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# D-Sub Accessories Catalog



ITT

# We Connect

When it matters most

For more than a century, ITT Cannon has developed innovative interconnect solutions for the world's harshest environments. With facilities in the United States, Germany, Italy, Mexico, China and Japan, each with its unique strengths, we offer our customers interconnect solutions that are truly Engineered for Life.

In addition to this truly global footprint, we offer highly specialized, segmented industry expertise. We have a proven track record as an industry leader in harsh-environment applications. This has equipped us with the knowledge needed to continue to produce the most resilient, reliable connectors for our customers' most challenging conditions.

## Interconnect solutions for the harshest environments.

### **The ITT Cannon difference**

- Global capabilities & local support
- Proven application expertise
- A century of interconnect leadership
- A committed innovator & business partner

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### **About ITT**

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries. For more information, visit [www.itt.com](http://www.itt.com).





Industrial/Instrumentation



Defense Vehicles



Medical



Heavy Equipment



Rail



Oil & Gas



Commercial & Military Aerospace

Our connector portfolio remains the most extensive in the industry.

Offering a reliable and cost effective range of interconnect solutions.

# Introduction to D-Sub Accessories

Originally designed & patented by Cannon engineers for use on commercial & military aviation systems, D-Sub Connectors were manufactured as a smaller, lightweight alternative to many of the large, heavier circular electronic plugs of the time. This small but robust rectangular interconnect solution was quickly adopted across a number of applications and industries, and the Cannon D-Sub soon became the first multi-purpose connector of its kind.

Today, Cannon offers an array of commercial or military grade D-Sub styles, sizes, configurations and accessories.

- EMI Shielded, Metal or Plastic Backshells
- Straight or Angled Exit
- One –Piece Snap Together or Locking Backshells
- Locking Hardware
- Guide Pin Plates
- Interfacial Seals
- Dust Caps



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# D-Sub Accessories Guide for Backshells and Locking Hardware

## Backshell Locking Hardware

| Backshell Material | Backshell Style                                              | Female Screw Lock<br>see page 18 | Male crew Lock see<br>page 17 | Sliding Lock Retainer<br>see page 19 | Slide Lock Post<br>see page 19 | Spring Latch Plate<br>see page 20 |
|--------------------|--------------------------------------------------------------|----------------------------------|-------------------------------|--------------------------------------|--------------------------------|-----------------------------------|
| EMI Shielded       | Snap-Together Metalized Plastic Straight Exit<br>see page 13 | —                                | —                             | —                                    | —                              | —                                 |
| EMI Shielded       | Snap-Together Metalized Plastic 50° Exit<br>see page 13      | —                                | —                             | —                                    | —                              | —                                 |
| EMI Shielded       | Die Cast Zinc Metal<br>see page 10                           | —                                | □                             | —                                    | —                              | —                                 |
| Metal              | Metal Backshell 45° Exit<br>see page 8                       | —                                | —                             | —                                    | —                              | —                                 |
| Metal              | Deep Straight Clamp<br>see page 11                           | ●                                | ●                             | ●                                    | ●                              | ●                                 |
| Metal              | Round Cable Clamp<br>see page 11                             | ●                                | ●                             | ●                                    | ●                              | ●                                 |
| Metal              | Short Straight Clamp<br>see page 12                          | ●                                | ●                             | ●                                    | ●                              | ●                                 |
| Metal              | 90° Entry<br>see page 12                                     | ●                                | ●                             | ●                                    | ●                              | ●                                 |
| Plastic            | Snap-Together Universal<br>see page 15                       | ●                                | ●                             | —                                    | —                              | —                                 |
| Plastic            | One-Piece Snap-Together<br>see page 15                       | —                                | □                             | —                                    | —                              | —                                 |
| Plastic            | One-Piece Plastic Straight Exit<br>see page 16               | —                                | —                             | ●                                    | ●                              | ●                                 |
| Plastic            | One-Piece Plastic 90° Exit<br>see page 16                    | —                                | —                             | ●                                    | ●                              | ●                                 |

□ Supplied with backshell    ● Optional compatible locking hardware    — Not compatible

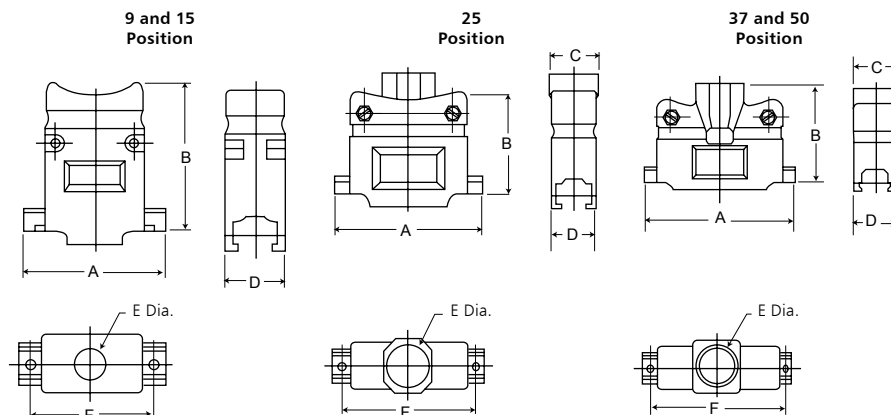
## Locking Hardware

| Backshell Style                                              | Spring Latch<br>see page 20 | Jackscrew Assembly<br>see page 21 | Jackpost Assembly<br>see page 21 | Recessed Jackscrew<br>see page 14 | Extended Jackscrew<br>see page 14 | Thumbscrew<br>see page 14 | Jackpost for In-Line Connections<br>see page 14 |
|--------------------------------------------------------------|-----------------------------|-----------------------------------|----------------------------------|-----------------------------------|-----------------------------------|---------------------------|-------------------------------------------------|
| Snap-Together Metalized Plastic Straight Exit<br>see page 13 | —                           | —                                 | —                                | ●                                 | ●                                 | ●                         | ●                                               |
| Snap-Together Metalized Plastic 50° Exit<br>see page 13      | —                           | —                                 | —                                | ●                                 | ●                                 | ●                         | ●                                               |
| Die Cast Zinc Metal<br>see page 10                           | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |
| Metal Backshell 45° Exit<br>see page 8                       | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |
| Deep Straight Clamp<br>see page 11                           | —                           | —                                 | ●                                | —                                 | —                                 | —                         | —                                               |
| Round Cable Clamp<br>see page 11                             | —                           | —                                 | ●                                | —                                 | —                                 | —                         | —                                               |
| Short Straight Clamp<br>see page 12                          | —                           | —                                 | ●                                | —                                 | —                                 | —                         | —                                               |
| 90° Entry<br>see page 12                                     | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |
| Snap-Together Universal<br>see page 15                       | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |
| One-Piece Snap-Together<br>see page 15                       | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |
| One-Piece Plastic Straight Exit<br>see page 16               | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |
| One-Piece Plastic 90° Exit<br>see page 16                    | —                           | —                                 | —                                | —                                 | —                                 | —                         | —                                               |

□ Supplied with backshell    ● Optional compatible locking hardware    — Not compatible

# Metal Backshell

## Die Cast Zinc Backshell, Straight Exit, EMI Shielded



Die cast metal backshells reduce EMI/RFI emissions. Die cast metal backshells offer improved shielding in a rugged package.

### Product Features

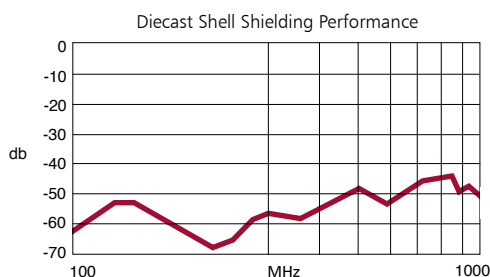
- Improves conformance to FCC DOC #20780 shielding requirements
- No crimp ferrule tooling needed
- Kit consists of 1 front shell, 1 rear shell, 2 screws, 2 hex nuts, 2 mounting screws, 2 end brackets, 1 set of compression inserts

| Shell size | Layout | Part Number  | A<br>±0,13 (.005) | B<br>±0,13 (.005) | C<br>±0,13 (.005) | D<br>±0,13 (.005) | øE<br>±0,13 (.005) | F<br>±0,13 (.005) |
|------------|--------|--------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|
| DE         | 9      | 980-2000-345 | 31,12 (1.225)     | 37,21 (1.465)     | 15,75 (.620)      | 15,75 (.620)      | 10,16 (.400)       | 24,99 (.984)      |
| DA         | 15     | 980-2000-346 | 39,12 (1.540)     | 40,64 (1.600)     | 15,75 (.620)      | 15,75 (.620)      | 10,16 (.400)       | 33,32 (1.312)     |
| DB         | 25     | 980-2000-347 | 53,09 (2.090)     | 39,37 (1.550)     | 17,53 (.690)      | 15,75 (.620)      | 13,34 (.525)       | 47,17 (1.857)     |
| DC         | 37     | 980-2000-348 | 69,34 (2.730)     | 45,72 (1.800)     | 21,95 (.864)      | 15,75 (.620)      | 18,44 (.726)       | 63,50 (2.500)     |
| DD         | 50     | 980-2000-349 | 66,70 (2.626)     | 45,72 (1.800)     | 21,95 (.864)      | 18,54 (.730)      | 18,44 (.726)       | 61,11 (2.406)     |

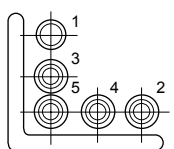
| Specifications     |                  |
|--------------------|------------------|
| Attenuation:       | -50 dB @ 1000MHz |
| Temperature Range: | -20° C to 80° C  |

| Materials and Finishes |            |
|------------------------|------------|
| Backshell Material:    | Zinc       |
| Backshell Finish:      | Clear Zinc |
| Compression Inserts:   | PVC        |
| Hardware Material:     | Steel      |
| Hardware Finish:       | Clear Zinc |

### Attenuation



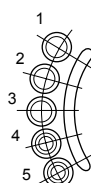
9 and 15 Position\*



Cable Diameter  
4,83/8,89 (.190/.350)

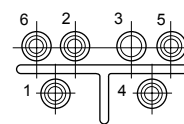
\* Inserts may be supplied mirror image.

25 Position\*



Cable Diameter  
4,83/11,68 (.190/.460)

37 and 50 Position\*



Cable Diameter  
7,62/17,27 (.300/.680)

Compression inserts (included with die cast zinc metal backshell)

Compression inserts accommodate a wide variety of cable sizes.

|          | #1           |              | #2           |              | #3           |              | #4           |              | #5           |              | #6           |             |
|----------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|-------------|
| Position | O.D.         | I.D.         | O.D.         | I.D.         | O.D.         | I.D.         | O.D.         | I.D.         | O.D.         | I.D.         | O.D.         | I.D.        |
| 9,15     | 12,07 (.475) | 8,13 (.320)  | 9,14 (.360)  | 8,00 (.315)  | 9,14 (.360)  | 6,48 (.255)  | 9,14 (.360)  | 7,24 (.285)  | 9,14 (.360)  | 5,33 (.210)  | -            | -           |
| 25       | 15,24 (.600) | 11,43 (.450) | 11,43 (.450) | 10,41 (.410) | 11,43 (.450) | 9,40 (.370)  | 11,43 (.450) | 7,62 (.300)  | 11,43 (.450) | 5,84 (.230)  | -            | -           |
| 37,50    | 16,64 (.655) | 14,48 (.570) | 17,78 (.700) | 15,75 (.620) | 20,57 (.810) | 16,51 (.650) | 16,64 (.655) | 12,70 (.500) | 16,64 (.655) | 10,80 (.425) | 16,64 (.655) | 8,89 (.350) |

## Metal Backshell Straight Exit - D\*FM

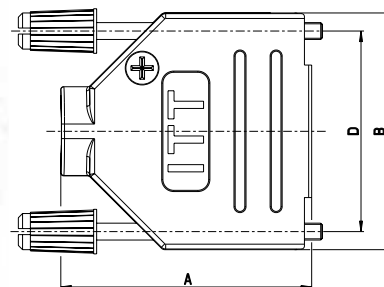
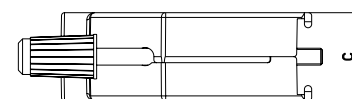
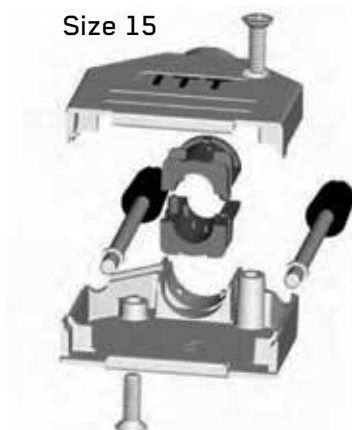
D\*FM metal Backshells for D-Subminiature Connectors offers protection from magnetic and radio interferences to cable assemblies.



### Product Features

- No crimp ferrule tooling needed
- Material: Zinc, blue chromated
- Unique metal filled plastic cable strain relief guarantees 360° shielding
- RoHS compliant
- -40 - +120°C temperature range
- Corrosion resistant

Size 15



| Part Description With #4-40 UNC Jackscrew | Part Description With M3 Jackscrew | Shell Size | A                   | B                  | C                  | D                  | Cable Diameter |
|-------------------------------------------|------------------------------------|------------|---------------------|--------------------|--------------------|--------------------|----------------|
| DEFME-101                                 | DEFMX-101                          | Size 9     | 39,55mm [1.555inch] | 31,3mm [1.232inch] | 14,6mm [0.575inch] | 25,0mm [0.984inch] | 4 - 9mm        |
| DAFME-101                                 | DAFMX-101                          | Size 15    | 41,7mm [1.642inch]  | 39,3mm [1.547inch] | 14,6mm [0.575inch] | 33,3mm [1.311inch] | 4 - 9mm        |
| DBFME-101                                 | DBFMX-101                          | Size 25    | 49,0mm [1.929inch]  | 53,5mm [2.106inch] | 14,6mm [0.575inch] | 47,0mm [1.850inch] | 4 - 9mm        |
| DCFME-101                                 | DCFMX-101                          | Size 37    | 53,3mm [1.098inch]  | 69,7mm [2.744inch] | 14,6mm [0.575inch] | 63,5mm [2.500inch] | 4 - 9mm        |

Kit consists of 1 front shell, 1 rear shell, 4 strain reliefs, 2 mounting crosshead screws, and 2 jack screws.

### Assembly instructions Size 9, 15, 25, 37



Use two halves of strain relief (different sizes can be mixed)



Strip cable 18mm and shape cable to two pigtails



Attach the strain relief around the cable



Bend cable shielding back on outside of strain relief

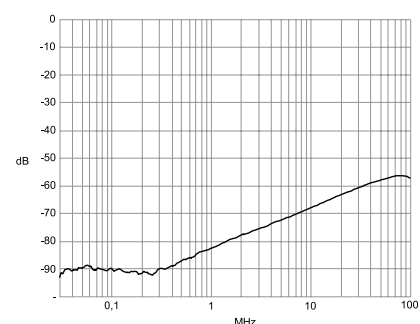


Mount connector and cable into the backshell



Assemble the other half (screwing force: 100-120 Ncm)

### Attenuation



Dimensions shown in mm  
Specifications and dimensions subject to change

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## Metal Backshell 45° Exit

D\*FM metal Backshells for D-Subminiature Connectors offers protection from magnetic and radio interferences to cable assemblies.



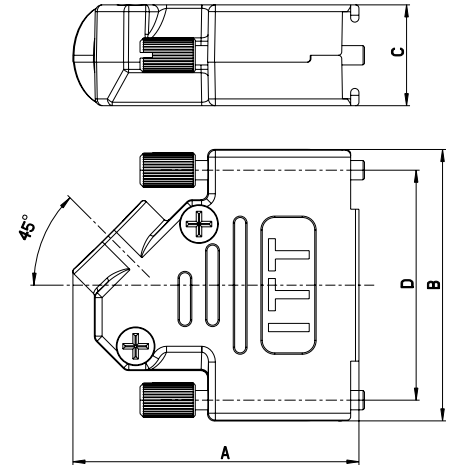
### Product Features

- No crimp ferrule tooling needed
- Material: Zinc, blue chromated
- Unique metal filled plastic cable strain relief guarantees 360° shielding
- RoHS compliant
- -40 - +120°C temperature range
- Corrosion resistant

Size 15



Size 50



| Part Description With #4-40 UNC Jackscrew | Part Description With M3 Jackscrew | Shell Size | A                  | B                  | C                  | D                  | Cable Diameter |
|-------------------------------------------|------------------------------------|------------|--------------------|--------------------|--------------------|--------------------|----------------|
| DEFME-100                                 | DEFMX-100                          | Size 9*    | 37,5mm [1.476inch] | 35,5mm [1.398inch] | 14,6mm [0.575inch] |                    | 4 - 9mm        |
| DAFME-100                                 | DEFMX-100                          | Size 15**  | 41,5mm [1.634inch] | 39,5mm [1.555inch] | 14,6mm [0.575inch] | 33,3mm [1.311inch] | 4 - 9mm        |
| DBFME-100                                 | DBFMX-100                          | Size 25**  | 41,5mm [1.634inch] | 53,5mm [2.106inch] | 14,5mm [0.571inch] | 47,0mm [1.850inch] | 4 - 9mm        |
| DCFME-100                                 | DCFMX-100                          | Size 37**  | 41,5mm [1.634inch] | 70,0mm [2.756inch] | 14,5mm [0.571inch] | 63,5mm [2.500inch] | 4 - 9mm        |
| DDFME-100                                 | DDFMX-100                          | Size 50*** | 45,0mm [1.772inch] | 67,5mm [2.657inch] | 17,4mm [0.69inch]  | 61,0mm [2.402inch] | 13-16mm        |

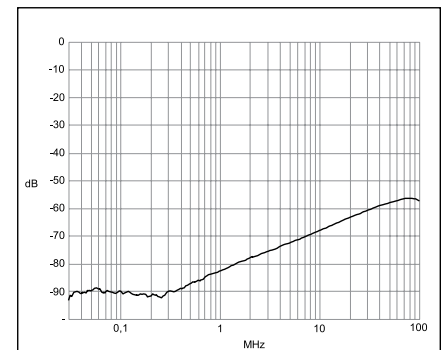
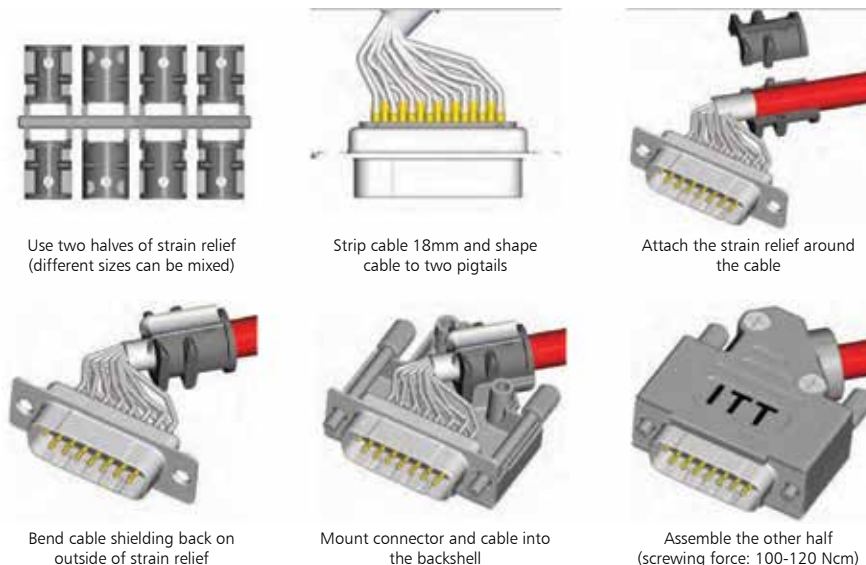
\*Size 9 Backshell: Kit consists of 1 front shell, 1 rear shell, 4 strain reliefs, 2 mounting crosshead screws, 1 jack screw

\*\*Size 15, 25, 37 Backshell: Kit consists of 1 front shell, 1 rear shell, 4 strain reliefs, 2 mounting crosshead screws, 2 jack screws

\*\*\*Size 50 Backshell: Kit consists of 1 front shell, 1 rear shell, 1 cable clamp, 4 mounting crosshead screws, 2 jack screws

### Assembly instructions Size 9, 15, 25, 37

### Attenuation



Dimensions shown in mm  
Specifications and dimensions subject to change

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## Metal Backshell

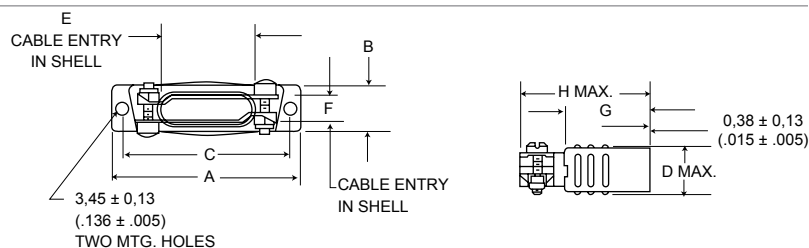
Metal Backshells provide strain relief.  
Various profiles available for different cable routing requirements.

### Product Features

- Qualified to MIL-Spec M85049

| Materials and Finishes |                                                 |
|------------------------|-------------------------------------------------|
| Backshell Material:    | Low Carbon Steel or Brass                       |
| Backshell Finish:      | Chromate over Cadmium (Mil Spec) or Zinc (RoHS) |
| Hardware Material:     | Steel or brass                                  |

## Deep Straight Clamp



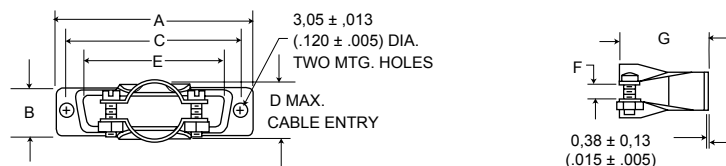
- Kit consists of 1 shell, 2 cable clamps (clamps not displayed), 2 screws, 2 hex nuts.

| Shell Size | RoHS Compliant Part Number | Mil-Spec Parts (Brass) |             | Brass      |
|------------|----------------------------|------------------------|-------------|------------|
|            |                            | Mil-Spec Part Number   | Part Number |            |
| DE         | DE24657-29                 | M85049/48-1-6F         | DE24657-5   | DE24657-16 |
| DA         | DA24658-28                 | M85049/48-1-7F         | DA24658-2   | DA24658-15 |
| DB         | DB24659-27                 | M85049/48-1-8F         | DB24659-2   | DB24659-15 |
| DC         | DC24660-27                 | M85049/48-1-9F         | DC24660-11  | DC24660-16 |
| DD         | DD24661-27                 | M85049/48-1-10F        | DD24661-4   | DD24661-13 |

| Shell Size | Layout | Part Number | Mil Spec Part Number* | A<br>±0,38 (.015) | B<br>±0,572 (.0225) | C<br>±0,38 (.015) | D max.       | E<br>±0,38 (.015) | F<br>±0,38 (.015) | G<br>±0,38 (.015) | H max.        |
|------------|--------|-------------|-----------------------|-------------------|---------------------|-------------------|--------------|-------------------|-------------------|-------------------|---------------|
| DE         | 9      | DE24657     | M85049/48-1-1F        | 30,56 (1.203)     | 12,484 (.4915)      | 24,99 (.984)      | 14,68 (.578) | 9,53 (.375)       | 9,53 (.375)       | 19,05 (.750)      | 31,75 (1.250) |
| DA         | 15     | DA24658     | M85049/48-1-2F        | 38,89 (1.531)     | 12,484 (.4915)      | 33,32 (1.312)     | 14,68 (.578) | 18,11 (.713)      | 7,93 (.312)       | 19,05 (.750)      | 31,75 (1.250) |
| DB         | 25     | DB24659     | M85049/48-1-3F        | 52,78 (2.078)     | 12,484 (.4915)      | 47,04 (1.852)     | 14,68 (.578) | 25,40 (1.000)     | 7,93 (.312)       | 25,40 (1.000)     | 39,70 (1.563) |
| DC         | 37     | DC24660     | M85049/48-1-4F        | 69,04 (2.718)     | 12,484 (.4915)      | 63,50 (2.500)     | 14,68 (.578) | 34,93 (1.375)     | 7,93 (.312)       | 25,40 (1.000)     | 39,70 (1.563) |
| DD         | 50     | DD24661     | M85049/48-1-5F        | 66,68 (2.625)     | 15,253 (.6005)      | 61,11 (2.406)     | 17,45 (.578) | 35,71 (1.406)     | 10,31 (.406)      | 28,57 (1.125)     | 42,88 (1.688) |

\* Parts ordered with no suffix or "Z" suffix will be substituted with "F" suffix.

## Round Cable Clamp



- Kit consists of 1 shell, 2 cable clamps, 2 screws, 2 hex nuts.

| Shell Size | RoHS Compliant Part Number | Mil-Spec Parts (Brass) |             | Brass      |
|------------|----------------------------|------------------------|-------------|------------|
|            |                            | Mil-Spec Part Number   | Part Number |            |
| DE         | DE44994-14                 | M85049/48-2-6F         | DE44994-3   | DE44994-2  |
| DA         | DA20961-26                 | M85049/48-2-7F         | DA20961-3   | DA20961-16 |
| DB         | DB20962-30                 | M85049/48-2-8F         | DB20962-8   | DB20962-18 |
| DC         | DC20963-27                 | M85049/48-2-9F         | DC20963-8   | DC20963-17 |
| DD         | DD20964-32                 | M85049/48-2-10F        | DD20964-8   | DD20964-19 |

| Shell Size | Layout | Part Number | Mil Spec Part Number* | A<br>±0,38 (.015) | B<br>±0,572 (.0225) | C<br>±0,38 (.015) | D max.       | E<br>±0,38 (.015) | F<br>±0,38 (.015) | G<br>±0,38 (.015) |
|------------|--------|-------------|-----------------------|-------------------|---------------------|-------------------|--------------|-------------------|-------------------|-------------------|
| DE         | 9      | DE44994     | M85049/48-2-1F        | 30,68 (1.208)     | 12,70 (.500)        | 24,99 (.984)      | 10,31 (.406) | 16,79 (.661)      | 3,18 (.125)       | 26,18 (1.031)     |
| DA         | 15     | DA20961     | M85049/48-2-2F        | 38,89 (1.531)     | 12,70 (.500)        | 33,33 (1.312)     | 10,31 (.406) | 24,99 (.984)      | 3,18 (.125)       | 26,18 (1.031)     |
| DB         | 25     | DB20962     | M85049/48-2-3F        | 52,78 (2.078)     | 12,70 (.500)        | 47,04 (1.852)     | 15,06 (.593) | 38,48 (1.515)     | 4,75 (.187)       | 26,98 (1.062)     |
| DC         | 37     | DC20963     | M85049/48-2-4F        | 69,04 (2.718)     | 12,70 (.500)        | 63,50 (2.500)     | 18,23 (.718) | 55,14 (2.171)     | 6,35 (.250)       | 26,98 (1.062)     |
| DD         | 50     | DD20964     | M85049/48-2-5F        | 66,68 (2.625)     | 15,47 (.609)        | 61,11 (2.406)     | 20,62 (.812) | 53,16 (2.093)     | 7,92 (.312)       | 26,98 (1.062)     |

\* Parts ordered with no suffix or "Z" suffix will be substituted with "F" suffix.

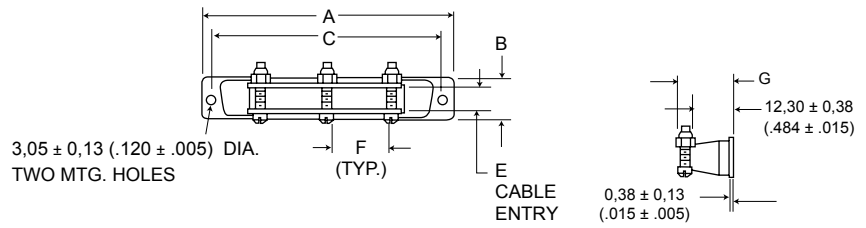
Dimensions shown in mm  
Specifications and dimensions subject to change

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## Short Straight Clamp



- Kit consists of 1 shell, 2 or 3 screws, 2 or 3 hex nuts



| Shell Size | RoHS Compliant Part Number | Mil-Spec Parts (Brass) |             | Brass                         |
|------------|----------------------------|------------------------|-------------|-------------------------------|
|            |                            | Mil-Spec Part Number   | Part Number | 50 $\mu$ in. Gold over Copper |
| DA         | DA19678-212                | M85049/48-3-7F         | DA19678-38  | DA19678-167                   |
| DB         | DB19678-213                | M85049/48-3-8F         | DB19678-53  | DA19678-168                   |
| DC         | DC19678-214                | M85049/48-3-9F         | DC19678-85  | DA19678-138                   |
| DD         | DD19678-214                | M85049/48-3-10F        | DD19678-55  | DA19678-161                   |

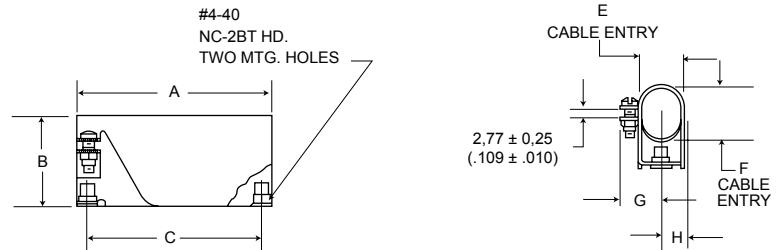
| Shell Size | Layout | Part Number | Mil Spec Part Number* | No. of Cable Locking Screws Included | A<br>±0,38 (.015) | B<br>±0,38 (.015) | C<br>±0,13 (.005) | E<br>±0,38 (.015) | F<br>±0,38 (.015) | G<br>±0,98 (.035) |
|------------|--------|-------------|-----------------------|--------------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| DA         | 15     | DA19678-1   | M85049/48-3-2F        | 2                                    | 38,88 (1.531)     | 12,70 (.500)      | 33,33 (1.312)     | 7,51 (.296)       | 7,93 (.312)       | 16,36 (.644)      |
| DB         | 25     | DB19678-2   | M85049/48-3-3F        | 2                                    | 52,78 (2.078)     | 12,70 (.500)      | 47,04 (1.852)     | 7,51 (.296)       | 20,22 (.796)      | 16,36 (.644)      |
| DC         | 37     | DC19678-3   | M85049/48-3-4F        | 3                                    | 69,04 (2.718)     | 12,70 (.500)      | 63,50 (2.500)     | 7,51 (.296)       | 17,45 (.687)      | 16,36 (.644)      |
| DD         | 50     | DD19678-4   | M85049/48-3-5F        | 3                                    | 66,68 (2.625)     | 15,47 (.690)      | 61,11 (2.406)     | 9,91 (.390)       | 17,45 (.687)      | 17,63 (.694)      |

\* Parts ordered with no suffix or "Z" suffix will be substituted with "F" suffix.

## 90° Entry



- Kit consists of 1 shell, 1 cable clamp, 1 screw, 1 nut, 2 rivnuts (assembled)



| Shell Size | RoHS Compliant Part Number | Mil-Spec Parts (Brass) |             | Brass                         |
|------------|----------------------------|------------------------|-------------|-------------------------------|
|            |                            | Mil-Spec Part Number   | Part Number | 50 $\mu$ in. Gold over Copper |
| DE         | DE19977-72                 | M85049/50-6F           | DE19977-20  | DE19977-47                    |
| DA         | DA19977-68                 | M85049/50-7F           | DA19977-6   | DE19977-40                    |
| DB         | DB19977-69                 | M85049/50-8F           | DB19977-17  | DE19977-43                    |
| DC         | DC19977-70                 | M85049/50-9F           | DC19977-18  | DE19977-45                    |
| DD         | DC19977-71                 | M85049/50-10F          | DD19977-19  | DE19977-44                    |

| Shell Size | Layout | Part Number | Mil Spec Part Number* | A<br>±0,38 (.015) | B<br>±0,38 (.015) | C<br>±0,13 (.005) | E<br>±0,38 (.015) | F<br>±0,38 (.015) | G<br>±0,98 (.035) | H           |
|------------|--------|-------------|-----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
| DE         | 9      | DE19977-5   | M85049/50-1F          | 30,56 (1.203)     | 18,24 (.718)      | 24,99 (.984)      | 11,10 (.437)      | 11,10 (.437)      | 11,89 (.468)      | 7,14 (.281) |
| DA         | 15     | DA19977-1   | M85049/50-2F          | 38,89 (1.531)     | 12,70 (.500)      | 33,33 (1.312)     | 11,10 (.437)      | 11,10 (.437)      | 11,89 (.468)      | 7,14 (.281) |
| DB         | 25     | DB19977-2   | M85049/50-3F          | 52,78 (2.078)     | 12,70 (.500)      | 47,04 (1.852)     | 11,10 (.437)      | 15,88 (.625)      | 11,89 (.468)      | 7,14 (.281) |
| DC         | 37     | DC19977-3   | M85049/50-4F          | 69,04 (2.718)     | 12,70 (.500)      | 63,50 (2.500)     | 11,10 (.437)      | 20,63 (.812)      | 11,89 (.468)      | 7,14 (.281) |
| DD         | 50     | DD19977-4   | M85049/50-5F          | 66,68 (2.625)     | 15,47 (.690)      | 61,11 (2.406)     | 14,28 (.562)      | 23,01 (.906)      | 13,47 (.531)      | 8,71 (.343) |

\* Parts ordered with no suffix or "Z" suffix will be substituted with "F" suffix.

# Plastic Backshell

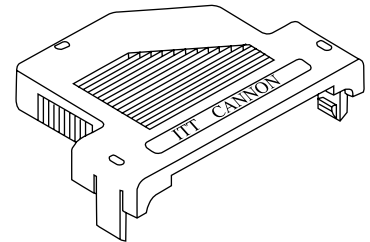
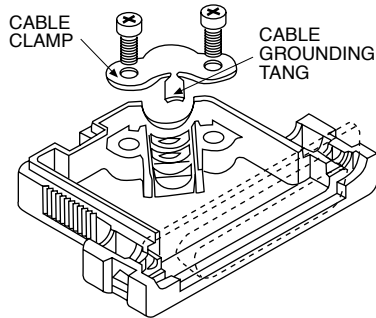


## Snap-Together Metalized Plastic

Metalized plastic backshells reduce EMI/RFI emissions. Metalized plastic provides a lightweight solution. Includes integral strain relieving cable clamp.

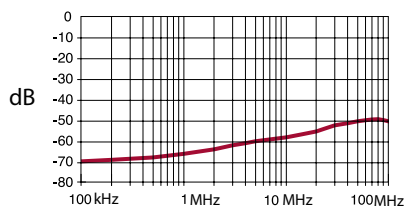
### Product Features

- Improves conformance to FCC DOC #20780 shielding requirements
- No crimp ferrule tooling needed
- Quick and simple assembly using snap-together design feature
- Non-metalized, non-shielded versions available



### Attenuation

Note: Cable grounding tang not available on DE size backshell.



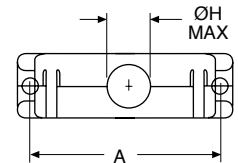
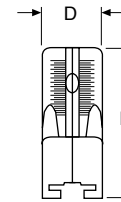
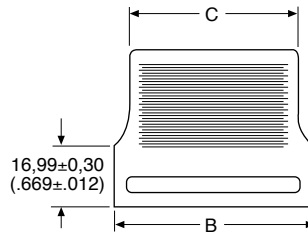
| Specifications     |                 |
|--------------------|-----------------|
| Attenuation:       | -49 dB @ 100MHz |
| Temperature Range: | -20° C to 80° C |

| Materials and Finishes |                               |
|------------------------|-------------------------------|
| Material:              | Thermoplastic, UL 94V-0 rated |
| Finish:                | Nickel over Copper            |

## Straight Exit



- Kit consists of 1 front shell, 1 rear shell, 1 cable clamp, 2 screws
- Optional locking hardware sold separately, see page 14

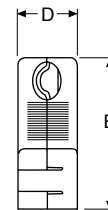
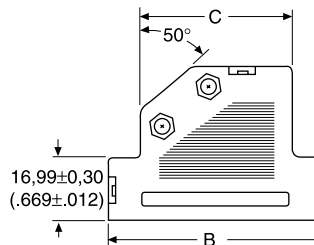


| Shell Size | Layout | Computer Cable |                   |                    | Ribbon Cable |                   | A<br>±0,15 (.006) | B<br>±0,30 (.012) | C<br>±0,30 (.012) | D<br>±0,30 (.120) | E<br>±0,20 (.008) | øH<br>Max.   |
|------------|--------|----------------|-------------------|--------------------|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--------------|
|            |        | Shielded       | Non-Shielded Gray | Non-Shielded Black | Shielded     | Non-Shielded Gray |                   |                   |                   |                   |                   |              |
| DE         | 9      | DE121073-154   | DE121073-159      | DE121073-259       | DE121073-164 | DE121073-169      | 24,95 (.982)      | 30,81 (1.213)     | 23,70 (.933)      | 16,00 (.630)      | 35,99 (1.417)     | 7,32 (.288A) |
| DA         | 15     | DA121073-150   | DA121073-155      | DA121073-255       | DA121073-160 | DA121073-165      | 33,30 (1.311)     | 39,09 (1.539)     | 31,80 (1.252)     | 16,00 (.630)      | 42,00 (1.654)     | 8,31 (.327)  |
| DB         | 25     | DB121073-151   | DB121073-156      | DB121073-256       | DB121073-161 | DB121073-166      | 47,00 (1.850)     | 53,01 (2.087)     | 45,01 (1.772)     | 16,00 (.630)      | 42,00 (1.654)     | 10,52 (.414) |
| DC         | 37     | DC121073-152   | DC121073-157      | DC121073-257       | DC121073-162 | DC121073-167      | 63,45 (2.498)     | 69,29 (2.728)     | 60,30 (2.374)     | 16,00 (.630)      | 42,00 (1.654)     | 12,32 (.485) |
| DD         | 50     | DD121073-153   | DD121073-158      | DD121073-258       | -            | -                 | 61,10 (2.410)     | 66,90 (2.634)     | 58,30 (2.295)     | 19,00 (.748)      | 42,00 (1.654)     | 13,00 (.512) |

## 50° Exit



- Kit consists of 1 front shell, 1 rear shell, 1 cable clamp, 2 screws
- Optional locking hardware sold separately, see page 9



| Shell Size | Layout | Shielded Part # | Non-Shielded Part # Gray | B<br>±0,30 (.012) | C<br>±0,30 (.012) | D<br>±0,30 (.012) | E<br>±0,20 (.008) | Cable Diameter Min. | Cable Diameter Max. |
|------------|--------|-----------------|--------------------------|-------------------|-------------------|-------------------|-------------------|---------------------|---------------------|
| DE         | 9      | DE121073-54     | DE121073-59              | 35,99 (1.417)     | 22,00 (8.66)      | 16,00 (.630)      | 35,99 (1.417)     | 3,51 (.138)         | 7,49 (.295)         |
| DA         | 15     | DA121073-50     | DA121073-55              | 44,29 (1.744)     | 27,31 (1.075)     | 16,00 (.630)      | 42,01 (1.654)     | 6,50 (.256)         | 8,99 (.354)         |
| DB         | 25     | DB121073-51     | DB121073-56              | 57,99 (2.283)     | 41,00 (1.614)     | 16,00 (.630)      | 42,01 (1.654)     | 6,50 (.256)         | 11,00 (.433)        |
| DC         | 37     | DC121073-52     | DC121073-57              | 74,50 (2.933)     | 57,51 (2.264)     | 16,00 (.630)      | 42,01 (1.654)     | 6,50 (.256)         | 11,00 (.433)        |
| DD         | 50     | DD121073-53     | DD121073-58              | 72,97 (2.873)     | 54,99 (2.165)     | 19,00 (.748)      | 42,01 (1.654)     | 8,99 (.354)         | 13,00 (.512)        |

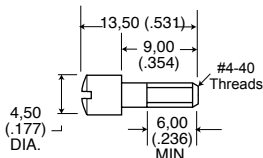
Dimensions shown in mm  
Specifications and dimensions subject to change

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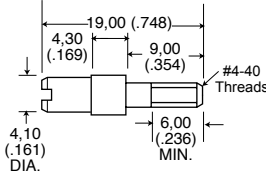


## Locking Hardware for Snap-Together Plastic Backshell

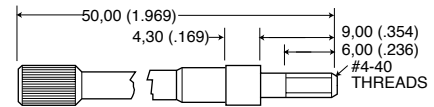
Recessed Jackscrew



Extended Jackscrew



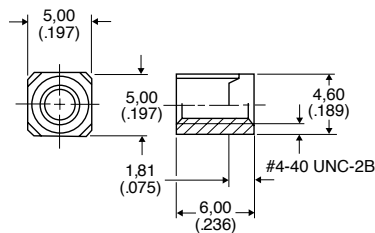
Thumbscrew



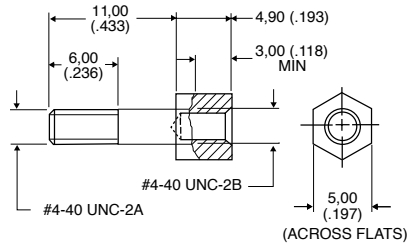
| Materials and Finishes                  |          |        |                                 |
|-----------------------------------------|----------|--------|---------------------------------|
| Part Number                             | Material | Finish | Quantity Required per Connector |
| 250-8501-004                            | Brass    | Nickel | 2                               |
| 250-8501-009 (M3) ,250-8501-010 (#4-40) | Brass    | Nickel | 2                               |
| 250-8501-013                            | Brass    | Nickel | 2                               |

## Jackpost for In-Line Connections

Rectangular Nut



Jackpost



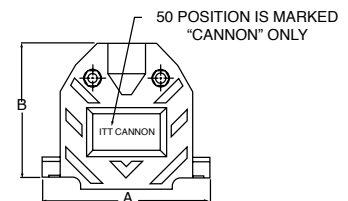
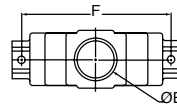
Jackpost Assembly



- Assembly consists of 1 rectangular nut, 1 jackpost, 1 # 4-40 lock washer.

| Materials and Finishes |          |        |                                 |
|------------------------|----------|--------|---------------------------------|
| Part Number            | Material | Finish | Quantity Required per Connector |
| D121073-19             | Brass    | Nickel | 2                               |

## Straight Exit - Metalized Plastic Low Cost



- Kit consists of 1 front shell, 1 rear shell, 1 cable clamp, 2 screws, screw lock assembly kit

| Shell Size | Layout | Part Number  | A             | B             | C            | D            | ø E          | F             |
|------------|--------|--------------|---------------|---------------|--------------|--------------|--------------|---------------|
| DE         | 9      | 980-2000-350 | 30,91 (1.217) | 39,29 (1.547) | 16,26 (.640) | 16,26 (.640) | 10,16 (.400) | 24,99 (.984)  |
| DA         | 15     | 980-2000-351 | 39,24 (1.545) | 38,23 (1.505) | 16,26 (.640) | 16,26 (.640) | 10,16 (.400) | 33,32 (1.312) |
| DB         | 25     | 980-2000-352 | 53,09 (2.090) | 42,04 (1.655) | 18,03 (.710) | 16,26 (.640) | 13,26 (.522) | 47,17 (1.857) |
| DC         | 37     | 980-2000-353 | 69,44 (2.734) | 46,48 (1.830) | 23,01 (.906) | 16,26 (.640) | 18,44 (.726) | 63,50 (2.500) |
| DD         | 50     | 980-2000-354 | 67,18 (2.645) | 47,12 (1.855) | 23,88 (.940) | 19,56 (.770) | 18,44 (.726) | 61,11 (2.406) |

Materials and Finishes: Thermoplastic, UL 94V-0 rated, Nickel plated



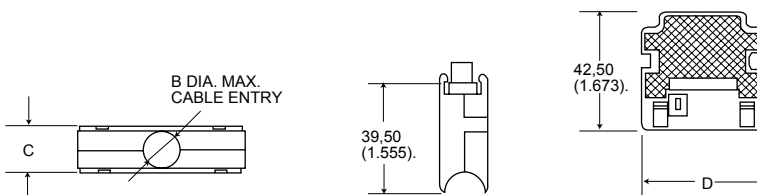
Dimensions shown in mm  
Specifications and dimensions subject to change

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## Snap-Together Universal



- 2-piece snap-together design for quick assembly.
- Customer furnishes tie-wrap.



| Materials and Finishes |                                     |
|------------------------|-------------------------------------|
| Material:              | Black Thermoplastic, UL 94V-0 rated |

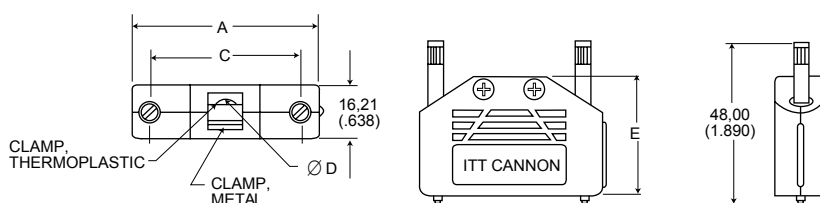
| Shell Size | Layout | Part Number | øB max.      | C<br>±0,20 (.008) | D<br>±0,20 (.008) |
|------------|--------|-------------|--------------|-------------------|-------------------|
| DE         | 9      | DE115339-20 | 7,01 (.276)  | 17,00 (.669)      | 19,51 (.768)      |
| DA         | 15     | DA115339-21 | 9,60 (.378)  | 17,00 (.669)      | 27,79 (1.094)     |
| DB         | 25     | DB115339-22 | 11,61 (.457) | 17,00 (.669)      | 41,61 (1.638)     |
| DC         | 37     | DC115339-23 | 13,00 (.512) | 17,00 (.669)      | 59,99 (2.283)     |
| DD         | 50     | DD115339-24 | 16,00 (.630) | 19,81 (.780)      | 52,32 (2.060)     |

Note: Part Numbers above replace the following part number series: DE110963-1 to DD110963-5

## One-Piece Snap-Together



- Low cost, mounting hardware included with 2 thumbscrews, 1 cable clamp



| Materials and Finishes |               |
|------------------------|---------------|
| Backshell Material:    | Polypropylene |
| Hardware Material:     | Steel         |
| Hardware Finish:       | Black Nickel  |

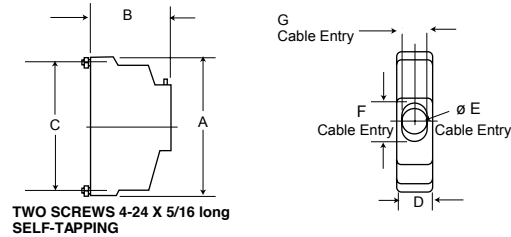
| Shell Size | Layout | Part Number | A             | C             | ø D max.    | E             |
|------------|--------|-------------|---------------|---------------|-------------|---------------|
| DE         | 9      | DEBS-9      | 35,20 (1.386) | 24,99 (.984)  | 5,69 (.224) | 27,51 (1.083) |
| DA         | 15     | DABS-15     | 43,31 (1.705) | 33,33 (1.312) | 5,69 (.224) | 31,19 (1.228) |
| DB         | 25     | DBBS-25     | 57,20 (2.252) | 47,04 (1.852) | 6,50 (.256) | 38,30 (1.508) |
| DC         | 37     | DCBS-37     | 72,00 (2.83)  | 62,00 (2.44)  | 7,80 (.307) | 43,08 (1.69)  |
| DD         | 50     | DDBS-50     | 73,70 (2.90)  | 63,70 (2.50)  | 8,20 (.322) | 48,04 (1.89)  |

## One-Piece Plastic

### Straight Exit



- Kit consists of 1 shell, 1 cable clamp, 1 set screw
- Mounting hardware included
- 2 screws #4-24 x 5/16 long self-tapping
- Accommodates spring latches



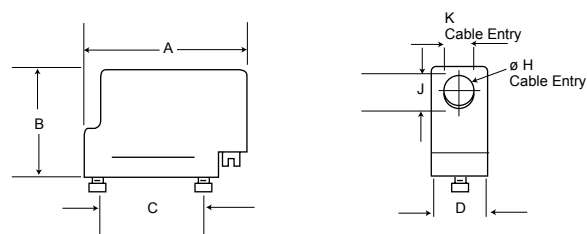
| Materials and Finishes |                                     |
|------------------------|-------------------------------------|
| Material:              | Black Thermoplastic, UL 94V-0 rated |
| Hardware Material:     | Steel                               |
| Hardware Finish:       | Chromate over Zinc                  |

| Shell Size | Layout | Part Number | A<br>±0,38 (.015) | B<br>±0,38 (.015) | C<br>±0,13 (.005) | D<br>±0,38 (.015) | ØE<br>±0,25 (.010) | F<br>±0,25 (.010) | G<br>±0,25 (.010) |
|------------|--------|-------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|
| DE         | 9      | DE51218     | 30,94 (1.218)     | 25,40 (1.000)     | 24,99 (.984)      | 12,70 (.500)      | 7,14 (.281)        | —                 | —                 |
| DA         | 15     | DA51210     | 39,27 (1.546)     | 25,40 (1.000)     | 33,33 (1.312)     | 12,70 (.500)      | 9,14 (.360)        | —                 | —                 |
| DB         | 25     | DB51212     | 53,16 (2.093)     | 31,75 (1.250)     | 47,04 (1.852)     | 12,70 (.500)      | —                  | 12,52 (.493)      | 9,15 (.360)       |
| DC         | 37     | DC51214     | 69,44 (2.734)     | 38,10 (1.500)     | 63,50 (2.500)     | 12,70 (.500)      | —                  | 17,63 (.694)      | 9,15 (.360)       |
| DD         | 50     | DD51216     | 67,06 (2.640)     | 38,10 (1.500)     | 61,11 (2.406)     | 15,47 (.690)      | —                  | 18,64 (.734)      | 11,89 (.468)      |

### 90° Exit



- Kit consists of 1 shell, 1 cable clamp, 1 set screw
- Mounting hardware included
- 2 screws #4-24 x 5/16 long self-tapping



| Materials and Finishes |                                     |
|------------------------|-------------------------------------|
| Material:              | Black Thermoplastic, UL 94V-0 rated |
| Hardware Material:     | Steel                               |
| Hardware Finish:       | Chromate over Zinc                  |

| Shell Size | Layout | Part Number | A<br>±0,38 (.015) | B<br>±0,38 (.015) | C<br>±0,13 (.005) | D<br>±0,38 (.015) | ØH<br>±0,25 (.010) | J<br>±0,25 (.010) | K<br>±0,25 (.010) |
|------------|--------|-------------|-------------------|-------------------|-------------------|-------------------|--------------------|-------------------|-------------------|
| DE         | 9      | DE51219     | 37,95 (1.494)     | 25,40 (1.000)     | 24,99 (.984)      | 12,70 (.500)      | 7,14 (.281)        | —                 | —                 |
| DA         | 15     | DA51211     | 46,28 (1.822)     | 25,40 (1.000)     | 33,33 (1.312)     | 12,70 (.500)      | 9,14 (.360)        | —                 | —                 |
| DB         | 25     | DB51213     | 60,15 (2.368)     | 31,75 (1.250)     | 47,04 (1.852)     | 12,70 (.500)      | —                  | 12,52 (.493)      | 9,15 (.360)       |
| DC         | 37     | DC51215     | 76,43 (3.009)     | 38,10 (1.500)     | 63,50 (2.500)     | 12,70 (.500)      | —                  | 17,63 (.694)      | 9,15 (.360)       |
| DD         | 50     | DD51217     | 74,04 (2.915)     | 38,10 (1.500)     | 61,11 (2.406)     | 15,47 (.690)      | —                  | 18,64 (.734)      | 11,89 (.468)      |

# Locking Hardware

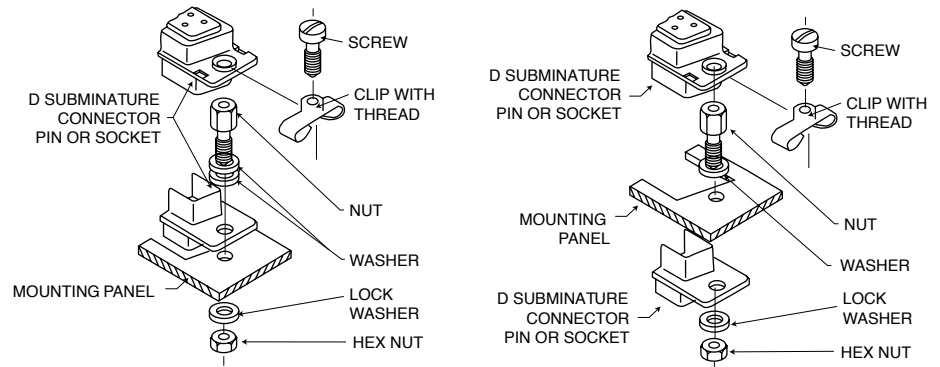


## Screw Lock Assemblies

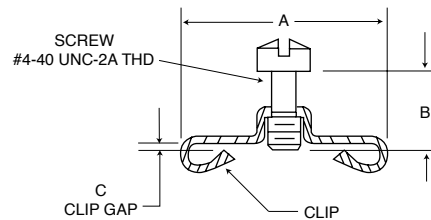
Refer to the accessories selection guide on pages 6-7 for use with Cannon backshells. Male or Female RoHS compliant stainless steel and brass versions are available. Please contact factory for more information.

### Product Features

- Ensures positive mating
- Provides locking and latching for high vibration applications



## Male Screw Lock



- Kit consists of 1 screw and 1 clip
- Order 2 per connector
- Similar to M24308/25

| Materials and Finishes |                            |
|------------------------|----------------------------|
| Material:              | Steel                      |
| Finish:                | Chromate over Cadmium/Zinc |

| Shell Size     | each P/N Cd | 2 each P/N Cd | A<br>±0,38(.015) | B<br>±0,2 (.010) | C<br>±0,13 (.005) | RoHS Compliant<br>P/N each Zn | RoHS Compliant<br>P/N 2 each Zn | Stainless Steel<br>P/N each |
|----------------|-------------|---------------|------------------|------------------|-------------------|-------------------------------|---------------------------------|-----------------------------|
| DE, DA, DB, DC | D20419      | D20419-119    | 14,10 (.555)     | 6,35 (.250)      | 1,22 (.048)       | D20419-211                    | D20419-218                      | D20419-14                   |
| DE, DA, DB, DC | D20419-18   | D20419-121    | 14,10 (.555)     | 7,14 (.281)      | 1,70 (.067)       | D20419-212                    | D20419-219                      | D20419-38                   |
| DE, DA, DB, DC | D20419-21   | D20419-122    | 14,10 (.555)     | 7,14 (.281)      | 2,34 (.092)       | D20419-213                    | D20419-220                      | -                           |
| DE, DA, DB, DC | D20419-104  | D20419-216    | 14,10 (.555)     | 7,92 (.312)      | 2,34 (.092)       | D20419-214                    | D20419-221                      | -                           |
| DD             | D20420      | D20420-097    | 16,66 (.656)     | 6,35 (.250)      | 1,22 (.048)       | D20420-157                    | D20420-163                      | D20420-21                   |
| DD             | D20420-13   | D20420-099    | 16,66 (.656)     | 7,14 (.281)      | 1,70 (.067)       | D20420-158                    | D20420-164                      | D20420-136                  |
| DD             | D20420-15   | D20420-100    | 16,66 (.656)     | 7,14 (.281)      | 2,34 (.092)       | D20420-159                    | D20420-165                      | D20420-70                   |
| DD             | D20420-86   | D20420-162    | 16,66 (.656)     | 7,92 (.312)      | 2,34 (.092)       | D20420-160                    | D20420-166                      | -                           |

Dimensions shown in mm  
Specifications and dimensions subject to change

www.ittcannon.com



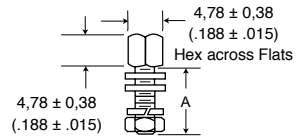
## Female Screw Lock



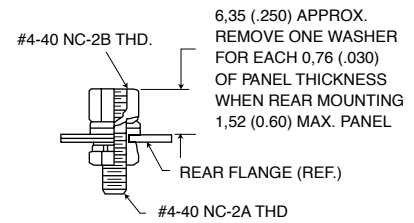
- Kit consists of 1 nut, 3 washer, 1 lock washer, 1 hex nut.
- Order 2 per connector.

| Materials and Finishes |                                                 |
|------------------------|-------------------------------------------------|
| Material:              | Steel                                           |
| Finish:                | Chromate over Cadmium (Mil Spec) or Zinc (RoHS) |

### Front Panel Mount



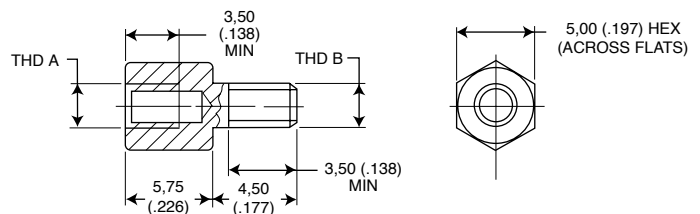
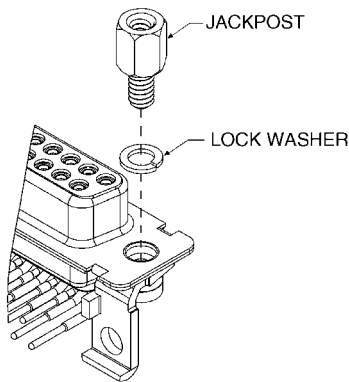
### Rear Panel Mount



NOTE: (1) A 6 inch/pound (female) and 4 inch/pound (male) maximum torque during assembly is recommended on steel screw lock assemblies. (2) A third flat washer is supplied for front panel mounting of tab shell connectors.

| Yellow Chromate over cadmium each | Over Cadmium Kit of 2 each | Yellow Chromate over zinc each | RoHS Compliant Part Number | A<br>± 0,38 (.015) | Mil-Spec Part Number Ref | Stainless Steel Part Number |
|-----------------------------------|----------------------------|--------------------------------|----------------------------|--------------------|--------------------------|-----------------------------|
| D20418-2                          | D20418-82                  | D20418-128                     | D20418-134                 | 7,92 (.312)        | M24308/26-1              | D20418-14 REF               |
| D20418-50                         | D20418-131                 | -                              | D20418-135                 | 12,70 (.500)       | -                        | D20418-102                  |
| D20418-39                         | D20418-83                  | D20418-129                     | D20418-136                 | 15,88 (.625)       | M24308/26-2              | D20418-77 REF               |
| D20418-74                         | D20418-132                 | -                              | D20418-137                 | 19,05 (.750)       | -                        | -                           |

## Screw Locks for Connectors with Integral Threaded Inserts



- Kit consists of 1 jackpost, 1 lock washer.
- Order 2 per connector.

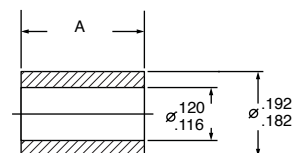
| Part Number | Thread Type   |               |
|-------------|---------------|---------------|
|             | THD A         | THD B         |
| D121073-39  | # 4-40 UNC-2B | # 4-40 UNC-2A |
| D112041 *   | # 4-40 UNC-2B | # 4-40 UNC-2A |
| D121073-42  | M3            | M3            |

## Loose Spacer

Part Number: 253-0343-000 (D\*M Style)  
 Part Number: 253-0343-011 (D\*MA Style)  
 Part Number: 253-0343-016 (D\*MA Style) St. Stl.

Dim A  
 5.84 ± .08 (.230 ± .003)  
 9.40 ± .13 (.370 ± .005)  
 9,40 +/- 0,13 (.370 +/- .005)

| Materials and Finishes |                       |
|------------------------|-----------------------|
| Material:              | Aluminum              |
| Finish:                | Chromate over Cadmium |



RoHS compliant stainless steel and brass versions are available, please contact factory for more information.



Dimensions shown in mm  
 Specifications and dimensions subject to change

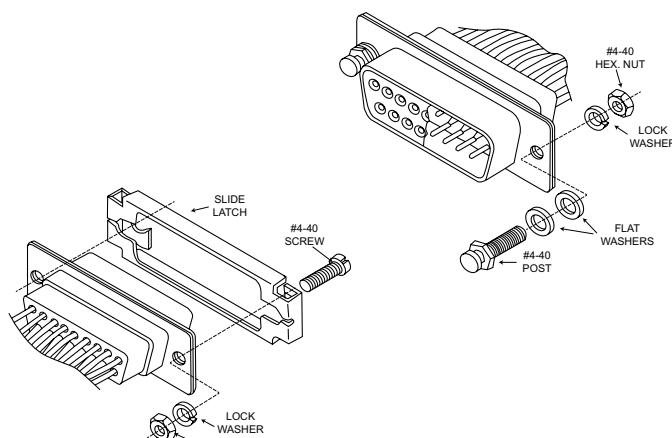
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## Slide Lock Assemblies

ITT offers the largest variety of locking and latching hardware. Refer to the accessories selection guide on pages 6-7 for use with Cannon backshells.

### Product Features

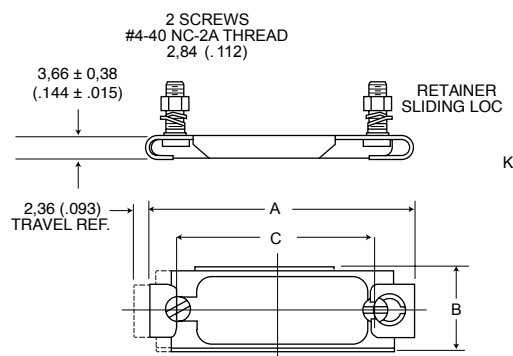
- Ensures positive mating
- Provides locking and latching for high vibration applications



## Sliding Lock Retainer Assembly



- Kit consists of 1 sliding lock plate, 2 mounting screws, 2 lock washer, 2 hex nuts
- Order 1 kit per connector



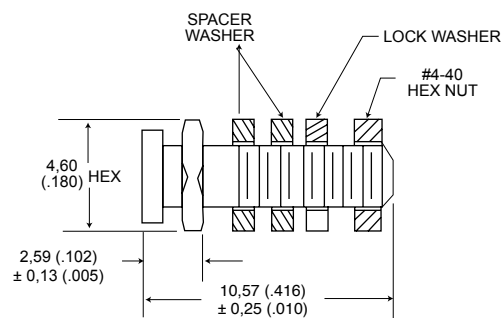
| Descriptions       | Material        | Finish/Treatment             |
|--------------------|-----------------|------------------------------|
| Sliding Lock Plate | Stainless Steel | Passivated                   |
| Screw, Mounting    | Steel           | Trivalent Chromate over Zinc |
| Washer Lock        | Steel           |                              |
| Nut, Hex           | Steel           |                              |

| Shell Size | Layout | Part Number | A<br>± 0,38 (.015) | B<br>± 0,38 (.015) | C<br>± 0,13 (.005) |
|------------|--------|-------------|--------------------|--------------------|--------------------|
| DE         | 9      | DE51224-1   | 35,05 (1.380)      | 12,70 (.500)       | 25,00 (.984)       |
| DA         | 15     | DA51220-1   | 43,70 (1.720)      | 12,70 (.500)       | 33,32 (1.312)      |
| DB         | 25     | DB51221-1   | 57,40 (2.260)      | 12,70 (.500)       | 47,04 (1.852)      |
| DC         | 37     | DC51222-1   | 73,86 (2.908)      | 12,70 (.500)       | 63,50 (2.500)      |
| DD         | 50     | DD51223-1   | 71,47 (2.814)      | 15,47 (.609)       | 61,11 (2.406)      |

## Slide Lock Post Assemblies



- Consists of 1 post, 2 washers, 1 lock washer, and 1 hex nut.<sup>1</sup>
- Order 2 per connector.<sup>2</sup>



NOTE: When rear-mounting connector to a 1/16" panel, delete the second spacer washer.

\* Not RoHS Compliant.

| Part Number:        |               |                                                |
|---------------------|---------------|------------------------------------------------|
| Each <sup>1,2</sup> | Kit of 2 each |                                                |
| D53018*             | D53018-11*    | Material: Steel, Finish: Chromate over Cadmium |
| D53018-14*          | D53018-20*    | Material: Stainless Steel, Finish: Passivated  |
| P/N D53018-21       | D53018-22     | Material: Steel, Finish: Chromate over Zinc    |

Dimensions shown in mm  
Specifications and dimensions subject to change

www.ittcannon.com

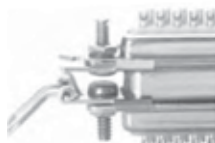
## Spring Latch Assemblies

Refer to the accessories selection guide on pages 6-7 for use with Cannon backshells.

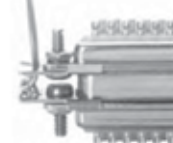
### Product Features

- Low Cost
- Minimizes field connection time
- Positive lock between connectors
- Packaged 2 kits per bag

Unlocked



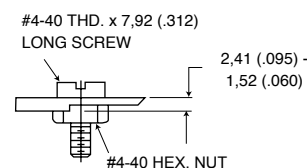
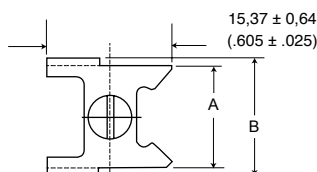
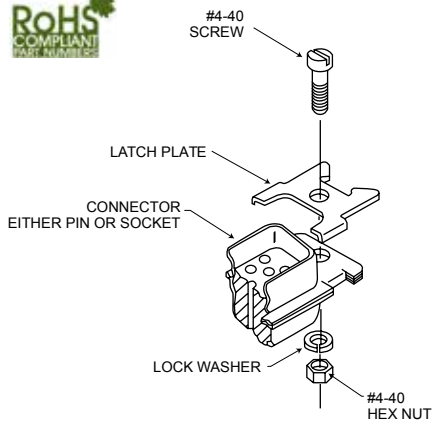
Locked



#### Materials and Finishes

|           |                 |
|-----------|-----------------|
| Material: | Stainless Steel |
| Finish:   | Passivated      |

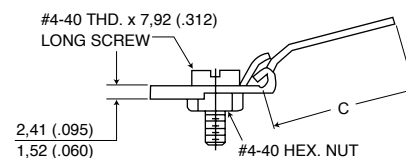
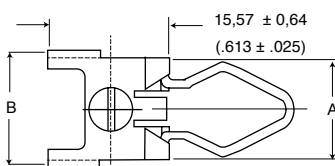
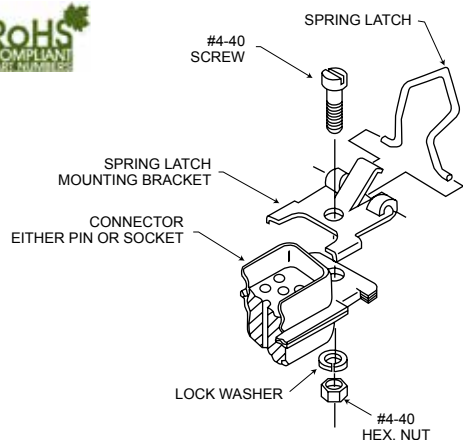
## Spring Latch Plate Assembly



- Kit consists of 1 plate, 1 screw, 1 lock washer, 1 hex nut.
- Order 2 kits per connector.

| Shell Size     | Layout       | Part Number | A<br>± 0,38 (.015) | B<br>± 0,38 (.015) | Part Number<br>Kit of 2 each |
|----------------|--------------|-------------|--------------------|--------------------|------------------------------|
| DE, DA, DB, DC | 9,15, 25, 37 | D110278     | 12,42 (.489)       | 14,35 (.565)       | D110278-4                    |
| DD             | 50           | D110280     | 15,47 (.609)       | 17,09 (.673)       | D110280-3                    |

## Spring Latch Assembly



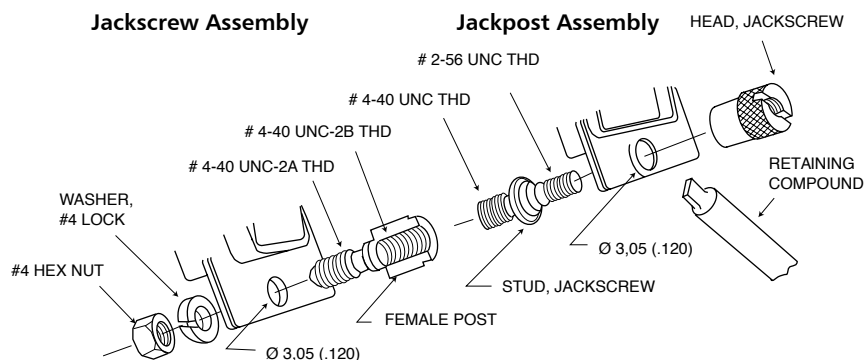
| Shell Size     | Layout       | Part Number | A<br>± 0,38 (.015) | B<br>± 0,38 (.015) | C<br>± 0,51 (.020) | Part Number<br>Kit of 2 each |
|----------------|--------------|-------------|--------------------|--------------------|--------------------|------------------------------|
| DE, DA, DB, DC | 9,15, 25, 37 | D110277     | 12,42 (.489)       | 14,35 (.565)       | 18,59 (.732)       | D110277-2                    |
| DD             | 50           | D110279     | 15,47 (.609)       | 17,09 (.673)       | 18,59 (.732)       | D110279-3                    |

D110277-4 Rear panel mount version also available

- Kit consists of 1 spring, 1 screw, 1 bracket, 1 lock washer, 1 hex nut.
- Order 2 kits per connector. Front panel mounting.

## Jackscrew/Jackpost Assemblies

Refer to the accessories selection guide on pages 6-7 for use with Cannon backshells.

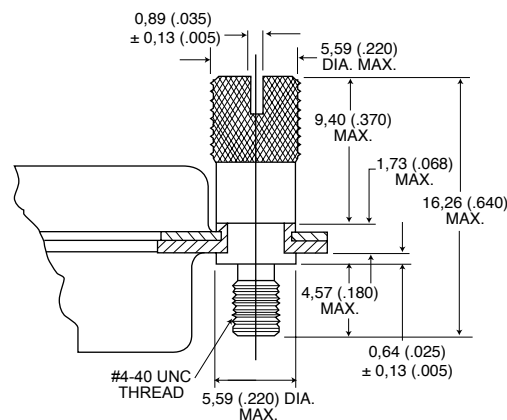


### Jackscrew Assembly



- Kit consists of 2 studs, 2 heads, 1 tube retaining compound (US only)
- Order one kit per connector

| Part Number: D110550   |                 |
|------------------------|-----------------|
| Materials and Finishes |                 |
| Material:              | Stainless Steel |
| Treatment:             | Passivated      |

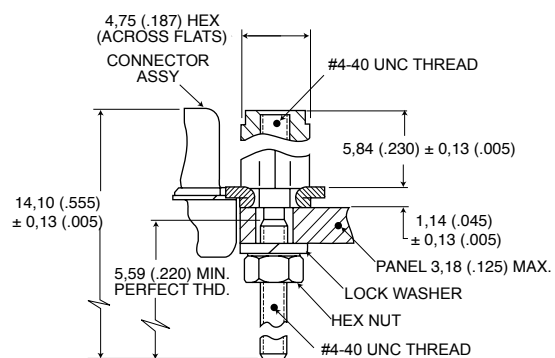


### Jackpost Assembly



- Kit consists of 2 posts, 2 hex nuts, 2 lock washer
- Order one kit per connector

| Part Number: D110551   |                 |
|------------------------|-----------------|
| Materials and Finishes |                 |
| Material:              | Stainless Steel |
| Treatment:             | Passivated      |



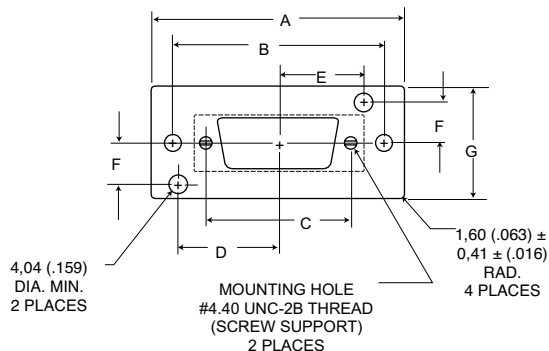
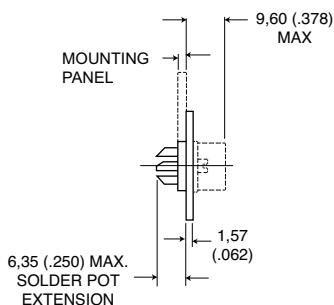
NOTE: Jack post is not compatible with rear-panel mount connectors.

# Guide Pin Plate

## Female



- Useful in blind mate applications.
- Kit consists of 1 plate, 2 screws.
- Guide pin inserts for Size 8 cavities for Combo D® connectors also available. Refer to Combo D catalog.

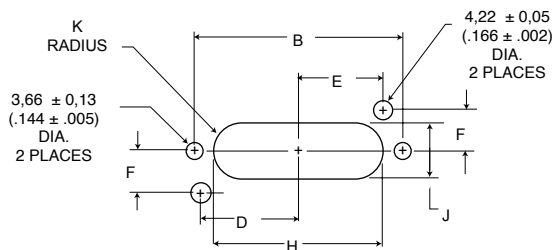


### Materials and Finishes

|                              |                    |
|------------------------------|--------------------|
| Plate and Hardware Material: | Steel              |
| Plate and Hardware Finish:   | Chromate over Zinc |

| Shell Size | Layout | Part Number | A<br>±0,41 (.016) | B<br>±0,13 (.005) | C<br>±0,13 (.005) | D<br>±0,13 (.005) | E<br>±0,13 (.005) | F<br>±0,13 (.005) | G<br>±0,41 (.016) | H<br>±0,41 (.016) | J<br>±0,41 (.016) | K<br>±0,41 (.016) |
|------------|--------|-------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| DE         | 9      | DE111920    | 49,61 (1.953)     | 40,08 (1.578)     | 25,00 (.986)      | 18,65 (.734)      | 15,27 (.601)      | 9,52 (.375)       | 25,40 (1.000)     | 30,58 (1.204)     | 12,29 (.484)      | 6,15 (.242)       |
| DA         | 15     | DA22214     | 57,96 (2.282)     | 48,41 (1.906)     | 33,32 (1.312)     | 22,81 (.898)      | 19,43 (.765)      | 9,52 (.375)       | 25,40 (1.000)     | 38,91 (1.532)     | 12,29 (.484)      | 6,15 (.242)       |
| DB         | 25     | DB22254     | 71,63 (2.820)     | 62,13 (2.446)     | 47,04 (1.852)     | 29,67 (1.168)     | 26,29 (1.035)     | 9,52 (.375)       | 25,40 (1.000)     | 51,21 (2.016)     | 11,91 (.469)      | 5,94 (.234)       |
| DC         | 37     | DC22071     | 88,11 (3.469)     | 78,59 (3.094)     | 63,50 (2.500)     | 37,90 (1.492)     | 34,52 (1.359)     | 9,52 (.375)       | 25,40 (1.000)     | 67,49 (2.657)     | 11,91 (.469)      | 5,94 (.234)       |
| DD         | 50     | DD21961     | 85,72 (3.375)     | 76,20 (3.000)     | 61,11 (2.406)     | 36,50 (1.437)     | 33,32 (1.312)     | 11,10 (.437)      | 28,58 (1.125)     | 65,10 (2.563)     | 14,30 (.563)      | 7,16 (.282)       |

## Recommended Panel Cutout

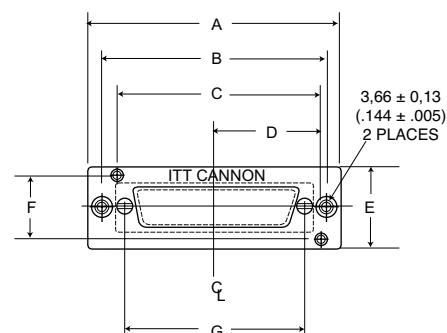
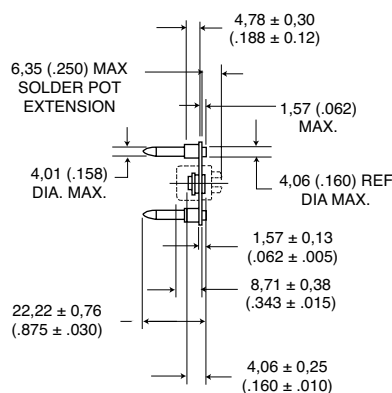


## Male



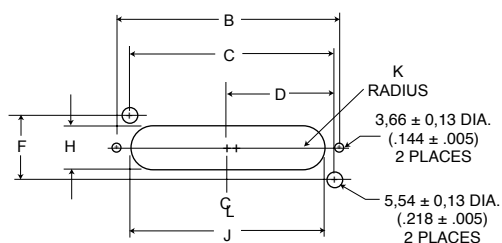
- Useful in blind mate applications.
- Kit consists of 1 plate, 2 screws, 2 rivets, 2 guide pins, 2 washer
- Guide pin inserts for Size 8 cavities for Combo D® connectors also available. Refer to Combo D catalog.

| Materials and Finishes       |                    |
|------------------------------|--------------------|
| Plate and Hardware Material: | Steel              |
| Plate and Hardware Finish:   | Chromate over Zinc |
| Guide Pin Material:          | Stainless Steel    |



| Shell Size | Layout | Part Number | A<br>±0,41 (.016) | B<br>±0,13 (.005) | C<br>±0,13 (.005) | D<br>±0,13 (.005) | E<br>±0,13 (.005) | F<br>±0,13 (.005) | G<br>±0,41 (.016) | H<br>±0,41 (.016) | J<br>±0,41 (.016) | K<br>±0,41 (.016) |
|------------|--------|-------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| DE         | 9      | DE111919    | 49,61 (1.953)     | 40,08 (1.578)     | 33,91 (1.335)     | 18,65 (.734)      | 25,40 (1.000)     | 19,05 (.750)      | 25,00 (.984)      | 12,29 (.484)      | 30,58 (1.204)     | 6,15 (.242)       |
| DA         | 15     | DA22213     | 57,96 (2.282)     | 48,41 (1.906)     | 42,24 (1.663)     | 22,81 (.898)      | 25,40 (1.000)     | 19,05 (.750)      | 33,32 (1.312)     | 12,29 (.484)      | 38,89 (1.531)     | 6,15 (.242)       |
| DB         | 25     | DB22255     | 71,63 (2.820)     | 62,13 (2.446)     | 55,96 (2.203)     | 29,67 (1.168)     | 25,40 (1.000)     | 19,05 (.750)      | 47,04 (1.852)     | 12,29 (.484)      | 51,99 (2.047)     | 6,15 (.242)       |
| DC         | 37     | DC22070     | 88,11 (3.469)     | 78,59 (3.094)     | 72,42 (2.851)     | 37,90 (1.492)     | 25,40 (1.000)     | 19,05 (.750)      | 63,50 (2.500)     | 12,29 (.484)      | 68,25 (2.687)     | 6,15 (.242)       |
| DD         | 50     | DD21962     | 85,72 (3.375)     | 76,20 (3.000)     | 69,82 (2.749)     | 36,50 (1.437)     | 28,58 (1.125)     | 22,20 (.874)      | 61,11 (2.406)     | 15,06 (.593)      | 66,93 (2.635)     | 7,52 (.296)       |

## Recommended Panel Cutout

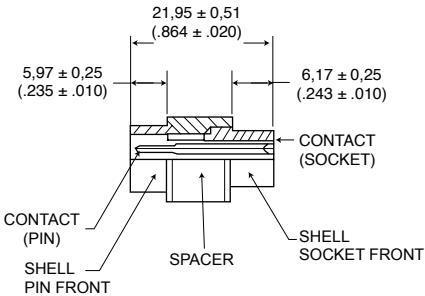
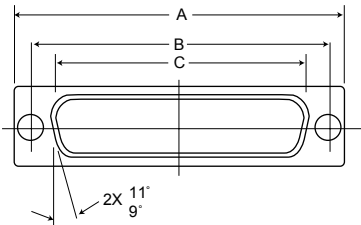


# Connector Saver

## High Reliability Connector Saver



Engaging Face, Pin Side



NOTE: Hardware removed for clarity.

| Shell Size | Layout | Part Number | A<br>± 0,40 (.015) | B<br>± 0,25 (.010) | C<br>± 0,25 (.010) |
|------------|--------|-------------|--------------------|--------------------|--------------------|
| DE         | 9      | DEBMAM9PS   | 30,81 (1.213)      | 24,99 (.984)       | 16,92 (.666)       |
| DA         | 15     | DABMAM15PS  | 39,14 (1.541)      | 33,32 (1.312)      | 25.25 (.994)       |
| DB         | 50     | DBBMAM25PS  | 53,04 (2.088)      | 47,04 (1.852)      | 38,96 (1.534)      |
| DC         | 37     | DCBMAM37PS  | 69,32 (2.729)      | 63,50 (2.500)      | 55,42 (2.182)      |
| DD         | 50     | DDBMAM50PS  | 66,93 (2.635)      | 61,11 (2.406)      | 52,81 (2.079)      |

| Specifications                   |                      |
|----------------------------------|----------------------|
| Temperature:                     | -55° C to 105° C     |
| Current Rating:                  | 7 A                  |
| Dielectric withstanding Voltage: | 500 VAC at Sea Level |

| Materials and Finishes |                               |                           |
|------------------------|-------------------------------|---------------------------|
| Description            | Material                      | Finish                    |
| Shells:                | Steel                         | Yellow Chromate over Zinc |
| Insulator:             | White Thermoplastic, UL 94V-0 | —                         |
| Contacts:              | Copper Alloy                  | Gold Over Copper          |
| Locking Hardware:      | Stainless Steel               | Passivated                |

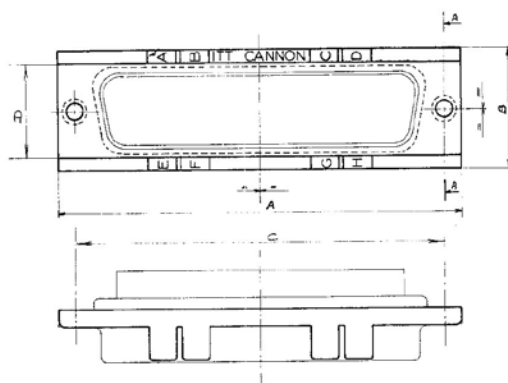
# Miscellaneous



## Polarizing Plates

Material: Black plastic, 94-V-O rated

| Part Number by Shell Size | A            | B          |
|---------------------------|--------------|------------|
| DE115398                  | 1.208 (30.7) | 0.629 (16) |
| DA115398-1                | 1.535 (39.0) | 0.629 (16) |
| DB115398-2                | 2.082 (52.9) | 0.629 (16) |
| DC115398-3                | 2.726 (69.2) | 0.629 (16) |
| DD115398-4                | 2.630 (66.8) | 0.749 (19) |



## Polarizing Scheme

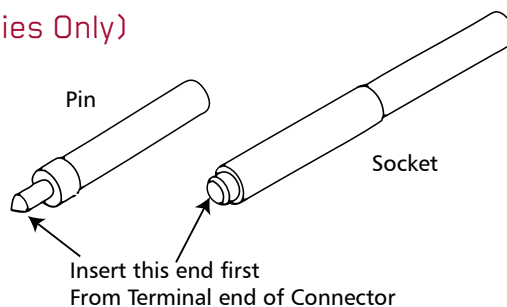
| Polarizing Keys | A | B | C | D | E | F | G | H |
|-----------------|---|---|---|---|---|---|---|---|
| Position 1      | ○ | × | × | ○ | ○ | × | × | ○ |
| Position 2      | × | ○ | ○ | × | × | ○ | ○ | × |
| Position 3      | ○ | ○ | × | × | × | × | ○ | ○ |
| Position 4      | × | × | ○ | ○ | ○ | ○ | × | × |
| Position 5      | × | × | ○ | ○ | × | × | ○ | ○ |
| Position 6      | ○ | ○ | × | × | ○ | ○ | × | × |
| Position 7      | × | ○ | × | ○ | ○ | × | ○ | × |
| Position 8      | ○ | × | ○ | × | × | ○ | × | ○ |
| Position 9      | × | ○ | × | ○ | × | ○ | × | ○ |
| Position 10     | ○ | × | ○ | × | ○ | × | ○ | × |

○ Cut Key on pin connector      × Cut Key on socket connector

## Wire Hole Fillers (D\*MA Series Only)

Material: Acetal

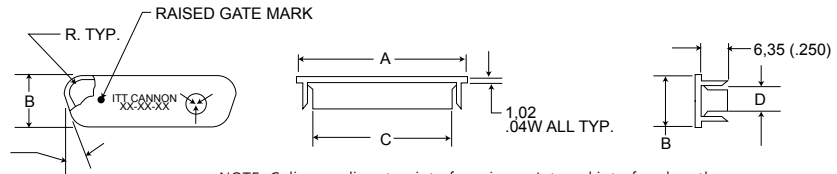
| Part Number  | Insert Type      |
|--------------|------------------|
| DMA51236-1   | #20 Socket       |
| DMA51235-1   | #20 Pin          |
| 225-1013-000 | #22 Pin & Socket |



## Dust Cap



Dust caps provide protection from moisture and dust for unused I/O ports.



NOTE: C dim. applies at point of maximum Integral interface length.  
Drawing shown for Black Anti-static caps. Dimensions shown are reference only.

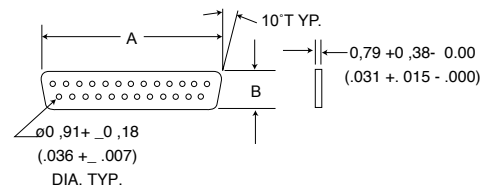
## Product Features

- Dust Caps meet the static decay test requirements of MIL-B- 81705C, Type II.
- Dust Caps have an integral flange for easy application and removal

| Materials and Finishes |              |
|------------------------|--------------|
| Material:              | Polyethylene |

| Black Antistatic<br>(Surface Resistivity<br><1x10 <sup>5</sup> ohm/sq.) | I.D.   | A             | B            | C             | D            |
|-------------------------------------------------------------------------|--------|---------------|--------------|---------------|--------------|
| DE-59-20BA                                                              | Socket | 20,32 (.800)  | 11,43 (.450) | 16,36 (.644)  | 7,59 (2.99)  |
| DA-59-20BA                                                              | Socket | 28,45 (1.120) | 11,68 (.460) | 24,59 (.968)  | 7,62 (.300)  |
| DB-59-20BA                                                              | Socket | 42,42 (1.670) | 11,68 (.460) | 38,25 (1.506) | 7,49 (.295)  |
| DC-59-20BA                                                              | Socket | 58,93 (2.320) | 11,68 (.460) | 54,81 (2.158) | 7,37 (.290)  |
| DD-59-20BA                                                              | Socket | 56,90 (2.240) | 14,48 (.570) | 53,11 (2.091) | 10,41 (.410) |
| DE-60-20BA                                                              | Pin    | 21,84 (.860)  | 12,95 (5.10) | 17,78 (.700)  | 8,92 (.351)  |
| DA-60-20BA                                                              | Pin    | 30,48 (1.200) | 12,95 (.510) | 26,52 (1.044) | 9,02 (.355)  |
| DB-60-20BA                                                              | Pin    | 44,20 (1.740) | 13,46 (.530) | 39,60 (1.559) | 9,09 (.358)  |
| DC-60-20BA                                                              | Pin    | 60,71 (2.390) | 13,46 (.530) | 56,90 (2.240) | 9,37 (.369)  |
| DD-60-20BA                                                              | Pin    | 58,17 (2.290) | 16,00 (.630) | 54,28 (2.137) | 12,04 (.474) |

## Interfacial Seal



Interfacial seals provide moisture resistance at the mating interface.

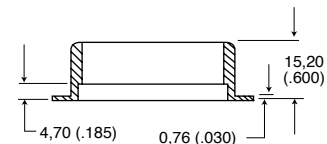
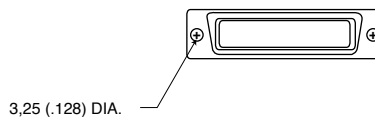
## Product Features

- Other Interfacial Seals in the Combo D<sup>®</sup> layouts are available upon request.

| Materials and Finishes |                |
|------------------------|----------------|
| Material:              | Silastic Sheet |

| Shell Size | Layout | Part Number  | A             | B               |
|------------|--------|--------------|---------------|-----------------|
| DE         | 9      | DE53750      | 16,66 (.656)  | 8,41 (.331)     |
| DA         | 15     | DA53750-1    | 24,99 (.984)  | 8,41 (.331)     |
| DB         | 25     | DB53750-2    | 38,88 1.531)  | 8,41 (.331)     |
| DC         | 37     | DC53750-3    | 55,14 (2.171) | 8,41 (.331)     |
| DD         | 50     | DD53750-4    | 52,78 (2.078) | 11,18 mm (.440) |
| DC         | 21WA4  | 075-0354-003 | 55,14 (2.171) | 8,41 (.331)     |
| DE         | 15     | 273-0333-000 | 16,66 (.656)  | 8,41 (.331)     |
| DB         | 44     | 273-0335-000 | 38,88 1.531)  | 8,41 (.331)     |
| DC         | 62     | 273-0336-000 | 55,14 (2.171) | 8,41 (.331)     |
| DD         | 78     | 273-0337-000 | 52,78 (2.078) | 11,10 (.437)    |

## Potting Shell



Potting shells are molded with a thin flange 0,76 (.030) to permit the use of D Subminiature locking devices.

| Materials and Finishes |                 |
|------------------------|-----------------|
| Material:              | Nylon           |
| Color:                 | Natural (white) |

| Shell Size | Layout | Part Number |
|------------|--------|-------------|
| DE         | 9      | DE50904-1   |
| DA         | 15     | DA50905-1   |
| DB         | 25     | DB50906-1   |
| DC         | 37     | DC50907-1   |
| DD         | 50     | DD50908-1   |



Dimensions shown in mm  
Specifications and dimensions subject to change

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| Standard RoHS<br>Part # | Part #      | Page<br># | Standard RoHS<br>Part # | Part #      | Page<br># | Standard RoHS<br>Part # | Part #     | Page<br># |
|-------------------------|-------------|-----------|-------------------------|-------------|-----------|-------------------------|------------|-----------|
| 075-0354-003            | Same        | 26        | DA22214                 | Same        | 22        | DD115339-24             | Same       | 15        |
| 250-8501-004            | Same        | 14        | DA24658                 | DA24658-28  | 11        | DD121073-153            | Same       | 13        |
| 250-8501-009            | Same        | 14        | DA50905-1               | Same        | 26        | DD121073-53             | Same       | 13        |
| 250-8501-010            | Same        | 14        | DA51210                 | Same        | 16        | DD19678-4               | Same       | 12        |
| 250-8501-013            | Same        | 14        | DA51211                 | Same        | 16        | DD19977-4               | Same       | 12        |
| 273-0333-000            | Same        | 26        | DA51220-1               | Same        | 19        | DD20964                 | DD20964-32 | 11        |
| 273-0334-000            | Same        | 26        | DA53750-1               | Same        | 26        | DD21961                 | Same       | 22        |
| 273-0335-000            | Same        | 26        | DA-59-20                | Same        | 26        | DD21962                 | Same       | 23        |
| 273-0336-000            | Same        | 26        | DA-60-20                | Same        | 26        | DD24661                 | Same       | 11        |
| 273-0337-000            | Same        | 26        | DABMAM155               | Same        | 24        | DD50908-1               | Same       | 26        |
| 980-2000-345            | Same        | 8         | DABS-15                 | Same        | 15        | DD51216                 | Same       | 16        |
| 980-2000-346            | Same        | 8         | DB115339-22             | Same        | 15        | DD51217                 | Same       | 16        |
| 980-2000-347            | Same        | 8         | DB115398-2              | Same        | 25        | DD51223-1               | Same       | 19        |
| 980-2000-348            | Same        | 8         | DB121073-151            | Same        | 13        | DD53750-4               | Same       | 26        |
| 980-2000-350            | Same        | 14        | DB121073-51             | Same        | 13        | DD-59-20                | Same       | 26        |
| 980-2000-351            | Same        | 14        | DB19678-2               | DB19678-213 | 12        | DD-60-20                | Same       | 26        |
| 980-2000-352            | Same        | 14        | DB19977-2               | DB19977-69  | 12        | DDBMAM50PS              | Same       | 24        |
| 980-2000-353            | Same        | 14        | DB20962                 | DB20962-30  | 11        | DE111919                | Same       | 23        |
| 980-2000-354            | Same        | 14        | DB22254                 | Same        | 22        | DE111920                | Same       | 22        |
| D110277                 | Same        | 20        | DB22255                 | Same        | 23        | DE115339-20             | Same       | 15        |
| D110278                 | Same        | 20        | DB24659                 | DB24659-27  | 11        | DE115398                | Same       | 25        |
| D110279                 | Same        | 20        | DB50906-1               | Same        | 26        | DE121073-154            | Same       | 13        |
| D110280                 | Same        | 20        | DB51212                 | Same        | 16        | DE121073-54             | Same       | 13        |
| D110550                 | Same        | 21        | DB51213                 | Same        | 16        | DE19977-5               | DE19977-72 | 12        |
| D110551                 | Same        | 21        | DB51221-1               | Same        | 19        | DE24657                 | DE24657-29 | 11        |
| D121073-19              | Same        | 14        | DB53750-2               | Same        | 26        | DE44994                 | DE44994-14 | 11        |
| D121073-39              | Same        | 18        | DB-59-20                | Same        | 26        | DE50904-1               | Same       | 26        |
| D121073-42              | Same        | 18        | DB-60-20                | Same        | 26        | DE51218                 | Same       | 16        |
| D20418-2                | D20418-134  | 18        | DBBMAM25PS              | Same        | 24        | DE51219                 | Same       | 16        |
| D20418-39               | D20418-136  | 18        | DBBS-25                 | Same        | 15        | DE51224-1               | Same       | 19        |
| D20418-50               | D20418-135  | 18        | DC115339-23             | Same        | 15        | DE53750                 | Same       | 26        |
| D20418-74               | D20418-137  | 18        | DC115398-3              | Same        | 25        | DE-59-20                | Same       | 26        |
| D20419                  | D20419-211  | 17        | DC121073-152            | Same        | 13        | DE-60-20                | Same       | 26        |
| D20419-104              | D20419-214  | 17        | DC121073-52             | Same        | 11        | DEBMAM9PS               | Same       | 24        |
| D20419-18               | D20419-212  | 17        | DC19678-3               | DC19678-214 | 12        | DEBS-9                  | Same       | 15        |
| D20419-21               | D20419-213  | 17        | DC19977-3               | DC19977-70  | 12        | DMA 51235-1             | Same       | 25        |
| D20420                  | D20420-157  | 17        | DC20963                 | DC20963-27  | 11        | DMA 51236-1             | Same       | 25        |
| D20420-13               | D20420-158  | 17        | DC22070                 | Same        | 23        |                         |            |           |
| D20420-15               | D20420-159  | 17        | DC22071                 | Same        | 22        |                         |            |           |
| D20420-86               | D20420-160  | 17        | DC24660                 | Same        | 11        |                         |            |           |
| D53018                  | Same        | 19        | DC50907-1               | Same        | 26        |                         |            |           |
| DA115339-21             | Same        | 15        | DC51214                 | Same        | 16        |                         |            |           |
| DA115398-1              | Same        | 25        | DC51215                 | Same        | 16        |                         |            |           |
| DA121073-150            | Same        | 13        | DC51222-1               | Same        | 19        |                         |            |           |
| DA121073-50             | Same        | 13        | DC53750-3               | Same        | 26        |                         |            |           |
| DA19678-1               | DA19678-212 | 13        | DC-59-20                | Same        | 26        |                         |            |           |
| DA19977-1               | DA19977-68  | 13        | DC-60-20                | Same        | 26        |                         |            |           |
| DA20961                 | DA20961-26  | 11        | DCBMA37PS               | Same        | 26        |                         |            |           |
| DA22213                 | Same        | 23        | DD115398-4              | Same        | 25        |                         |            |           |

# D-Subminiature Connectors

Invented by Cannon engineers in 1952 for aircraft radio systems, the D-Subminiature was designed as a smaller, lightweight rectangular alternative to larger, heavier connectors of the time. Today, Cannon continues its legacy of innovation through highly engineered D-Sub connector styles, sizes, configurations and accessories. From rocket launchers and telecommunications, to avionics and high-speed rail, its performance, reliability and versatility have made this Cannon invention one of the most widely used connectors in the world.



## Non-Magnetic Series

D\*M, D\*MM, D\*MA with NM, NMB option connectors are used when non magnetic characteristics are required.



## D\*H

Hermetic Military D connectors are designed to meet environmental conditions of extreme pressure differential.



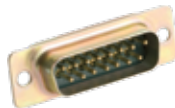
## MIL-DTL-24308<sup>2</sup>

These high reliability D-Sub connectors are the finest quality and are qualified to MIL-DTL-24308.



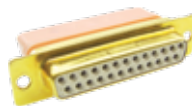
## D\*MAM

D\*MAM crimp connectors are designed according to MIL-DTL-24308.



## D\*MM

D\*MM straight PCB connectors are designed according to MIL-DTL-24308.



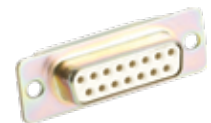
## GD\*

GD\* connectors provide high-density and moisture protection.



## 2D

2D connectors feature double the contact density in the same insert area.



## D\*MA

D\*MA crimp connectors are designed according to MIL-DTL-24308



## D\*M

D\*M straight PCB connectors are equivalent to MIL-DTL-24308 qualified versions (except for finishes).



## Stainless Steel

A broad range of D-Sub connectors are available with stainless steel shells for corrosion resistance.



## D\*NG

D\*NG pressfit connectors provide a low-cost alternative to traditional through hole solder contacts (straight only).



## D\*SF

Speedy D connectors terminate ribbon cables without stripping and without splicing.



## D\*U

D\*U is a low-cost, crimp type D-Subminiature series.



## D\*

D\* connectors are available for high performance uses according to DIN 41652.



## ZD\*

ZD\* connectors are available for applications where price is the primary driver.



## ZD\*A

ZD\*A high density connectors are available for applications where price is the primary driver.



## D\*A

D\*A crimp connectors are available for applications where price is the primary driver.



## Combo-D

Combo-D connectors offer an industry standard shield I/O interconnect, with the flexibility of a customized special.

ITT is a diversified leading manufacturer of highly engineered critical components and customized technology solutions for the energy, transportation and industrial markets. Building on its heritage of innovation, ITT partners with its customers to deliver enduring solutions to the key industries that underpin our modern way of life. Founded in 1920, ITT is headquartered in White Plains, N.Y., with employees in more than 35 countries and sales in a total of approximately 125 countries. For more information visit [itt.com](http://itt.com)

ITT's Cannon brand offers a product portfolio that remains one of the most extensive in the industry. Continuous investment in technology, research and investment have enabled us to provide new, innovative solutions to markets including:

- **Commercial Aerospace**
- **Military & Defense**
- **Industrial**
- **Medical**

When you specify an ITT Cannon interconnect solution, you can rely on products designed, developed and manufactured to the highest quality and reliability standards. This tradition of excellence is based on ITT's corporate culture of operating its businesses under the principles of Six Sigma. At ITT, Six Sigma is not just a quality philosophy but a complete corporate culture that drives the entire business. Our Value Based Management and Value-Based Product Development systems are two cornerstones that allow for the development of both leadership and product engineering principles.

## Six Sigma Manufacturing

ITT Cannon operates manufacturing facilities in the United States, Germany, Italy, Mexico, China and Japan, all of which have particular product area strengths that allow ITT Cannon to offer a truly global presence to our customers. Our facilities are world class and accommodate full vertical integration, utilizing the latest manufacturing technologies including automated and robotic machining centers, Super Market manufacturing cells, Kanban pull systems, and automated electrical, mechanical, and optical test and inspection equipment. The combination of our manufacturing strength and our advanced manufacturing facilities allows ITT to offer products at market driven prices. Our capabilities, especially in robotics, computerized precision tooling, Kaizen Project Management, Six Sigma tools and testing give ITT the most optimized global manufacturing footprint in the interconnect industry.

## The Custom Difference

As an industry leader in harsh environment interconnect applications, ITT's world class engineering teams work directly with our customers to design and develop cost-effective solutions for their applications. In many cases we may modify one of our standard designs to ensure a highly reliable solution where timing is critical. When custom connectors are required, we collaborate with clients and partners with a goal to design the most reliable, cost-effective solution possible. Our engineering and product management teams provide a thorough analysis of proposed solutions, ensuring our customers receive the right solution for their program and application needs.

## RoHS Compliance Information

ITT has implemented a strict parts control plan for all ITT electronics plants worldwide that allows the Cannon product portfolio to meet the requirements of the European Union Directive 2002/95/EC better known as the Reduction of Hazardous Substances initiative. As appropriate, specific Cannon products may be ordered with an R prefix number which insures our customers will receive RoHS compliant parts for their commercial electronics applications and equipment. Since most RoHS hazardous substances center around specific metal plating and lead solder coatings, ITT's products for RoHS compliance are available in the following plating finishes: electroless nickel, stainless steel, anodize over aluminum and gold plating. It should be noted that gold plating would be recommended as the replacement for tin-lead solder when ordering board mount connectors.



## PRODUCT SAFETY INFORMATION

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THIS NOTE MUST BE READ IN CONJUNCTION WITH THE PRODUCT DATA SHEET/CATALOG. FAILURE TO OBSERVE THE ADVICE IN THIS INFORMATION SHEET AND THE OPERATING CONDITIONS SPECIFIED IN THE PRODUCT DATA SHEET/ CATALOG COULD RESULT IN HAZARDOUS SITUATIONS.

### 1. MATERIAL CONTENT AND PHYSICAL FORM

Electrical connectors do not usually contain hazardous materials. They contain conducting and non-conducting materials and can be divided into two groups.

- a) Printed circuit types and low cost audio types which employ all plastic insulators and casings.
- b) Rugged, Fire Barrier and High Reliability types with metal casings and either natural rubber, synthetic rubber, plastic or glass insulating materials. Contact materials vary with type of connector and also application and are usually manufactured from either: Copper, copper alloys, nickel, alumel, chromel or steel. In special applications, other alloys may be specified.

### 2. FIRE CHARACTERISTICS AND ELECTRIC SHOCK HAZARD

There is no fire hazard when the connector is correctly wired and used within the specified parameters. Incorrect wiring or assembly of the connector or careless use of metal tools or conductive fluids, or transit damage to any of the component parts may cause electric shock or burns. Live circuits must not be broken by separating mated connectors as this may cause arcing, ionization and burning. Heat dissipation is greater at maximum resistance in a circuit. Hot spots may occur when resistance is raised locally by damage, e.g. cracked or deformed contacts, broken strands of wire. Local overheating may also result from the use of the incorrect application tools or from poor quality soldering or slack screw terminals. Overheating may occur if the ratings in the product Data Sheet/Catalog are exceeded and can cause breakdown of insulation and hence electric shock. If heating is allowed to continue it intensifies by further increasing the local resistance through loss of temper of spring contacts, formation of oxide film on contacts and wires and leakage currents through carbonization of insulation and tracking paths. Fire can then result in the presence of combustible materials and this may release noxious fumes. Overheating may not be visually apparent. Burns may result from touching overheated components.

### 3. HANDLING

Care must be taken to avoid damage to any component parts of electrical connectors during installation and use. Although there are normally no sharp edges, care must be taken when handling certain components to avoid injury to fingers. Electrical connectors may be damaged in transit to the customers, and damage may result in creation of hazards. Products should therefore be examined prior to installation/use and rejected if found to be damaged.

### 4. DISPOSAL

Incineration of certain materials may release noxious or even toxic fumes.

### 5. APPLICATION

Connectors with exposed contacts should not be selected for use on the current supply side of an electrical circuit, because an electric shock could result from touching exposed contacts on an unmated connector. Voltages in excess of 30 V ac or 42.5 V dc are potentially hazardous and care should be taken to ensure that such voltages cannot be transmitted in any way to exposed metal parts of the connector body. The connector and wiring should be checked, before making live, to have no damage to metal parts or insulators, no solder blobs, loose strands, conducting lubricants, swarf, or any other undesired conducting particles. Circuit resistance and continuity check should be made to make certain that there are no high resistance joints or spurious conducting paths. Always use the correct application tools as specified in the Data Sheet/Catalog. Do not permit untrained personnel to wire, assemble or tamper with connectors. For operation voltage please see appropriate national regulations.

### IMPORTANT GENERAL INFORMATION

(i) Air and creepage paths/Operating voltage. The admissible operating voltages depend on the individual applications and the valid national and other applicable safety regulations. For this reason the air and creepage path data are only reference values. Observe reduction of air and creepage paths due to PC board and/or harnessing.

(ii) Temperature

All information given are temperature limits. The operation temperature depends on the individual application.

(iii) Other important information

Cannon continuously endeavors to improve their products. Therefore, Cannon products may deviate from the description, technical data and shape as shown in this catalog and data sheets.

All data subject to change without notice.

cannon

Amazing things  
happen when great  
things connect



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or visit us at [www.ittcannon.com](http://www.ittcannon.com)

## Connect with the experts

ITT's Cannon brand is a world leader in the design and manufacture of highly engineered connector solutions for multiple end markets.



### Why ITT

ITT is a focused multi-industrial company that designs and manufactures highly engineered critical components and customized technology solutions. ITT's Cannon brand is a leading global manufacturer of connector products serving international customers in aerospace, defense, medical, industrial and transportation end markets. ITT's Connector business, which also includes the Veam and BIW Connector Systems brand, manufactures and supplies a variety of connectors and interconnects that make it possible to transfer data, signal and power in an increasingly connected world.

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