |                   |
| 8S          | .963        | .360         | 1.510                 | —                     | .290   | .305        | .5000-20 UNEF     | .5000-28 UNEF     |
| 10S         | 1.088       | .435         | 1.510                 | —                     | .290   | .405        | .6250-24 UNEF     | .6250-24 UNEF     |
| 10SL        | 1.088       | .441**       | 1.510                 | —                     | .290   | .405        | .6250-24 UNEF     | .6250-24 UNEF     |
| 12          | 1.213       | .550         | 1.780                 | —                     | .290   | .549        | .7500-20 UNEF     | .7500-20 UNEF     |
| 12S         | 1.213       | .550         | 1.510                 | —                     | .290   | .549        | .7500-20 UNEF     | .7500-20 UNEF     |
| 14          | 1.358       | .670         | 1.780                 | —                     | .290   | .665        | .8750-20 UNEF     | .8750-20 UNEF     |
| 14S         | 1.358       | .670         | 1.510                 | —                     | .290   | .665        | .8750-20 UNEF     | .8750-20 UNEF     |
| 16          | 1.463       | .800         | 1.780                 | 2.500                 | .290   | .790        | 1.0000-20 UNEF    | 1.0000-20 UNEF    |
| 16S         | 1.463       | .800         | 1.510                 | —                     | .290   | .790        | 1.0000-20 UNEF    | 1.0000-20 UNEF    |
| 18          | 1.588       | .925         | 1.850                 | 2.500                 | .290   | .869        | 1.0625-18 UNEF    | 1.1250-18 UNEF    |
| 20          | 1.713       | 1.045        | 1.850                 | 2.500                 | .290   | .994        | 1.1875-18 UNEF    | 1.2500-18 UNEF    |
| 22          | 1.788       | 1.170        | 1.850                 | 2.500                 | .290   | 1.119       | 1.3125-18 UNEF    | 1.3750-18 UNEF    |
| 24          | 1.963       | 1.295        | 1.850                 | 2.500                 | .290   | 1.244       | 1.4375-18 UNEF    | 1.5000-18 UNEF    |
| 28          | 2.213       | 1.515        | 1.850                 | 2.500                 | .467   | 1.465       | 1.7500-18 UNS     | 1.7500-18 UNS     |
| 32          | 2.463       | 1.765        | 1.850                 | 2.500                 | .467   | 1.715       | 2.0000-18 UNS     | 2.0000-18 UNS     |
| 36          | 2.713       | 1.975        | 1.850                 | 2.500                 | .467   | 1.930       | 2.2500-16 UN      | 2.2500-16 UN      |
| 40          | 2.963       | 2.225        | 1.850                 | 2.500                 | .467   | 2.145       | 2.5000-16 UN      | 2.5000-16 UN      |

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.

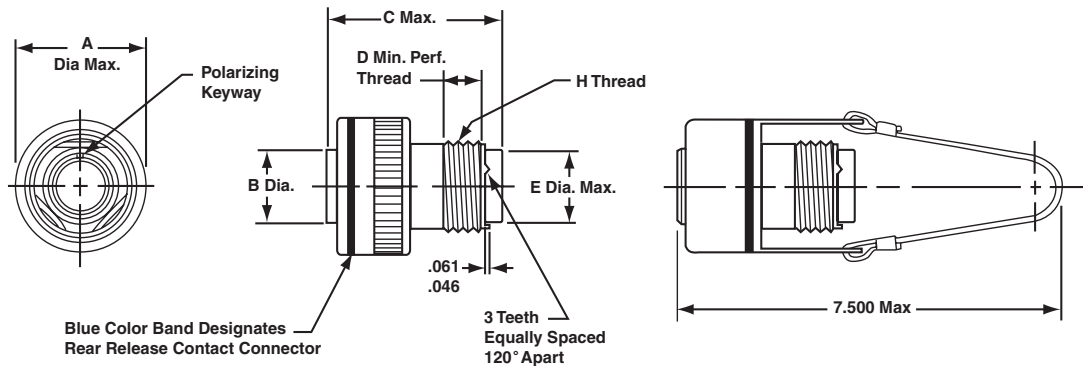
\*\* Tolerance on this dimension is +.000 –.006

# Quick Disconnect Plug, with/without Lanyard

## Commercial (9817)

PART NUMBER BUILDER PAGE M16

COMMERCIAL  
9818  
9817



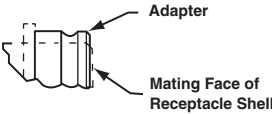
9818 CONNECTOR

9817 CONNECTOR WITH LANYARD

| Shell Size* | A Dia. Max. | B Dia. | C Max.                |                       | D Min. | E Dia. Max. | H Thread Class 2A | Amphenol/ Matrix Part Number for Adapter Ring |
|-------------|-------------|--------|-----------------------|-----------------------|--------|-------------|-------------------|-----------------------------------------------|
|             |             |        | Size 16 & 12 Contacts | Size 8, 4, 0 Contacts |        |             |                   |                                               |
| 8S          | 1.087       | .360   | 2.031                 | —                     | .290   | .305        | .5000-20 UNF      | 2500-008-0X08                                 |
| 10S         | 1.224       | .435   | 2.031                 | —                     | .290   | .405        | .6250-24 UNEF     | 2500-008-0X10                                 |
| 10SL        | 1.224       | .441   | 2.031                 | —                     | .290   | .405        | .6250-24 UNEF     | 2500-008-0X10                                 |
| 12          | 1.355       | .550   | 2.125                 | —                     | .290   | .549        | .7500-20 UNEF     | 2500-008-0X12                                 |
| 12S         | 1.355       | .550   | 2.031                 | —                     | .290   | .549        | .7500-20 UNEF     | 2500-008-0X13                                 |
| 14          | 1.482       | .670   | 2.125                 | —                     | .290   | .665        | .8750-20 UNEF     | 2500-008-0X14                                 |
| 14S         | 1.482       | .670   | 2.031                 | —                     | .290   | .665        | .8750-20 UNEF     | 2500-008-0X15                                 |
| 16          | 1.609       | .800   | 2.125                 | 2.500                 | .290   | .790        | 1.0000-20 UNEF    | 2500-008-0X16                                 |
| 16S         | 1.609       | .800   | 2.031                 | —                     | .290   | .790        | 1.0000-20 UNEF    | 2500-008-0X17                                 |
| 18          | 1.817       | .925   | 2.125                 | 2.500                 | .290   | .869        | 1.0625-18 UNEF    | 2500-008-0X18                                 |
| 20          | 1.942       | 1.045  | 2.125                 | 2.500                 | .290   | .994        | 1.1875-18 UNEF    | 2500-008-0X20                                 |
| 22          | 2.075       | 1.170  | 2.125                 | 2.500                 | .290   | 1.119       | 1.3125-18 UNEF    | 2500-008-0X22                                 |
| 24          | 2.203       | 1.295  | 2.125                 | 2.500                 | .290   | 1.244       | 1.4375-18 UNEF    | 2500-008-0X24                                 |
| 28          | 2.516       | 1.515  | 2.125                 | 2.500                 | .467   | 1.465       | 1.7500-18 UNS     | 2500-008-0X28                                 |
| 32          | 2.735       | 1.765  | 2.125                 | 2.500                 | .467   | 1.715       | 2.0000-18 UNS     | 2500-008-0X32                                 |
| 36          | 3.015       | 1.975  | 2.125                 | 2.500                 | .467   | 1.930       | 2.2500-16 UN      | 2500-008-0X36                                 |
| 40          | 3.306       | 2.225  | 2.125                 | 2.500                 | .467   | 2.145       | 2.5000-16 UN      | 2500-008-0X40                                 |

Required to mate the quick disconnect plug with receptacle. Not furnished with the quick disconnect plug and must be ordered separately.

Note: Use Locktite Material on the threads for a permanent installation to the shell. How to Order Adapter Ring



Part Number  
2500-008-0 X XX

Shell Size (varies from connector shell size designation, see last column of table at left)

Finish

- 0 - Electroless Nickel
- 1 - Black Anodize
- 2 - Cadmium/Olive Drab
- 3 - Stainless Steel, Passivated

\* Consult Amphenol Aerospace for availability of shell sizes 44 and 48.  
Receptacle Adapter Ring

5015

MATRIX

M



# Contact Information, Sealing Plugs, Crimping and Insertion/Removal Tools

## MS/STANDARD CRIMP REAR RELEASE CONTACTS

| Contact Size | Wire Range |                 | Socket Contacts      |                             | Pin Contacts         |                             |
|--------------|------------|-----------------|----------------------|-----------------------------|----------------------|-----------------------------|
|              | AWG        | mm <sup>2</sup> | Military Part Number | Amphenol/Matrix Part Number | Military Part Number | Amphenol/Matrix Part Number |
| 16S*         | 20-16      | 0.5-1.4         | M39029/30-217        | M5100-033-1601L             | M39029/29-212        | M5000-029-0016L             |
| 16           | 20-16      | 0.5-1.4         | M39029/30-218        | M5100-033-1602L             | M39029/29-212        | M5000-029-0016L             |
| 12           | 14-12      | 2-3             | M39029/30-219        | M5100-033-0012              | M39029/29-213        | M5000-029-0012              |
| 8            | 10-8†      | 5-8.5           | M39029/30-220        | M5100-033-0008              | M39029/29-214        | M5000-029-0008              |
| 4            | 6-4†       | 13-21           | M39029/30-221        | M5100-033-0004              | M39029/29-215        | M5000-029-0004              |
| 0            | 2-0†       | 34-60           | M39029/30-222        | M5100-033-0000              | M39029/29-216        | M5000-029-0000              |

\* Shorter wire barrel

Note: For information on thermocouple contacts, consult Amphenol Aerospace

† Use MS3348 bushing kit to accommodate smaller wire.

## CONTACT CURRENT RATING AND RETENTION

| Contact Size** | Current Rating |                  |                          | Contact Retention |       |
|----------------|----------------|------------------|--------------------------|-------------------|-------|
|                | Amperes Max.   | RADSOK Amps Max. | Voltage Drops Millivolts | Axial Load        |       |
|                |                |                  |                          | lb.               | N     |
| 16             | 13             | N/A              | 50                       | 25                | 111.2 |
| 12             | 23             | N/A              | 50                       | 30                | 133.4 |
| 8              | 46             | 70               | 25                       | 50                | 222.4 |
| 4              | 80             | 120              | 14                       | 60                | 266.9 |
| 0              | 150            | 150              | 12                       | 75                | 333.6 |

\*\* Organize individual circuits to maintain heat rise within operating temperature requirements.

## SEALING PLUGS

| Contact Size | Sealing Plugs        |                             |
|--------------|----------------------|-----------------------------|
|              | Military Part Number | Amphenol/Matrix Part Number |
| 16S          | MS27488-16-3         | 10-405996-163               |
| 16           | MS27488-16-3         | 10-405996-163               |
| 12           | MS27488-12-3         | 10-405996-123               |
| 8            | MS27488-8-3          | 10-405996-083               |
| 4            | MS27488-4-3          | 10-405996-043               |
| 0            | MS27488-0-3          | 10-405996-003               |

## CRIMPING TOOLS

| Contact Size | Wire Range |                 | Finished Wire Dia. Range |            | Color Code  | Crimping Tool Part Number | Turret or Positioner Part Number |
|--------------|------------|-----------------|--------------------------|------------|-------------|---------------------------|----------------------------------|
|              | AWG        | mm <sup>2</sup> | Inch                     | mm         |             |                           |                                  |
| 16S          | 20-16      | 0.5-1.4         | .053-.103                | 1.34-2.62  | Red/White   | M22520/1-01               | M22520/1-02                      |
| 16           | 20-16      | 0.5-1.4         | .053-.103                | 1.34-2.62  | Blue/White  | M22520/1-01               | M22520/1-02                      |
| 12           | 14-12      | 2-3             | .085-.158                | 2.15-4.01  | Yell./White | M22520/1-01               | M22520/1-02                      |
| 8            | 10-8       | 5-8.5           | .132-.255                | 3.35-6.48  | White/Red   | M22520/23-01              | M22520/23-02                     |
| 4            | 6-4        | 13-21           | .237-.370                | 6.01-9.40  | White/Blue  | M22520/23-01              | M22520/23-04                     |
| 0            | 2-0        | 34-60           | .360-.550                | 9.14-13.97 | White/Yell. | M22520/23-01              | M22520/23-05                     |

## INSERTION/REMOVAL TOOLS

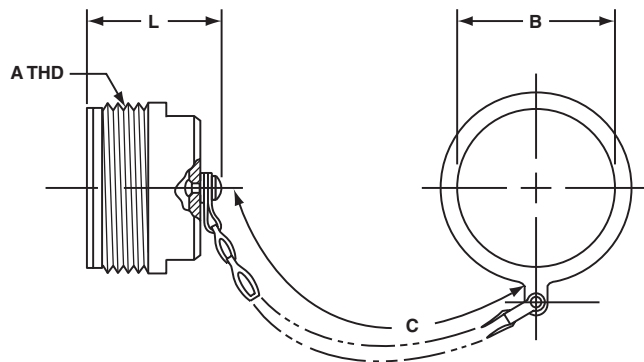
| Contact Size | Color Code   | Military Part Number | Amphenol/Matrix Part Number |
|--------------|--------------|----------------------|-----------------------------|
| 16           | Blue/White   | M81969/14-03         | 10-538988-016               |
| 12           | Yellow/White | M81969/14-04         | 10-538988-012               |
| 8            | Red          | M81969/14-06         | 6500-018-0008               |
| 4            | Blue         | M81969/14-07         | 6500-018-0004               |
| 0            | Yellow       | M81969/14-08         | 6500-018-0000               |

Amphenol installation instructions, L-2106, gives information on insertion, removal and crimping of contacts for Matrix MIL-DTL-5015 connectors.

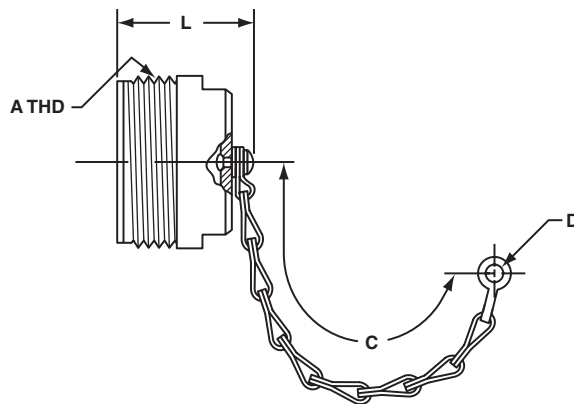
# Accessories

## Protection Caps – Plug

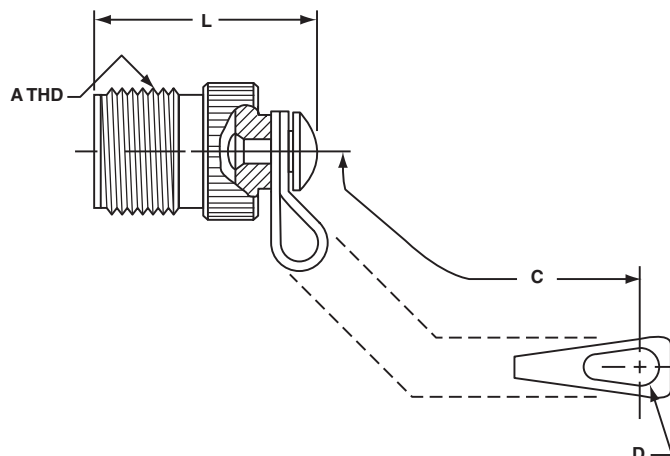
### PLUG PROTECTION CAP 10-329393-



### XX\*



### PLUG PROTECTION CAP 10-229125-XX\*



### PLUG PROTECTION CAP MS25042-XXDA\*

| Assembly Number  | A Thread Class 2A | B Dia. +.010 - .000 | C Approx. | L Max. |
|------------------|-------------------|---------------------|-----------|--------|
| 10-329393-10 (*) | .625-24UNEF       | .641                | 3.5       | 1.312  |
| 10-329393-11 (*) | .625-24UNEF       | .641                | 3.5       | 1.312  |
| 10-329393-12 (*) | .750-20UNEF       | .766                | 3.5       | 1.500  |
| 10-329393-14 (*) | .875-20UNEF       | .891                | 3.5       | 1.500  |
| 10-329393-16 (*) | 1.000-20UNEF      | 1.016               | 3.5       | 1.500  |
| 10-329393-18 (*) | 1.125-18UNEF      | 1.141               | 3.5       | 1.500  |
| 10-329393-20 (*) | 1.250-18UNEF      | 1.266               | 4.0       | 1.500  |
| 10-329393-22 (*) | 1.375-18UNEF      | 1.391               | 4.0       | 1.500  |
| 10-329393-24 (*) | 1.500-18UNEF      | 1.641               | 4.5       | 1.500  |
| 10-329393-28 (*) | 1.750-18UNS       | 1.891               | 4.5       | 1.500  |
| 10-329393-32 (*) | 2.000-18UNS       | 2.078               | 5.0       | 1.500  |
| 10-329393-36 (*) | 2.250-16UN        | 2.328               | 5.0       | 1.500  |
| 10-329393-40 (*) | 2.500-16UN        | 2.641               | 5.0       | 1.500  |

\* 3 = OD Cadmium Plating

G = Electroless Nickel Plating

| Assembly Number  | A Thread Class 2A | B Dia. +.010 - .000 | C Approx. | L Max. |
|------------------|-------------------|---------------------|-----------|--------|
| 10-329393-44 (*) | 2.750-16UN        | 2.891               | 6.0       | 1.500  |

| Assembly Number | A Thread Class 2A | C Approx. | D Ref. | L Max. |
|-----------------|-------------------|-----------|--------|--------|
| 10-229125-10    | .625-24NEF        | 3.0       | .140   | 1.233  |
| 10-229125-12    | .750-20UNEF       | 3.5       | .140   | 1.421  |
| 10-229125-14    | .875-20UNEF       | 3.5       | .140   | 1.421  |
| 10-229125-16    | 1.000-20UNEF      | 3.5       | .140   | 1.421  |
| 10-229125-18    | 1.125-18NEF       | 3.5       | .140   | 1.421  |
| 10-229125-20    | 1.250-18NEF       | 3.5       | .193   | 1.421  |
| 10-229125-22    | 1.375-18NEF       | 3.5       | .193   | 1.421  |
| 10-229125-24    | 1.500-18NEF       | 4.5       | .193   | 1.421  |

| Assembly Number | A Thread Class 2A | C Approx. | D Ref. | L Max. |
|-----------------|-------------------|-----------|--------|--------|
| 10-229125-28    | 1.750-18NS        | 4.5       | .193   | 1.421  |
| 10-229125-32    | 2.000-18NS        | 5.0       | .193   | 1.421  |
| 10-229125-36    | 2.250-16UN        | 5.0       | .193   | 1.421  |
| 10-229125-40    | 2.500-16UN        | 5.0       | .193   | 1.421  |

| MS Number    | A Thread Class 2A | B Dia. +.010 - .005 | C Approx. | L Max. |
|--------------|-------------------|---------------------|-----------|--------|
| MS25042-8DA  | .500-28UNEF       | .156                | 4.00      | .969   |
| MS25042-10DA | .625-24UNEF       | .156                | 4.00      | .969   |
| MS25042-12DA | .750-20UNEF       | .156                | 4.50      | 1.156  |
| MS25042-14DA | .875-20UNEF       | .156                | 4.50      | 1.156  |
| MS25042-16DA | 1.000-20UNEF      | .156                | 4.50      | 1.156  |
| MS25042-18DA | 1.125-18UNEF      | .156                | 4.50      | 1.156  |
| MS25042-20DA | 1.250-18UNEF      | .187                | 5.00      | 1.156  |
| MS25042-22DA | 1.375-18UNEF      | .187                | 5.00      | 1.156  |
| MS25042-24DA | 1.500-18UNEF      | .187                | 5.50      | 1.156  |
| MS25042-28DA | 1.750-18UNS       | .187                | 7.75      | 1.156  |
| MS25042-32DA | 2.000-18UNS       | .218                | 7.75      | 1.156  |
| MS25042-36DA | 2.250-16UN        | .218                | 7.75      | 1.156  |
| MS25042-40DA | 2.500-16UN        | .218                | 7.75      | 1.156  |

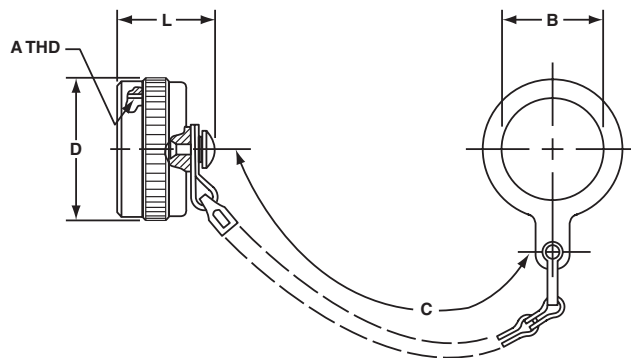
\* Protective caps are illustrated with sash chains and are available with beaded chains or without chains. Optional terminations are also available. Consult Amphenol Aerospace when ordering.

## Protection Caps – Receptacle

### RECEPTACLE PROTECTION CAP MS25043-XXDA\*

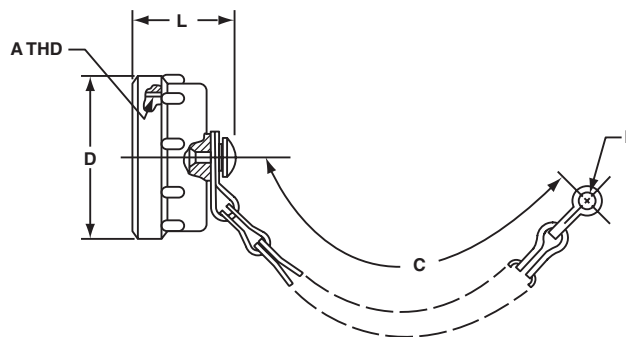
| Assembly Number | A<br>Thread<br>Class 2B | B<br>Dia.<br>Min. | C<br>Approx. | D<br>Dia.<br>Max. | L<br>Max. |
|-----------------|-------------------------|-------------------|--------------|-------------------|-----------|
| 10-329394-10    | .625-24UNEF             | .641              | 3.5          | .875              | .793      |
| 10-329394-12    | .750-20UNEF             | .766              | 3.5          | 1.000             | .793      |
| 10-329394-14    | .875-20UNEF             | .891              | 3.5          | 1.125             | .793      |
| 10-329394-16    | 1.000-20UNEF            | 1.016             | 3.5          | 1.250             | .793      |
| 10-329394-18    | 1.125-18UNEF            | 1.094             | 3.5          | 1.375             | 1.024     |
| 10-329394-20    | 1.250-18UNEF            | 1.203             | 4.0          | 1.500             | 1.024     |
| 10-329394-22    | 1.375-18UNEF            | 1.343             | 4.0          | 1.625             | 1.024     |
| 10-329394-24    | 1.500-18UNEF            | 1.453             | 4.5          | 1.750             | 1.024     |
| 10-329394-28    | 1.750-18UNS             | 1.766             | 4.5          | 2.000             | 1.024     |
| 10-329394-32    | 2.000-18UNS             | 2.016             | 5.0          | 2.250             | 1.024     |
| 10-329394-36    | 2.250-16UN              | 2.266             | 5.0          | 2.500             | 1.024     |
| 10-329394-40    | 2.500-16UN              | 2.516             | 5.0          | 2.656             | 1.024     |
| 10-329394-44    | 2.750-16UN              | 2.766             | 6.0          | 2.938             | 1.024     |

### RECEPTACLE PROTECTION CAP 10-329394-XX\*



| Assembly Number | A<br>Thread<br>Class 2B | B<br>Ref. | C<br>Approx. | D<br>Dia.<br>Max. | L<br>Max. |
|-----------------|-------------------------|-----------|--------------|-------------------|-----------|
| 10-422905-103   | .625-24UNEF             | .140      | 3.0          | .875              | .812      |
| 10-422905-123   | .750-20UNEF             | .140      | 3.5          | 1.000             | .812      |
| 10-422905-143   | .875-20UNEF             | .140      | 3.5          | 1.125             | .812      |
| 10-422905-163   | 1.000-20UNEF            | .140      | 3.5          | 1.250             | .812      |
| 10-422905-183   | 1.125-18UNEF            | .193      | 3.5          | 1.375             | 1.031     |
| 10-422905-203   | 1.250-18UNEF            | .193      | 4.0          | 1.500             | 1.031     |
| 10-422905-223   | 1.375-18UNEF            | .193      | 4.0          | 1.625             | 1.031     |
| 10-422905-243   | 1.500-18UNEF            | .193      | 4.5          | 1.750             | 1.031     |
| 10-422905-283   | 1.750-18UNS             | .193      | 4.5          | 2.000             | 1.031     |
| 10-422905-323   | 2.000-18UNS             | .193      | 5.0          | 2.250             | 1.031     |

### RECEPTACLE PROTECTION CAP 10-422905-

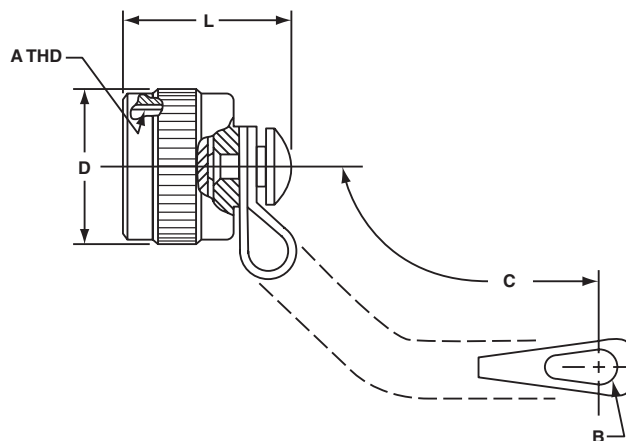


| Assembly Number | A<br>Thread<br>Class 2B | B<br>Ref. | C<br>Approx. | D<br>Dia.<br>Max. | L<br>Max. |
|-----------------|-------------------------|-----------|--------------|-------------------|-----------|
| 10-422905-363   | 2.250-16UN              | .193      | 5.0          | 2.500             | 1.031     |
| 10-422905-403   | 2.500-16UN              | .193      | 5.0          | 2.656             | 1.031     |

| MS Number    | A<br>Thread<br>Class 2B | B<br>+.010<br>-.005 | C<br>Approx. | D<br>Dia.<br>Max. | L<br>Max. |
|--------------|-------------------------|---------------------|--------------|-------------------|-----------|
| MS25043-8DA  | .500-28UNEF             | .140                | 4.00         | .688              | .750      |
| MS25043-10DA | .625-24UNEF             | .140                | 4.00         | .815              | .750      |
| MS25043-12DA | .750-20UNEF             | .140                | 4.50         | 1.000             | .750      |
| MS25043-14DA | .875-20UNEF             | .140                | 4.50         | 1.125             | .750      |
| MS25043-16DA | 1.000-20UNEF            | .140                | 4.50         | 1.188             | .750      |
| MS25043-18DA | 1.125-18UNEF            | .140                | 4.50         | 1.344             | .750      |
| MS25043-20DA | 1.250-18UNEF            | .140                | 5.00         | 1.469             | .750      |
| MS25043-22DA | 1.375-18UNEF            | .140                | 5.00         | 1.594             | .750      |
| MS25043-24DA | 1.500-18UNEF            | .171                | 5.50         | 1.719             | .750      |
| MS25043-28DA | 1.750-18UNS             | .171                | 7.75         | 1.969             | .812      |
| MS25043-32DA | 2.000-18UNS             | .187                | 7.75         | 2.219             | .812      |
| MS25043-36DA | 2.250-16UN              | .187                | 7.75         | 2.469             | .812      |
| MS25043-40DA | 2.500-16UN              | .187                | 7.75         | 2.719             | .812      |

\* Protective caps are illustrated with sash chains and are available with beaded chains or without chains. Optional terminations are also available. Consult Amphenol Aerospace when ordering.

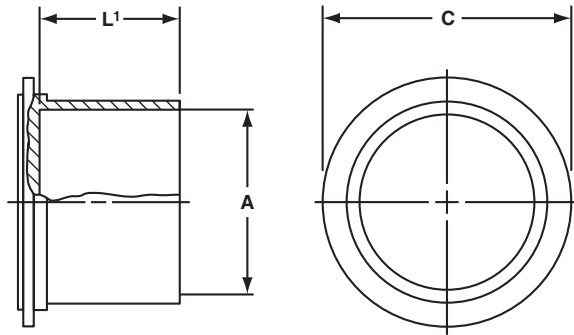
XXX\*



# MIL-DTL-5015 Accessories

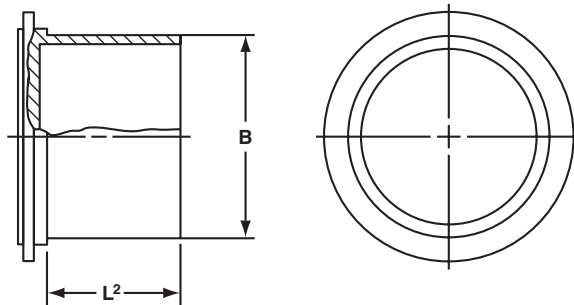
## Dust Caps

### 10-70500 RECEPTACLE DUST CAP FOR EXTERNAL THREADS



| MS Shell Size | Order Number | A Dia. Nominal Thread | C Dia. $\pm .031$ | L <sup>1</sup> $\pm .062$ |
|---------------|--------------|-----------------------|-------------------|---------------------------|
| 8S            | 10-70500-8   | .500                  | .750              | .500                      |
| 10S           | 10-70500-10  | .625                  | .875              | .500                      |
| 10SL          | 10-70500-10  | .625                  | .875              | .500                      |
| 12S           | 10-70500-12  | .750                  | 1.000             | .500                      |
| 12            | 10-70500-12  | .750                  | 1.000             | .500                      |
| 14S           | 10-70500-14  | .875                  | 1.125             | .500                      |
| 14            | 10-70500-14  | .875                  | 1.125             | .500                      |
| 16S           | 10-70500-16  | 1.000                 | 1.250             | .500                      |
| 16            | 10-70500-16  | 1.000                 | 1.250             | .500                      |
| 18            | 10-70500-18  | 1.125                 | 1.375             | .562                      |
| 20            | 10-70500-20  | 1.250                 | 1.500             | .562                      |
| 22            | 10-70500-22  | 1.375                 | 1.625             | .562                      |
| 24            | 10-70500-24  | 1.500                 | 1.750             | .562                      |
| 28            | 10-70500-28  | 1.750                 | 1.938             | .562                      |
| 32            | 10-70500-32  | 2.000                 | 2.250             | .562                      |
| 36            | 10-70500-36  | 2.250                 | 2.500             | .625                      |
| 40            | 10-70500-40  | 2.500                 | 2.750             | .625                      |

### 10-70506 PLUG DUST CAP FOR INTERNAL THREADS



| MS Shell Size | Order Number | B Dia. Min. | L <sup>2</sup> $\pm .125$ |
|---------------|--------------|-------------|---------------------------|
| 8S            | 10-70506-8S  | .469        | .625                      |
| 10S           | 10-70506-10S | .587        | .625                      |
| 10SL          | 10-70506-10S | .587        | .625                      |
| 12S           | 10-70506-12  | .704        | .625                      |
| 12            | 10-70506-12  | .704        | .625                      |
| 14S           | 10-70506-14  | .828        | .625                      |
| 14            | 10-70506-14  | .828        | .625                      |
| 16S           | 10-70506-16  | .953        | .625                      |
| 16            | 10-70506-16  | .953        | .625                      |
| 18            | 10-70506-18  | 1.072       | .625                      |
| 20            | 10-70506-20  | 1.197       | .625                      |
| 22            | 10-70506-22  | 1.322       | .625                      |
| 24            | 10-70506-24  | 1.447       | .625                      |
| 28            | 10-70506-28  | 1.697       | .625                      |
| 32            | 10-70506-32  | 1.947       | .625                      |
| 36            | 10-70506-36  | 2.190       | .625                      |
| 40            | 10-70506-40  | 2.440       | .625                      |

5015

MATRIX

M

## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9