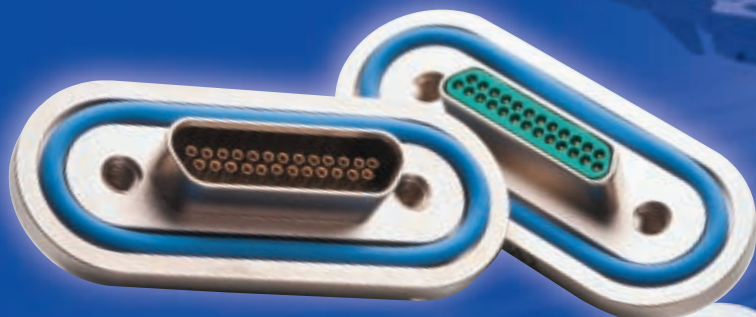


# Dura-Con™ Hermetic

HERMETIC CONNECTORS

STANDARD DURA-CON™ CONNECTORS WITH HIGH PERFORMANCE HERMETIC SEALS



# Hermetic Connectors

Cinch Dura-Con™ Hermetic Connectors offer a high performance hermetic seal designed into the standard Cinch Dura-Con™ Connector.

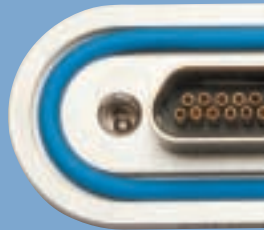
## Features

Both plug and socket available in 9, 15, 21, 25, 31, 37 and 51 positions  
 Aluminium shell provides extra strength and EMI/RFI shielding capability  
 Rugged twist-pin contacts resistant to shock and vibration make metal shell Dura-Con™ an excellent choice for harsh environments  
 Hermetic seal achieved through Cinch Hermetic compound  
 Tested to Mil-DTL-83513  
 Pigtail and Solder Cup variations only



## Materials

|  |   |
|--|---|
| <p>Insulator:<br/>                 Contacts:<br/>                 Contact Plating:<br/>                 Shell:<br/>                 Shell Plating:<br/>                 Hermetic Seal:<br/>                 Sealing:</p> | <p>UL94V-0 rated glass-filled polyester or diallyl phthalate<br/>                 Pins - Copper alloy, sockets - Copper alloy (machined)<br/>                 1.27 micron gold as per Mil-G-4204<br/>                 Aluminium alloy<br/>                 Electroless nickel and cadmium<br/>                 Cinch Hermetic compound<br/>                 Fluoro Silicone 'O' ring seal</p> |
|--|---|



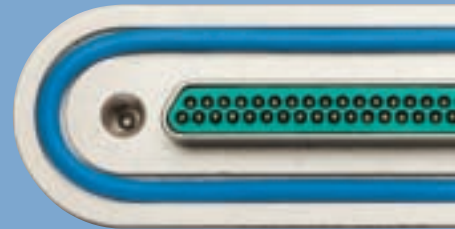
## Environmental

|   |   |
|---|---|
| <p>Operating Temperature:<br/>                 Hermetic Seal:</p> | <p>-55°C to +125°C<br/>                 1 x 10<sup>-8</sup>cc/sec @ 1 Atmosphere Helium</p> |
|---|---|



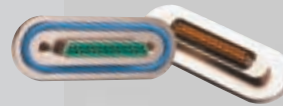
## Electrical

|  |   |
|--|---|
| <p>Current Rating:<br/>                 Withstanding Voltage:<br/>                 Contact Resistance:</p> | <p>3 Amps maximum<br/>                 600 VAC RMS @ sea level<br/>                 8 milliohms maximum</p> |
|--|---|



## Mechanical

|                            |   |
|----------------------------|---|
| <p>Individual Contact:</p> | <p>6 oz. (170.40g) maximum insertion force<br/>                 0.5 oz. (14.20g) minimum withdrawal</p> |
|----------------------------|---|

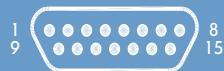


# Contact Arrangements

Mating view of pin insert. (Use reverse order for socket side)



9 Contacts



15 Contacts



21 Contacts



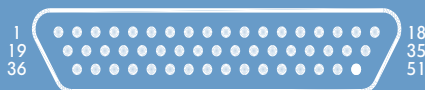
25 Contacts



31 Contacts



37 Contacts

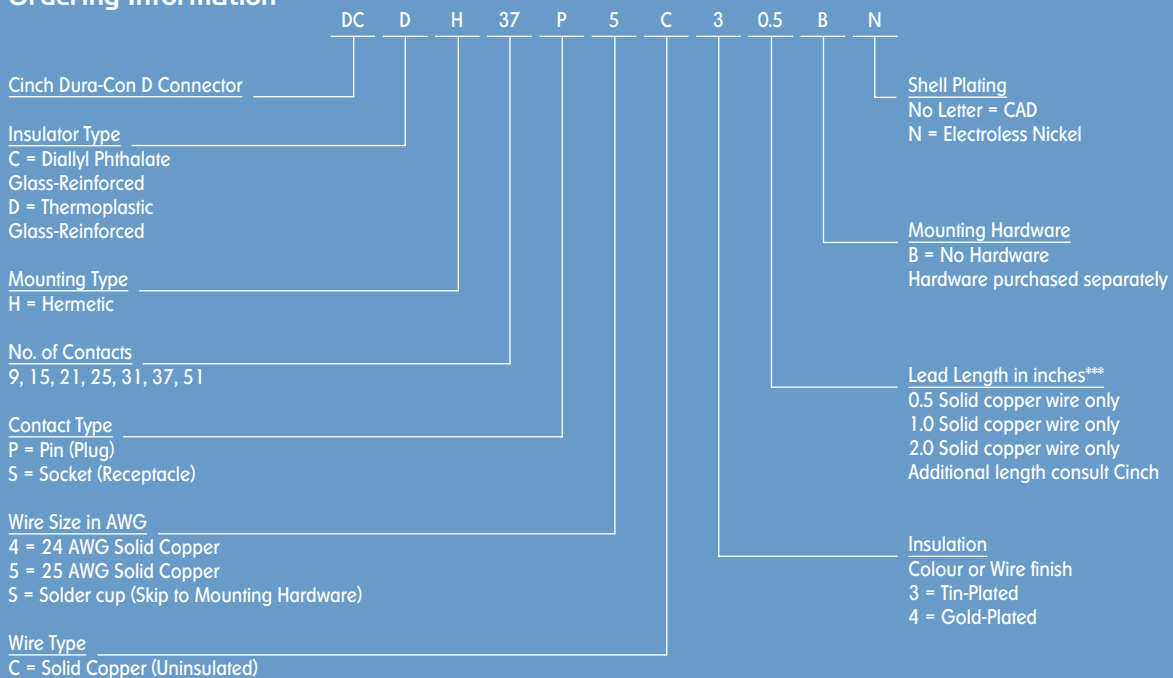


51 Contacts



100 Contacts

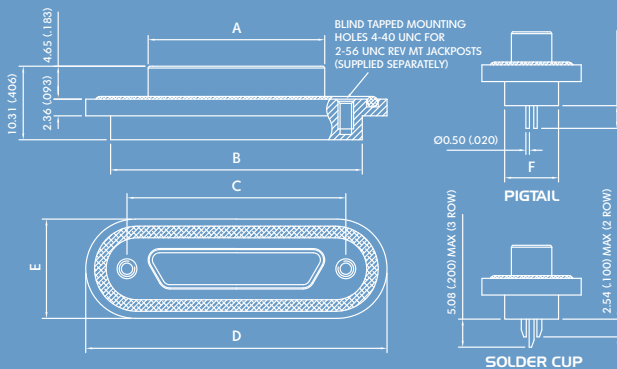
## Ordering Information



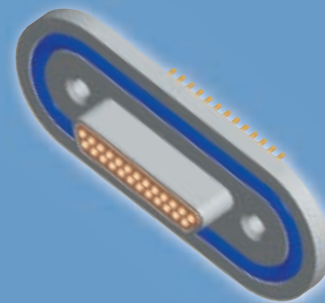
(Consult factory for non-standard wire types)

\*\*\* - Length Tolerance: solid wire =  $\pm 3/32"$

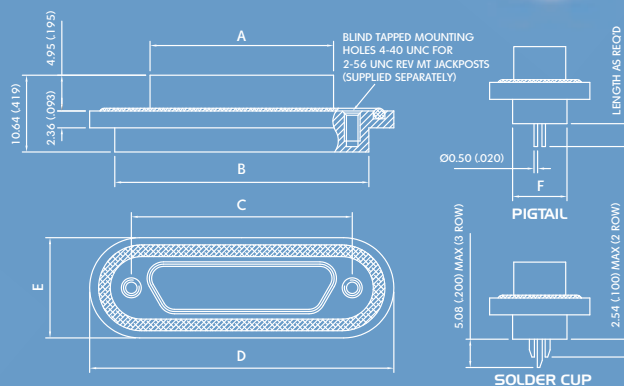
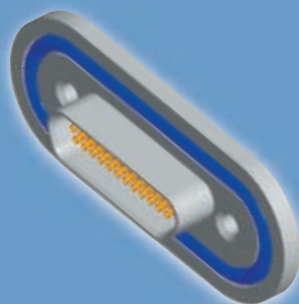
# Connector Dimensions - Metal Shell



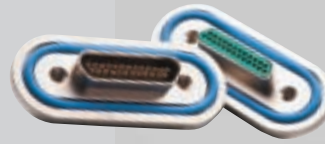
Plug Arrangement



Socket Arrangement

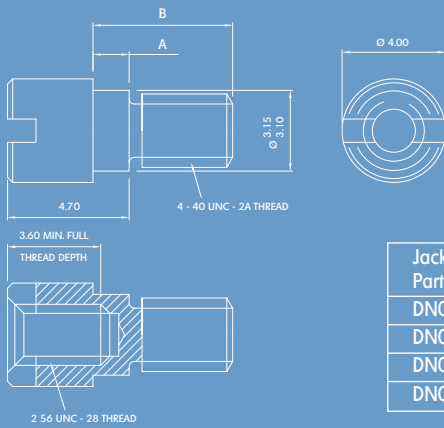


| No. of Contacts | A<br>Max                     |        | B<br>± 0.25 (0.010 <sup>*</sup> ) |        | C<br>± 0.127 (0.005 <sup>*</sup> ) |        | D<br>± 0.20 (0.008 <sup>*</sup> ) |        | E<br>± 0.20 (0.008 <sup>*</sup> ) |        | F<br>± 0.20 (0.008 <sup>*</sup> ) |        |
|-----------------|------------------------------|--------|-----------------------------------|--------|------------------------------------|--------|-----------------------------------|--------|-----------------------------------|--------|-----------------------------------|--------|
|                 | mm                           | inches | mm                                | inches | mm                                 | inches | mm                                | inches | mm                                | inches | mm                                | inches |
| 9 Plug          | 8.46                         | 0.333  | 19.65                             | 0.774  | 14.35                              | 0.565  | 31.68                             | 1.247  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 9 Socket        | 10.06                        | 0.396  | 19.65                             | 0.774  | 14.35                              | 0.565  | 31.68                             | 1.247  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 15 Plug         | 12.27                        | 0.483  | 23.45                             | 0.923  | 18.16                              | 0.715  | 34.16                             | 1.345  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 15 Socket       | 13.87                        | 0.546  | 23.45                             | 0.923  | 18.16                              | 0.715  | 34.16                             | 1.345  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 21 Plug         | 16.08                        | 0.633  | 27.25                             | 1.073  | 21.97                              | 0.865  | 39.15                             | 1.541  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 21 Socket       | 17.68                        | 0.696  | 27.25                             | 1.073  | 21.97                              | 0.865  | 39.15                             | 1.541  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 25 Plug         | 18.62                        | 0.733  | 29.85                             | 1.175  | 24.51                              | 0.965  | 41.66                             | 1.640  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 25 Socket       | 20.22                        | 0.796  | 29.85                             | 1.175  | 24.51                              | 0.965  | 41.66                             | 1.640  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 31 Plug         | 21.16                        | 0.883  | 33.65                             | 1.325  | 28.32                              | 1.115  | 44.13                             | 1.737  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 31 Socket       | 24.03                        | 0.946  | 33.65                             | 1.325  | 28.32                              | 1.115  | 44.13                             | 1.737  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 37 Plug         | 26.24                        | 1.033  | 37.45                             | 1.474  | 32.13                              | 1.265  | 49.12                             | 1.934  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 37 Socket       | 27.84                        | 1.096  | 37.45                             | 1.474  | 32.13                              | 1.265  | 49.12                             | 1.934  | 17.00                             | 0.670  | 7.50                              | 0.295  |
| 51 Plug         | 24.97                        | 0.983  | 36.15                             | 1.423  | 30.86                              | 1.215  | 48.50                             | 1.909  | 18.10                             | 0.713  | 8.60                              | 0.339  |
| 51 Socket       | 26.57                        | 1.046  | 36.15                             | 1.423  | 30.86                              | 1.215  | 48.50                             | 1.909  | 18.10                             | 0.713  | 8.60                              | 0.339  |
| 100 Plug        | Consult Cinch Connectors Ltd |        |                                   |        |                                    |        |                                   |        |                                   |        |                                   |        |
| 100 Socket      | Consult Cinch Connectors Ltd |        |                                   |        |                                    |        |                                   |        |                                   |        |                                   |        |



# Mounting Hardware – 9 to 51 Way only

Consult Cinch for 100 Way options



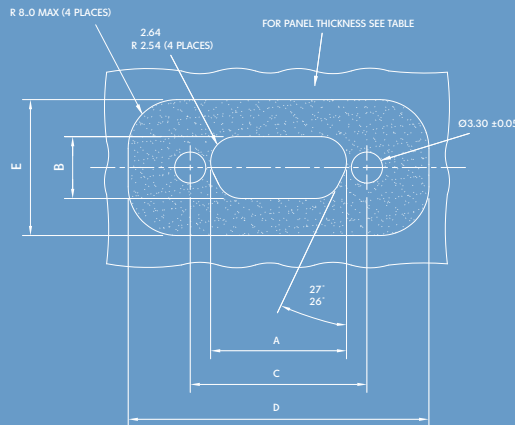
### Recommended Torque Tightening

Recommended torque for tightening jackpost (4-40 UNC) into connector, 0.45 Nm / 0.55 Nm (4/5 in. lb)

Recommended torque for tightening jackscrew of mating connector (2-56 UNC) into jackpost, 0.23 Nm / 0.28 Nm (2/2.5 in. lb)

| Jackpost Part Number | Panel Thickness |        | A         |             | B   |        |
|----------------------|-----------------|--------|-----------|-------------|-----|--------|
|                      | mm              | inches | mm        | inches      | mm  | inches |
| DN00008 08           | 0.8             | 0.031  | 0.65/0.60 | 0.026/0.024 | 4.6 | 0.181  |
| DN00008 12           | 1.2             | 0.047  | 1.05/1.00 | 0.041/0.039 | 5.0 | 0.197  |
| DN00008 16           | 1.6             | 0.063  | 1.45/1.40 | 0.057/0.055 | 5.4 | 0.213  |
| DN00008 24           | 2.4             | 0.094  | 2.25/2.20 | 0.089/0.087 | 6.2 | 0.244  |

### Panel Mounting Details



| Jackpost Part Number | Panel Thickness ±0.05 (.002) |        |
|----------------------|------------------------------|--------|
|                      | mm                           | inches |
| DN00008 08           | 0.7                          | 0.028  |
| DN00008 12           | 1.1                          | 0.043  |
| DN00008 16           | 1.5                          | 0.059  |
| DN00008 24           | 2.3                          | 0.091  |

Area to be flat, smooth and free from tool marks, blemishes etc. (Sealing face for 'O' ring)

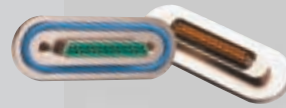
| No. Ways | A<br>+ .10 (.004)            |        | B<br>+ .10 (.004) |        | C<br>± 0.05 (.002) |        | D<br>(MIN) |        | E<br>(MIN) |        |
|----------|------------------------------|--------|-------------------|--------|--------------------|--------|------------|--------|------------|--------|
|          | mm                           | inches | mm                | inches | mm                 | inches | mm         | inches | mm         | inches |
| 9        | 10.11                        | 0.398  | 6.32              | 0.249  | 14.35              | 0.565  | 35.0       | 1.378  | 20.0       | 0.787  |
| 15       | 13.92                        | 0.548  | 6.32              | 0.249  | 18.16              | 0.715  | 37.0       | 1.457  | 20.0       | 0.787  |
| 21       | 17.73                        | 0.698  | 6.32              | 0.249  | 21.97              | 0.865  | 42.0       | 1.654  | 20.0       | 0.787  |
| 25       | 20.27                        | 0.798  | 6.32              | 0.249  | 24.51              | 0.965  | 45.0       | 1.772  | 20.0       | 0.787  |
| 31       | 24.08                        | 0.948  | 6.32              | 0.249  | 28.34              | 1.116  | 47.0       | 1.850  | 20.0       | 0.787  |
| 37       | 27.89                        | 1.098  | 6.32              | 0.249  | 32.13              | 1.265  | 52.0       | 2.047  | 20.0       | 0.787  |
| 51       | 26.62                        | 1.048  | 7.42              | 0.292  | 30.86              | 1.215  | 52.0       | 2.047  | 22.0       | 0.866  |
| 100      | Consult Cinch Connectors Ltd |        |                   |        |                    |        |            |        |            |        |



# Connector Performance Specifications

| Property   | Requirement                           | Test Method                             |
|--|---------------------------------------|---|
| Current Rating   | 3 Amp maximum                         |   |
| Dielectric Withstanding Voltage<br>Sea level                         | 900 VAC                               | Mil-STD-1344, Method 3001               |
| Contact Resistance   | 8 milliohms maximum                   | Mil-STD-202, Method 307                 |
| Low Level Contact resistance   | 32 milliohms maximum                  | Mil-STD-1344, Method 3002               |
| Insulation Resistance  | 5000 megohms minimum                  | Mil-STD-1344, Method 3003               |
| Magnetic Permeability  | 2.0 $\mu$ maximum                     | ASTM A342                               |
| Mating Force   | (10 ounces max.) x (# of contacts)    | Mil-DTL-83513                           |
| Unmating Force   | (0.5 ounces min.) x (# of contacts)   | Mil-DTL-83513                           |
| Contact Retention  | 5 pounds minimum                      | Mil-STD-1344, Method 2007               |
| Operating Temperature  | -55°C. to 125°C.                      |   |
| Durability   | 500 mating cycles minimum             | Mil-DTL-83515, Para 4.5.16              |
| Salt Spray (corrosion)   | 48 hours                              | Mil-DTL-1344, Method 2004, Condition E  |
| Crimp Tensile Strength<br>Wire Type M22759/11<br>Wire Type M22759/33 | 5 pounds minimum<br>10 pounds minimum | Mil-DTL-83513, Para 4.5.20              |
| Shock  | 50 G's                                | Mil-STD-1344, Method 2004, Condition E  |
| Vibration  | 20 G's                                | Mil-STD-1344, Method 2005, Condition IV |
| Minimum Hermetic Leakage Rate  | 1 x 10 <sup>-8</sup> mbar l/s         |   |
| Moisture Permeation  | 0.5% in 168 hrs                       |   |

|                             | No. of Contacts | Maximum Mating Force |       | Minimum Unmating Force |      |
|-----------------------------|-----------------|----------------------|-------|------------------------|------|
|                             |                 | lb                   | kg    | lb                     | kg   |
| Mating<br>Unmating<br>Force | 9               | 5.63                 | 2.56  | 0.28                   | 0.13 |
|                             | 15              | 9.38                 | 4.26  | 0.47                   | 0.21 |
|                             | 21              | 13.13                | 5.96  | 0.66                   | 0.30 |
|                             | 25              | 15.63                | 7.10  | 0.78                   | 0.35 |
|                             | 31              | 19.38                | 8.80  | 0.97                   | 0.44 |
|                             | 37              | 23.13                | 10.50 | 1.16                   | 0.53 |
|                             | 51              | 31.88                | 14.47 | 1.59                   | 0.72 |
|                             | 100             | 62.50                | 28.38 | 3.13                   | 1.42 |



# Engineer's Check List

## SECTOR

- Sea
- Aerospace
- Sub-Terrain
- Ground Support
- Armoured Vehicle
- Rail
- Space
- Radar
- Avionics
- Munitions / Missile

## CONNECTOR STYLE

- Rectangular
- Circular
- Z Axis Compression
- Power & Signal
- Hermetic
- IPC Rated
- Filtered
- Edge Connector
- Multipole
- High Speed
- Rugged Enclosure

## WIRE TYPE

- Stranded
- Solid
- Twisted pairs
- Co-Axial
- Colour Code Single / Multi
- Multi Core
- Shielded
- Wire AWG
- Custom Cable

## ENVIRONMENT

- Dust
- Moisture Resistant
- Full Water Immersion
- Chemical Compatibility
- RoHS
- Low Smoke / Zero Halogen
- Extreme Temperature Tolerance
- Flame Retardant

## MARKET SEGMENT

- Oil Petroleum Gas (OPG).
- Renewable Energy
- Military & Defence
- Commercial
- Computer
- Industrial
- Telecommunications
- Medical

## CONSTRUCTION

- Male  Female
- Crimp
- Solder
- PC Tail  90°  180°
- RF Signals
- Number Contact Points
- Contact Pitch
- Housing Material
- Plastic  Metal

## CUSTOM INTERCONNECT

- Single Ended
- Double Ended
- Multi Limb Cable Assembly
- Strain Relief Backshell
- Environmental Backshell / Boot
- 3600 Screened Backshell
- Moulded Strain Relief
- Woven
- Flexible Circuit

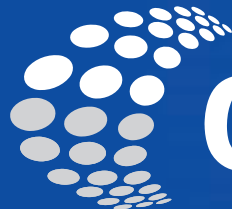
## SPECIFICATION

- Operating Temperature Range
- Mating Cycles
- Electrical
- Voltage Rating
- Current Rating
- Filtration Rating
- Materials / Finish
- Contact Plating
- Housing Plating

**At Cinch our philosophy is that anything is possible.**

With over 70 years' experience as a global supplier we offer simple, effective solutions to our customers' interconnect and integration needs. From basic interconnect to complex integration requiring bespoke design, we focus primarily on quality, ingenuity and reliability, meeting the high performance demands of industries such as Defence, Aerospace, Space, Telecom, High Speed Data Servers and Industrial Transportation.

**TOGETHER  
WE STIMULATE,  
WE INNOVATE,  
WE CREATE.**



**CINCH<sup>®</sup>**  
**GET CONNECTED...**

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Cinch has manufacturing and sales sites located globally approved to AS9100.

