



A connector that has the connections... Goes from 9 to 187 contacts!

# High Density Interconnects

The HD38999 family of connectors has 30% more contact density than the highest density Mil Spec 38999 connectors of its size. This series of connectors was designed to utilize mil-specified 38999 components with the exception of the contacts and inserts arrangement. Utilizing existing mil-qualified 39029 size 23 contacts and 38999 insert materials, these connectors are essentially a drop-in replacement for the standard 38999 connector.

This connector design benefits users in a couple of different ways. For those users who need to increase the amount of contacts in their application, the HD38999 series allows them to do so without increasing the size of their connector. For users who are looking to decrease the overall size of their system, they can do so by using smaller shell sizes without decreasing the number of contacts.

Amphenol has qualified this series of connectors to the requirements of MIL-DTL-38999. Amphenol also manufactures this high density series in Filter, Hermetic and customized versions to fit our customer's needs. Please contact us if additional information is required.

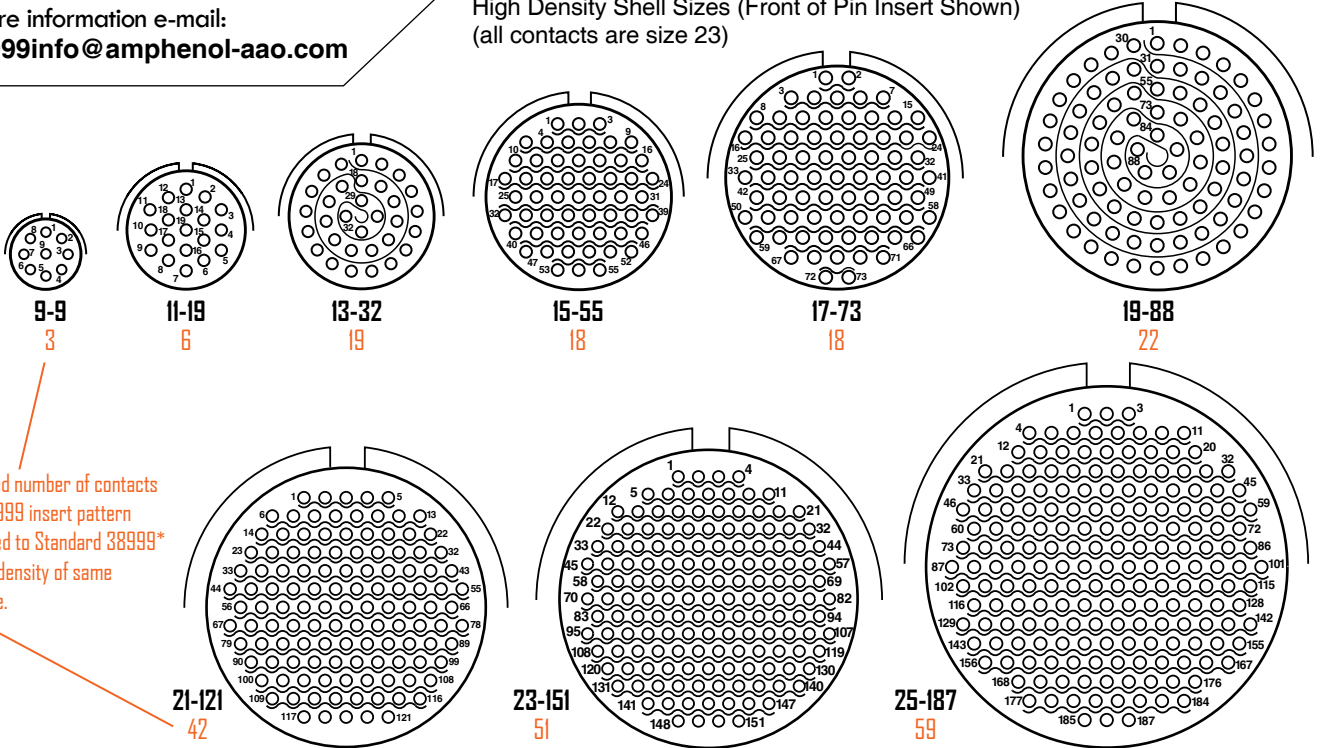


HD38999 Connectors available styles:

- Aluminum
- Composite
- Stainless Steel
- Sealed (IP67)
- Filtered

For more information e-mail: [hd38999info@amphenol-aao.com](mailto:hd38999info@amphenol-aao.com)

High Density Shell Sizes (Front of Pin Insert Shown) (all contacts are size 23)



Increased number of contacts in HD38999 insert pattern compared to Standard 38999\* contact density of same shell size.

\* Standard inserts for 38999 series are shown in Amphenol's Combined Circular Catalog, 12-C ( )



The Interconnection Leader

Call 800-678-0141 or visit us at [www.amphenol-aerospace.com](http://www.amphenol-aerospace.com)



## Easy Steps to build a part number... HD38999

| 1.                         | 2.           | 3.            | 4.                              | 5.           | 6.                  | 7.          |
|----------------------------|--------------|---------------|---------------------------------|--------------|---------------------|-------------|
| Connector Type             | Shell Styles | Service Class | Shell Size – Insert Arrangement | Contact Type | Alternate Positions | PCB Options |
| TV or PTV (Potted version) | 06           | RW            | 23-151                          | P            | B                   | (P25)       |



### Step 1. Select a Connector Type

|                          | Designates |  |
|--------------------------|------------|--|
| P<br>(prefix for Potted) | TV         | Tri-Start Series Connector   |
|                          | TVP        | Back panel mounted receptacle  |
|                          | MTV        | CLUTCH-LOK connector with "MS" stamping (Note: remove dashes in how to order part number when ordering CLUTCH-LOK) |
|                          | CTV        | Composite MIL-DTL-38999 Series III connector   |
|                          | CTVP       | Panel mounted composite receptacle   |

### Step 6. Select an Alternate Position

A, B, C, D, E or blank for normal.

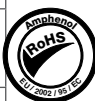
| Shell Size     | Key & keyway arrangement identification letter | AR° or AP° BSC | BR° or BP° BSC | CR° or CP° BSC | DR° or DP° BSC |
|----------------|--|----------------|----------------|----------------|----------------|
| 9              | N*   | 105            | 140            | 215            | 265            |
|                | A  | 102            | 132            | 248            | 320            |
|                | B  | 80             | 118            | 230            | 312            |
|                | C  | 35             | 140            | 205            | 275            |
|                | D  | 64             | 155            | 234            | 304            |
| 11, 13, and 15 | E  | 91             | 131            | 197            | 240            |
|                | N*   | 95             | 141            | 208            | 236            |
|                | A  | 113            | 156            | 182            | 292            |
|                | B  | 90             | 145            | 195            | 252            |
|                | C  | 53             | 156            | 220            | 255            |
| 17 and 19      | D  | 119            | 146            | 176            | 298            |
|                | E  | 51             | 141            | 184            | 242            |
|                | N*   | 80             | 142            | 196            | 293            |
|                | A  | 135            | 170            | 200            | 310            |
|                | B  | 49             | 169            | 200            | 244            |
| 21, 23, and 25 | C  | 66             | 140            | 200            | 257            |
|                | D  | 62             | 145            | 180            | 280            |
|                | E  | 79             | 153            | 197            | 272            |
|                | N*   | 80             | 142            | 196            | 293            |
|                | A  | 135            | 170            | 200            | 310            |
|                | B  | 49             | 169            | 200            | 244            |
|                | C  | 66             | 140            | 200            | 257            |
|                | D  | 62             | 145            | 180            | 280            |
|                | E  | 79             | 153            | 197            | 272            |

### Step 2. Select a Shell Style

|    | Designates   |
|----|--|
| 00 | Wall mount receptacle  |
| 01 | Line receptacle  |
| 02 | Box mount receptacle   |
| 06 | Straight plug  |
| 07 | Jam nut receptacle   |
| 26 | Proprietary CLUTCH-LOK high vibration straight plug (service Classes RK & RS only) |
| 97 | Reduced flange jam nut receptacle (not available in composite)                     |
| 96 | Straight plug with integral backshell (not available in composite)                 |

### Step 3. Select a Service Class

|    | Designates  |
|----|---|
| RF | Electroless nickel plated aluminum, optimum EMI shielding effectiveness -65dB @ 10GHz specification min., 48 hour salt spray, 175°C         |
| RW | Corrosion resistant olive drab cadmium plate aluminum, 500 hour extended salt spray, EMI -50dB @ 10GHz specification min., 175°C            |
| RL | Corrosion resistant stainless steel, electro-deposited nickel, 48 hours salt spray, 175°C, non-firewall                                     |
| DT | Durmalon plated, alternative to cadmium. Corrosion resistant, 500 hour extended salt spray EMI -50dB @ 10GHz specification min. without CR° |
| ZN | Zinc-Nickel alternative to cadmium. Corrosion resistant, 500 hour salt spray, conductive, -65°C to +175°C                                   |



### Step 4. Select a Shell Size – Insert Arrangement

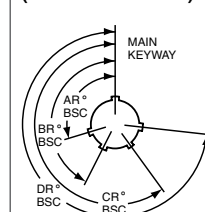
Shell Sizes are MIL-DTL-38999, Series III, with the newer High Density insert arrangements shown on page 1.

| Shell Size | Insert Arrangement Number |
|------------|---------------------------|
| 9-         | 9                         |
| 11-        | 19                        |
| 13-        | 32                        |
| 15-        | 55                        |
| 17-        | 73                        |
| 19-        | 88                        |
| 21-        | 121                       |
| 23-        | 151                       |
| 25-        | 187                       |

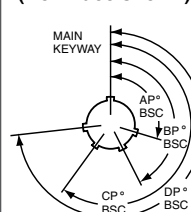
### Step 5. Select a Contact Type

|   | Designates      |
|---|-----------------|
| P | Pin contacts    |
| S | Socket contacts |

#### RECEPTACLE (front face shown)



#### PLUG (front face shown)



A plug with a given rotation letter will mate with a receptacle with the same rotation letter. The angles for a given connector are the same whether it contains pins or sockets. Inserts are not rotated in conjunction with the master key/keyway.

### Step 7. Select a PCB Contact Option

| Pin Contacts | Pin Contacts with Alignment Disc* | Socket Contacts | Socket Contacts with Alignment Disc* | PCB tail stickout +/- .040 inch |
|--------------|-----------------------------------|-----------------|--------------------------------------|---------------------------------|
| P1           | P1AD                              | S1              | S1AD                                 | .100" nominal                   |
| P15          | P15AD                             | S15             | S15AD                                | .150" nominal                   |
| P2           | P2AD                              | S2              | S2AD                                 | .200" nominal                   |
| P25          | P25AD                             | S25             | S25AD                                | .250" nominal                   |
| P3           | P3AD                              | S3              | S3AD                                 | .300" nominal                   |
| P35          | P35AD                             | S35             | S35AD                                | .350" nominal                   |

\* See page 8 for more information on alignment discs for HD38999 connectors.

Note: Standard tail diameter is 0.019 ±.001



## Contacts & Tools

### Contact Part Numbers:

Size 23 Sockets 10-597330-735 (M39029/17-172)  
 Size 23 Pins 10-597331-735 (M39029/18-177)  
 Sealing Plugs 10-405996-222 (MS27488-22-2)

**Crimp Barrel Dia.:**  
 (Inches) .034-.036

**Crimp Barrel Depth:**  
 (Inches) .151-.155

### Tools:

Crimp Tool: DanielsM22520/2-01  
 Positioner: Daniels M22520/2-12 Pins  
 Insertion Tool: Daniels DAK225-22  
 Removal Tool: Daniels DRK225-22

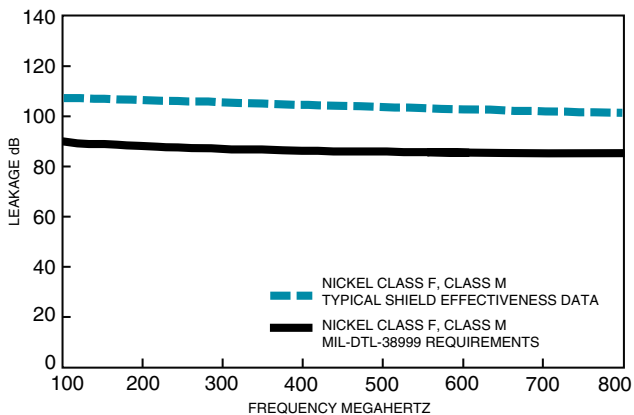
Note: Wire insulation diameter greater than 0.045 is too large for the extraction tool to work properly. Connector damage is possible.

## Technical Data

HD38999 series was designed to meet and/or exceed the specifications of MIL-DTL-38999. The connector series has been tested to all the requirements of 38999 with the use of AS39029 size 23 contacts. Test reports are available upon request. The following is a summary of some of the performance requirements.

### EMI Shielding Effectiveness:

Solid metal to metal coupling, EMI grounding fingers and conductive finishes have proven to be the ultimate in EMI/EMP shielding effectiveness. The following chart illustrated shielding effectiveness data which is typical in HD38999 connectors.



### Electrical:

22 AWG: 5.0 AMPS  
 24 AWG: 3.0 AMPS  
 26 AWG: 2.0 AMPS  
 28 AWG: 1.5 AMPS

Insulation Resistance: 5000 megohms min. @500 VDC 25C

Dielectric Withstanding Voltage: 1000 VRMS@sea level

### Mechanical:

**Metallic Shells:** Material: Aluminum alloy, Stainless Steel  
 Protection: Electroless Nickel, O.D. Cadmium, Durmalon (Nickel PTFE), Zinc Nickel

**Composite Shells:** Material: Thermoplastic  
 Protection: Electroless Nickel, O.D. Cadmium, Durmalon (Nickel PTFE), Zinc Nickel

**Contacts:** Material: Copper Alloy  
 Protection: Gold over Nickel

**Insert Retention to Shell:** 100 psi in axial load

**Durability:** 500 full mating and unmating cycles

**Vibration:** 60G sine per MIL-DTL-38999L Para 4.5.23.2.1  
 5G2 Random per EIA-364-28E, Test condition A  
 1G2 Random per EIA-364-28E, Test condition I

**Shock:** Per EIA-364-27B, 300g

### Environmental:

**Operating Temperature:** -65°C to +175°C

**Salt Spray:**  
**Metallized:** Electroless Nickel: 48 hours  
 Anodic Coating, O. D. Cadmium, Durmalon, Zinc Nickel: 500 hours

**Salt Spray Composite:** Electroless Nickel: 48 hours  
 O. D. Cadmium, Durmalon, Zinc Nickel: 500 hours

# H38999

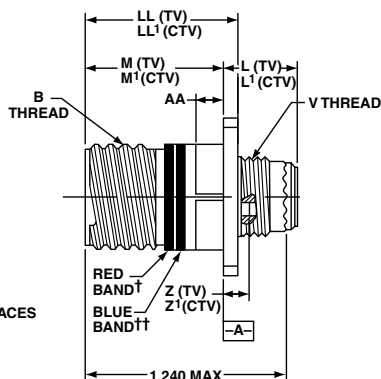
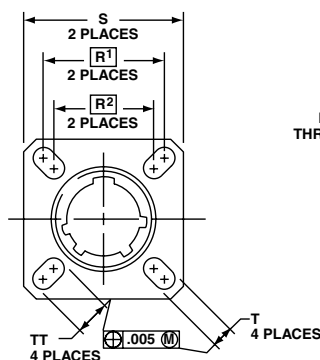
High Density

## Shell Styles

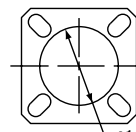
### Wall Mounting Receptacle

TV00( ) - Crimp, Metal

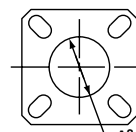
CTV00( ) - Crimp, Composite



### PANEL HOLE DIMENSIONS



### BACK PANEL MOUNTING



### FRONT PANEL MOUNTING

See how to build a part number on pages 2 & 3

† Red band indicates fully mated

†† Blue band indicates rear release contact retention system.

Inches

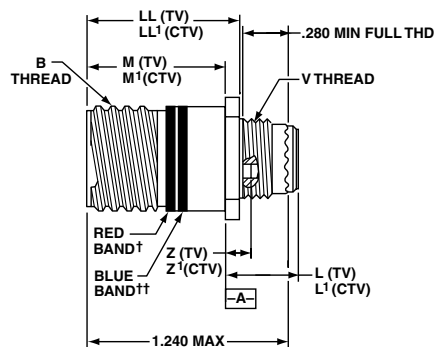
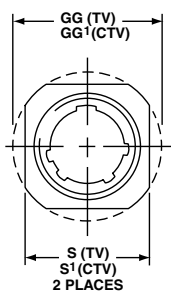
| Shell Size | MS Shell Size Code | B Thread Class 2A 0.1P=0.3L-TS (Plated) | L Max. (TV) | L <sup>1</sup> Max. (CTV) | M +.000 - .005 (TV) | M' +.000 - .005 (CTV) | R <sup>1</sup> | R <sup>2</sup> | S Max. | T ±.008 | Z Max. (TV) | Z' Max. (CTV) | A <sup>1</sup> Back Panel Mount | A <sup>2</sup> Front Panel Mount | AA Max. Panel Thickness | LL +.006 - .000 (TV) | LL <sup>1</sup> ±.005 (CTV) | TT ±.008 |
|------------|--------------------|---|-------------|---------------------------|---------------------|-----------------------|----------------|----------------|--------|---------|-------------|---------------|---------------------------------|----------------------------------|-------------------------|----------------------|-----------------------------|----------|
| 9          | A                  | .6250                                   | .469        | .514                      | .820                | .773                  | .719           | .594           | .948   | .128    | .153        | .198          | .650                            | .510                             | .234                    | .905                 | .908                        | .216     |
| 11         | B                  | .7500                                   | .469        | .514                      | .820                | .773                  | .812           | .719           | 1.043  | .128    | .153        | .198          | .800                            | .620                             | .234                    | .905                 | .908                        | .194     |
| 13         | C                  | .8750                                   | .469        | .514                      | .820                | .773                  | .906           | .812           | 1.137  | .128    | .153        | .198          | .910                            | .740                             | .234                    | .905                 | .908                        | .194     |
| 15         | D                  | 1.0000                                  | .469        | .514                      | .820                | .773                  | .969           | .906           | 1.232  | .128    | .153        | .198          | 1.040                           | .900                             | .234                    | .905                 | .908                        | .173     |
| 17         | E                  | 1.1875                                  | .469        | .514                      | .820                | .773                  | 1.062          | .969           | 1.323  | .128    | .153        | .198          | 1.210                           | 1.010                            | .234                    | .905                 | .908                        | .194     |
| 19         | F                  | 1.2500                                  | .469        | .514                      | .820                | .773                  | 1.156          | 1.062          | 1.449  | .128    | .153        | .198          | 1.280                           | 1.130                            | .234                    | .905                 | .908                        | .194     |
| 21         | G                  | 1.3750                                  | .500        | .545                      | .790                | .741                  | 1.250          | 1.156          | 1.575  | .128    | .183        | .228          | 1.410                           | 1.250                            | .204                    | .905                 | .904                        | .194     |
| 23         | H                  | 1.5000                                  | .500        | .545                      | .790                | .741                  | 1.375          | 1.250          | 1.701  | .154    | .183        | .228          | 1.530                           | 1.360                            | .204                    | .905                 | .904                        | .242     |
| 25         | J                  | 1.6250                                  | .500        | .545                      | .790                | .741                  | 1.500          | 1.375          | 1.823  | .154    | .183        | .228          | 1.660                           | 1.470                            | .204                    | .905                 | .904                        | .242     |

All dimensions for reference only

## Line Receptacle

TV01( ) - Crimp, Metal

CTV01( ) - Crimp, Composite



See how to build a part number on pages 2 & 3

† Red band indicates fully mated

†† Blue band indicates rear release contact retention system.

Inches

| Shell Size | MS Shell Size Code | B Thread 0.1P-0.3L-TS-2A (Plated) | M +.000 - .005 (TV) | M' +.000 - .005 (CTV) | L Max. (TV) | L <sup>1</sup> Max. (CTV) | S ±.010 (TV) | S' ±.010 (CTV) | Z Max (TV) | Z' Max (CTV) | GG ±.010 (TV) | GG' ±.010 (CTV) | LL +.006 - .000 (TV) | LL <sup>1</sup> ±.005 (CTV) |
|------------|--------------------|-----------------------------------|---------------------|-----------------------|-------------|---------------------------|--------------|----------------|------------|--------------|---------------|-----------------|----------------------|-----------------------------|
| 9          | A                  | .6250                             | .820                | .773                  | .469        | .514                      | .675         | .635           | .153       | .198         | .812          | .699            | .905                 | .908                        |
| 11         | B                  | .7500                             | .820                | .773                  | .469        | .514                      | .800         | .765           | .153       | .198         | .905          | .875            | .905                 | .908                        |
| 13         | C                  | .8750                             | .820                | .773                  | .469        | .514                      | .925         | .885           | .153       | .198         | 1.093         | 1.007           | .905                 | .908                        |
| 15         | D                  | 1.0000                            | .820                | .773                  | .469        | .514                      | 1.050        | 1.100          | .153       | .198         | 1.219         | 1.140           | .905                 | .908                        |
| 17         | E                  | 1.1875                            | .820                | .773                  | .469        | .514                      | 1.238        | 1.197          | .153       | .198         | 1.375         | 1.229           | .905                 | .908                        |
| 19         | F                  | 1.2500                            | .820                | .773                  | .469        | .514                      | 1.300        | 1.260          | .153       | .198         | 1.469         | 1.380           | .905                 | .908                        |
| 21         | G                  | 1.3750                            | .790                | .741                  | .500        | .545                      | 1.425        | 1.385          | .183       | .228         | 1.625         | 1.493           | .905                 | .904                        |
| 23         | H                  | 1.5000                            | .790                | .741                  | .500        | .545                      | 1.550        | 1.510          | .183       | .228         | 1.750         | 1.626           | .905                 | .904                        |
| 25         | J                  | 1.6250                            | .790                | .741                  | .500        | .545                      | 1.675        | 1.635          | .183       | .228         | 1.875         | 1.777           | .905                 | .904                        |

All dimensions for reference only

# H38999

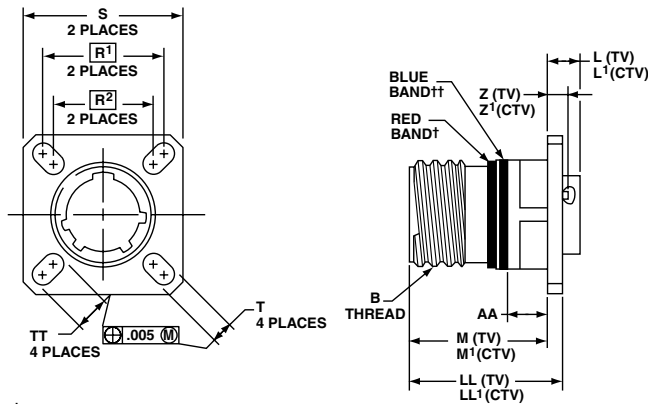
High Density

## Shell Styles

### Box Mount Receptacle

TV02( ) - Crimp, Metal

CTV02( ) - Crimp, Composite



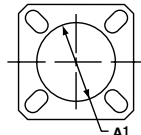
See how to build a part number on pages 2 & 3

† Red band indicates fully mated

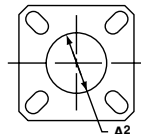
†† Blue band indicates rear release contact retention system.

Consult Amphenol Aerospace for availability for composite box mount receptacles.

### PANEL HOLE DIMENSIONS



### BACK PANEL MOUNTING



### FRONT PANEL MOUNTING

Inches

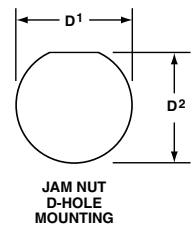
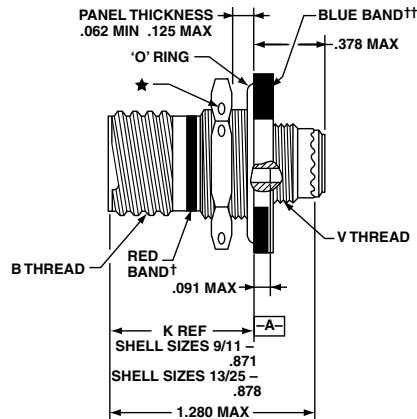
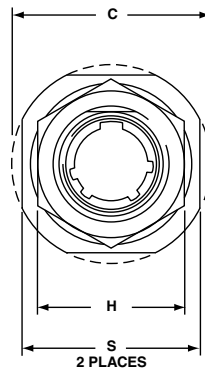
| Shell Size | MS Shell Size Code | B Thread Class 2A 0.1P-0.3L-TS (Plated) | L Max. (TV) | L' Max. (CTV) | M +.000 - .005 (TV) | M' +.000 - .005 (CTV) | R <sup>1</sup> | R <sup>2</sup> | S Max. | T ±.008 | Z. Max. (TV) | Z' Max. (CTV) | A <sup>1</sup> Back Panel Mount | A <sup>2</sup> Front Panel Mount | AA Max. Panel Thickness | LL +.006 - .000 (TV) | LL1 ±.005 (CTV) | TT ±.008 |
|------------|--------------------|---|-------------|---------------|---------------------|-----------------------|----------------|----------------|--------|---------|--------------|---------------|---------------------------------|----------------------------------|-------------------------|----------------------|-----------------|----------|
| 9          | A                  | .6250                                   | .205        | .250          | .820                | .773                  | .719           | .594           | .948   | .128    | .153         | .198          | .650                            | .510                             | .234                    | .905                 | .908            | .216     |
| 11         | B                  | .7500                                   | .205        | .250          | .820                | .773                  | .812           | .719           | 1.043  | .128    | .153         | .198          | .800                            | .620                             | .234                    | .905                 | .908            | .194     |
| 13         | C                  | .8750                                   | .205        | .250          | .820                | .773                  | .906           | .812           | 1.137  | .128    | .153         | .198          | .910                            | .740                             | .234                    | .905                 | .908            | .194     |
| 15         | D                  | 1.0000                                  | .205        | .250          | .820                | .773                  | .969           | .906           | 1.232  | .128    | .153         | .198          | 1.040                           | .900                             | .234                    | .905                 | .908            | .173     |
| 17         | E                  | 1.1875                                  | .205        | .250          | .820                | .773                  | 1.062          | .969           | 1.323  | .128    | .153         | .198          | 1.210                           | 1.010                            | .234                    | .905                 | .908            | .194     |
| 19         | F                  | 1.2500                                  | .205        | .250          | .820                | .773                  | 1.156          | 1.062          | 1.449  | .128    | .153         | .198          | 1.280                           | 1.130                            | .234                    | .905                 | .908            | .194     |
| 21         | G                  | 1.3750                                  | .235        | .280          | .790                | .741                  | 1.250          | 1.156          | 1.575  | .128    | .183         | .228          | 1.410                           | 1.250                            | .204                    | .905                 | .904            | .194     |
| 23         | H                  | 1.5000                                  | .235        | .280          | .790                | .741                  | 1.375          | 1.250          | 1.701  | .154    | .183         | .228          | 1.530                           | 1.360                            | .204                    | .905                 | .904            | .242     |
| 25         | J                  | 1.6250                                  | .235        | .280          | .790                | .741                  | 1.500          | 1.375          | 1.823  | .154    | .183         | .228          | 1.660                           | 1.470                            | .204                    | .905                 | .904            | .242     |

All dimensions for reference only

## Jam Nut Receptacle

TV07( ) - Crimp, Metal

CTV07( ) - Crimp, Composite



See how to build a part number on pages 2 & 3

† Red band indicates fully mated

†† Blue band indicates rear release contact retention system.

★ .059 dia. min., 3 lockwire holes. Formed lockwire hole design (6 holes) is optional

Inches

| Shell Size | MS Shell Size Code | B Thread Class 2A 0.1P-0.3L-TS (Plated) | C Max. | D <sup>1</sup> +.010 - .000 | D <sup>2</sup> +.000 - .010 | H Hex +.017 - .016 | S ±.010 | V Thread Metric |
|------------|--------------------|---|--------|-----------------------------|-----------------------------|--------------------|---------|-----------------|
| 9          | A                  | .6250                                   | 1.199  | .700                        | .670                        | .875               | 1.062   | M12X1-6g        |
| 11         | B                  | .7500                                   | 1.386  | .825                        | .770                        | 1.000              | 1.250   | M15X1-6g        |
| 13         | C                  | .8750                                   | 1.511  | 1.010                       | .955                        | 1.188              | 1.375   | M18X1-6g        |
| 15         | D                  | 1.0000                                  | 1.636  | 1.135                       | 1.085                       | 1.312              | 1.500   | M22X1-6g        |
| 17         | E                  | 1.1875                                  | 1.761  | 1.260                       | 1.210                       | 1.438              | 1.625   | M25X1-6g        |
| 19         | F                  | 1.2500                                  | 1.949  | 1.385                       | 1.335                       | 1.562              | 1.812   | M28X1-6g        |
| 21         | G                  | 1.3750                                  | 2.073  | 1.510                       | 1.460                       | 1.688              | 1.938   | M31X1-6g        |
| 23         | H                  | 1.5000                                  | 2.199  | 1.635                       | 1.585                       | 1.812              | 2.062   | M34X1-6g        |
| 25         | J                  | 1.6250                                  | 2.323  | 1.760                       | 1.710                       | 2.000              | 2.188   | M37X1-6g        |

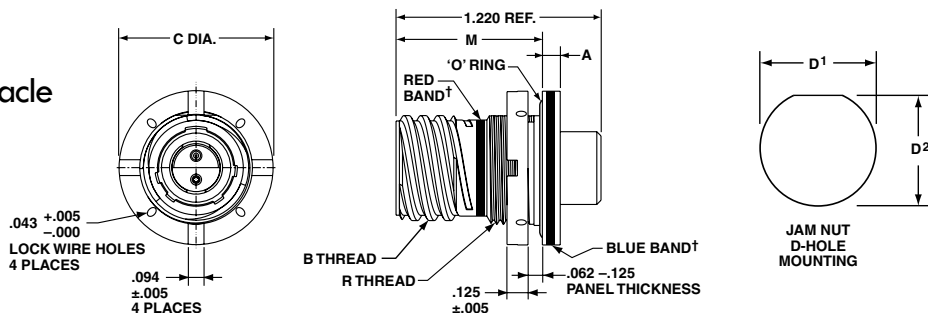
All dimensions for reference only



Shell Styles

Reduced Flange Jam Nut Receptacle

TV97( ) - Crimp, Metal



See how to build a part number on pages 2 & 3

† Red band indicates fully mated

†† Blue band indicates rear release contact retention system.

Inches

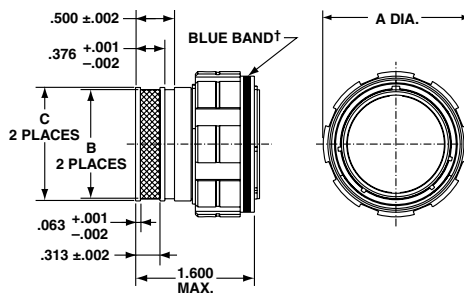
| Shell Size | MS Shell Size Code | B Thread Class<br>2A 0.1P-0.3L-TS<br>(Plated) | A<br>+.010<br>-.005 | C Dia.<br>Max. | D <sup>1</sup><br>+.010<br>-.000 | D <sup>2</sup><br>+.000<br>-.010 | M    | R Thread<br>(Plated)<br>9-7543) |
|------------|--------------------|---|---------------------|----------------|----------------------------------|----------------------------------|------|---------------------------------|
| 9          | A                  | .6250   | .104                | 1.199          | .915                             | .670                             | .871 | M12X1-6g                        |
| 11         | B                  | .7500   | .104                | 1.386          | 1.042                            | .770                             | .871 | M15X1-6g                        |
| 13         | C                  | .8750   | .104                | 1.511          | 1.240                            | .955                             | .878 | M18X1-6g                        |
| 15         | D                  | 1.0000  | .104                | 1.636          | 1.357                            | 1.085                            | .878 | M22X1-6g                        |
| 17         | E                  | 1.1875  | .104                | 1.761          | 1.630                            | 1.210                            | .878 | M25X1-6g                        |
| 19         | F                  | 1.2500  | .135                | 1.949          | 1.816                            | 1.335                            | .878 | M28X1-6g                        |
| 21         | G                  | 1.3750  | .135                | 2.073          | 1.942                            | 1.460                            | .878 | M31X1-6g                        |
| 23         | H                  | 1.5000  | .135                | 2.199          | 2.067                            | 1.585                            | .878 | M34X1-6g                        |
| 25         | J                  | 1.6250  | .135                | 2.323          | 2.190                            | 1.710                            | .878 | M37X1-6g                        |

All dimensions for reference only

Straight Plug with Integral Backshell

TV96( ) (TV Type) - Crimp, Metal

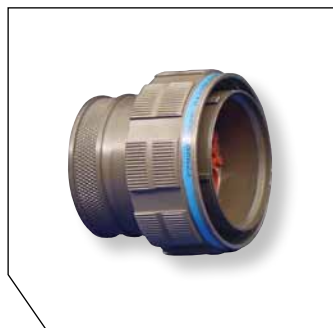
This MIL-DTL-38999 Series III style connector features an integral backshell design that eliminates the need for costly backshell accessories. The backshell feature is incorporated into the rear of the connector shell, allowing the user to attach the shield of their cable directly to the connector. This provides superior EMI shielding and ease for overmold applications. The straight plug with integral backshell is available in aluminum shells with OD Cad or Electroless Nickel plating.



See how to build a part number on pages 2 & 3

† Blue band indicates rear release contact retention system.

Inches



| Shell Size | MS Shell Size Code | A<br>Max. | B<br>+.005<br>-.000 | C<br>+.003<br>-.002 |
|------------|--------------------|-----------|---------------------|---------------------|
| 9          | A                  | .859      | .416                | .472                |
| 11         | B                  | .969      | .524                | .580                |
| 13         | C                  | 1.141     | .652                | .708                |
| 15         | D                  | 1.266     | .810                | .866                |
| 17         | E                  | 1.391     | .928                | .984                |
| 19         | F                  | 1.500     | 1.046               | 1.102               |
| 21         | G                  | 1.625     | 1.164               | 1.220               |
| 23         | H                  | 1.750     | 1.282               | 1.338               |
| 25         | J                  | 1.875     | 1.400               | 1.456               |

All dimensions for reference only



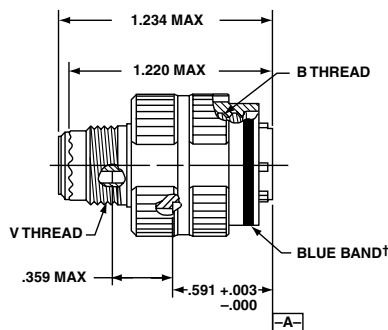
Shell Styles

Straight Plug

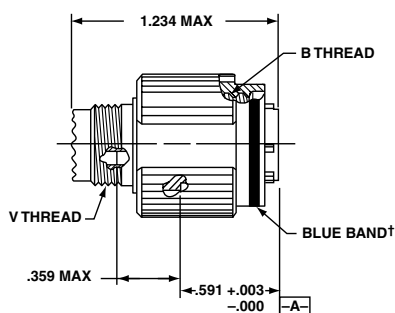
TV06( ) - Crimp, Metal

CTV06( ) - Crimp, Composite

METAL



COMPOSITE



CLUTCH-LOK™ Plug

TV26( ) - Crimp, Metal, Proprietary

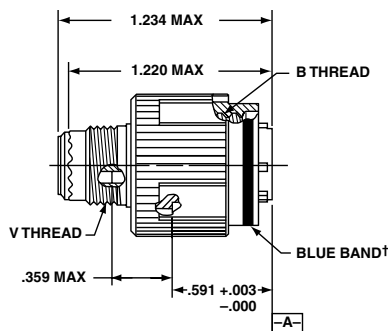
MTV26( ) - Crimp, Metal, with "MS" stamping

Designed for high vibration and harsh environments such as aircraft gas turbine engines, the CLUTCH-LOK is also an ideal choice for demanding applications such as aircraft, space and military ground vehicles. The unique clutch design of the Amphenol CLUTCH-LOK means that you don't have to compromise the need for quick, smooth mating of plugs and receptacles in order to get increased uncoupling torque.

The CLUTCH-LOK has proven to not only remain mated and pass all the Series III specification requirements, it also has proven to actually tighten itself under vibration. This is a powerful advantage over the traditionally high vibration application connectors. The CLUTCH-LOK is also a tremendous advantage in inaccessible, hard to reach areas where mating torque is difficult to apply and complete coupling is not verifiable by inspection.

CLUTCH-LOK features and benefits:

- High degree of differential torque
- Infinite free coupling and positive metal-to-metal bottoming with each mating
- No settling back to the next ratchet tooth
- Available with stainless steel shells and Class K firewall inserts
- All the advantages of MIL-DTL-38999 Series III including EMI/RFI shielding, electrolytic erosion resistance and contact protection with recessed pins
- Enhanced connector performance at affordable prices
- Completely interchangeable with all existing MIL-DTL-38999 Series III connectors
- Fully QPL'd



See how to build a part number on pages 2 & 3

† Blue band indicates rear release contact retention system

Inches

| Shell Size | MS Shell Size Code | B Thread 0.1P-0.3L-TS-2B (Plated) | Q Dia. Max. |
|------------|--------------------|-----------------------------------|-------------|
| 9          | A                  | .6250                             | .858        |
| 11         | B                  | .7500                             | .984        |
| 13         | C                  | .8750                             | 1.157       |
| 15         | D                  | 1.0000                            | 1.280       |
| 17         | E                  | 1.1875                            | 1.406       |
| 19         | F                  | 1.2500                            | 1.516       |
| 21         | G                  | 1.3750                            | 1.642       |
| 23         | H                  | 1.5000                            | 1.768       |
| 25         | J                  | 1.6250                            | 1.890       |

All dimensions for reference only

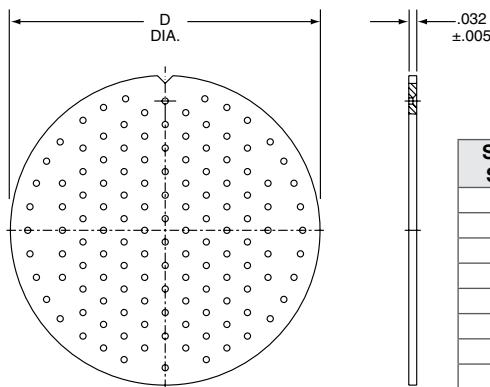




## New Custom Designed HD38999 Connectors - Provide More Interconnect Solutions:

### Alignment Disks

Alignment disks keep contacts aligned for easier insertion into circuit boards. These are typically ordered with the connector - see step 7 of How to Order on page 2.



| Shell Size | D Dia. ±.010 |
|------------|--------------|
| 9          | .234         |
| 11         | .350         |
| 13         | .500         |
| 15         | .725         |
| 17         | .750         |
| 19         | .850         |
| 21         | .953         |
| 23         | 1.147        |
| 25         | 1.250        |

### HD38999 Double Flange Receptacles for PC Board Applications

Amphenol also offers PC tail connectors in high density. A custom designed HD38999 with double flanges is available in box mount and jam nut panel mounting which allows the user to mount to PC boards. Shells are available in composite, aluminum and stainless steel.

Consult Amphenol Aerospace for ordering information.



### Filtered HD38999 Connectors - for EMI/EMP Protection

High density patterns are available in filter 38999 connectors - consult Amphenol Aerospace for ordering.



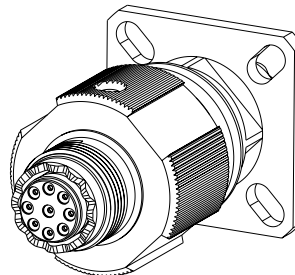
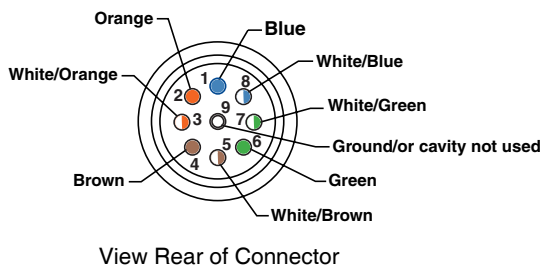
### HD38999 for Gigabit Ethernet Applications

The HD38999 is available for high speed (Gigabit Ethernet) data transmission in the size 9-9 insert pattern.

Data transmission performance of this connector insert:

- 10 Base T, 100 Base TX, and 1000 Base T networks using Cat 5e per TIA/EIA568B and Class D per ISO/IEC 11801.  
(Test report available - consult Amphenol Aerospace for more information)

#### Signal-Ground Pin Configuration Wiring Recommendations



HD38999 Connector with 9-9  
Insert Pattern (Rear View)

Notice: Specifications are subject to change without notice. Contact your nearest Amphenol Corporation Sales Office for the latest specifications. All statements, information and data given herein are believed to be accurate and reliable but are presented without guarantee, warranty, or responsibility of any kind, expressed or implied. Statements or suggestions concerning possible use of our products are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should assume that all safety measures are indicated or that other measures may not be required. Specifications are typical and may not apply to all connectors.

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