Dura-Con™ Hermetic Connectors
Standard Connectors With
High Performance Hermetic Seals Catalog

belfuse.com/cinch
Cinch Dura-Con™ Hermetic Connectors offers a high performance hermetic seal designed into our standard 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

Electrical
• Current Rating: 3 Amps maximum
• Withstanding Voltage: 600 VAC RMS @ sea level
• Contact Resistance: 8 milliohms maximum

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

Environmental
• Operating Temperature: -55°C to +125°C
• Hermetic Seal: 1 x 10-8cc/sec @ 1 Atmosphere Helium

Mechanical
• Individual Contact: 6 oz. (170.40g) maximum insertion force 0.5 oz. (14.20g) minimum withdrawal

### Connector Performance Specifications

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

<table>
<thead>
<tr>
<th>No. of Contacts</th>
<th>9</th>
<th>15</th>
<th>21</th>
<th>25</th>
<th>31</th>
<th>37</th>
<th>51</th>
<th>100</th>
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<tbody>
<tr>
<td>Minimum Unmating Force</td>
<td>2.56 kg</td>
<td>4.26 kg</td>
<td>5.96 kg</td>
<td>7.10 kg</td>
<td>8.80 kg</td>
<td>10.50 kg</td>
<td>14.47 kg</td>
<td>28.38 kg</td>
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<tr>
<td></td>
<td>0.28 lbs</td>
<td>0.47 lbs</td>
<td>0.66 lbs</td>
<td>0.78 lbs</td>
<td>0.97 lbs</td>
<td>1.16 lbs</td>
<td>1.59 lbs</td>
<td>3.13 lbs</td>
</tr>
<tr>
<td></td>
<td>0.13 kg</td>
<td>0.21 kg</td>
<td>0.30 kg</td>
<td>0.35 kg</td>
<td>0.44 kg</td>
<td>0.53 kg</td>
<td>0.72 kg</td>
<td>1.42 kg</td>
</tr>
</tbody>
</table>
# DURA-CON™ METAL SHELL

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

**Plug Arrangement**

![Plug Arrangement Diagram](image1)

**Socket Arrangement**

![Socket Arrangement Diagram](image2)

<table>
<thead>
<tr>
<th>No. of Contacts</th>
<th>A Max.</th>
<th>± 0.25 (0.010”)</th>
<th>± 0.127 (0.005”)</th>
<th>± 0.20 (0.008”)</th>
<th>± 0.20 (0.008”)</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>inches</td>
<td>mm</td>
<td>inches</td>
<td>mm</td>
<td>inches</td>
</tr>
<tr>
<td>9 Plug</td>
<td>8.4</td>
<td>0.333</td>
<td>19.65</td>
<td>0.774</td>
<td>14.35</td>
<td>0.565</td>
</tr>
<tr>
<td>9 Socket</td>
<td>10.06</td>
<td>0.396</td>
<td>19.65</td>
<td>0.774</td>
<td>14.35</td>
<td>0.565</td>
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<tr>
<td>15 Plug</td>
<td>12.27</td>
<td>0.483</td>
<td>23.45</td>
<td>0.923</td>
<td>18.16</td>
<td>0.715</td>
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<tr>
<td>15 Socket</td>
<td>13.87</td>
<td>0.546</td>
<td>23.45</td>
<td>0.923</td>
<td>18.16</td>
<td>0.715</td>
</tr>
<tr>
<td>21 Plug</td>
<td>16.08</td>
<td>0.633</td>
<td>27.25</td>
<td>1.073</td>
<td>21.97</td>
<td>0.865</td>
</tr>
<tr>
<td>21 Socket</td>
<td>17.68</td>
<td>0.696</td>
<td>27.25</td>
<td>1.073</td>
<td>21.97</td>
<td>0.865</td>
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<tr>
<td>25 Plug</td>
<td>18.62</td>
<td>0.733</td>
<td>29.85</td>
<td>1.175</td>
<td>24.51</td>
<td>0.965</td>
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<td>25 Socket</td>
<td>20.22</td>
<td>0.796</td>
<td>29.85</td>
<td>1.175</td>
<td>24.51</td>
<td>0.965</td>
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<td>31 Plug</td>
<td>21.16</td>
<td>0.883</td>
<td>33.65</td>
<td>1.325</td>
<td>28.32</td>
<td>1.115</td>
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<td>31 Socket</td>
<td>24.03</td>
<td>0.946</td>
<td>33.65</td>
<td>1.325</td>
<td>28.32</td>
<td>1.115</td>
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<tr>
<td>37 Plug</td>
<td>26.24</td>
<td>1.033</td>
<td>37.45</td>
<td>1.474</td>
<td>32.13</td>
<td>1.265</td>
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<tr>
<td>37 Socket</td>
<td>27.84</td>
<td>1.096</td>
<td>37.45</td>
<td>1.474</td>
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<td>51 Plug</td>
<td>24.97</td>
<td>0.983</td>
<td>36.15</td>
<td>1.423</td>
<td>30.86</td>
<td>1.215</td>
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<td>51 Socket</td>
<td>26.57</td>
<td>1.046</td>
<td>36.15</td>
<td>1.423</td>
<td>30.86</td>
<td>1.215</td>
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<tr>
<td>100 Plug</td>
<td>Consult Cinch Connectors Ltd</td>
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<tr>
<td>100 Socket</td>
<td>Consult Cinch Connectors Ltd</td>
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<td></td>
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</tbody>
</table>
Recommended Torque Tightening

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)

<table>
<thead>
<tr>
<th>Jackpost Part Number</th>
<th>Panel Thickness</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D (MIN)</th>
<th>E (MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN00008 08</td>
<td>0.8 mm / 0.031</td>
<td>0.65/0.60</td>
<td>0.026/0.024</td>
<td>4.6 mm</td>
<td>0.181</td>
<td></td>
</tr>
<tr>
<td>DN00008 12</td>
<td>1.2 mm / 0.047</td>
<td>1.05/1.00</td>
<td>0.041/0.039</td>
<td>5.0 mm</td>
<td>0.197</td>
<td></td>
</tr>
<tr>
<td>DN00008 16</td>
<td>1.6 mm / 0.063</td>
<td>1.45/1.40</td>
<td>0.057/0.055</td>
<td>5.4 mm</td>
<td>0.213</td>
<td></td>
</tr>
<tr>
<td>DN00008 24</td>
<td>2.4 mm / 0.094</td>
<td>2.25/2.20</td>
<td>0.089/0.087</td>
<td>6.2 mm</td>
<td>0.244</td>
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</table>

Panel Mounting Details

<table>
<thead>
<tr>
<th>Jackpost Part Number</th>
<th>Panel Thickness ±0.05 (.002)</th>
<th>A ±.10 (.004)</th>
<th>B ±.10 (.004)</th>
<th>C ±.05 (.002)</th>
<th>D (MIN)</th>
<th>E (MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN00008 08</td>
<td>0.7 mm / 0.028</td>
<td>10.11 mm</td>
<td>0.398</td>
<td>14.35 mm</td>
<td>35.0 mm</td>
<td>1.378</td>
</tr>
<tr>
<td>DN00008 12</td>
<td>1.1 mm / 0.043</td>
<td>13.92 mm</td>
<td>0.548</td>
<td>18.16 mm</td>
<td>37.0 mm</td>
<td>1.457</td>
</tr>
<tr>
<td>DN00008 16</td>
<td>1.5 mm / 0.059</td>
<td>17.73 mm</td>
<td>0.698</td>
<td>21.97 mm</td>
<td>42.0 mm</td>
<td>1.654</td>
</tr>
<tr>
<td>DN00008 24</td>
<td>2.3 mm / 0.091</td>
<td>20.27 mm</td>
<td>0.798</td>
<td>24.51 mm</td>
<td>45.0 mm</td>
<td>1.772</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>No. Ways</th>
<th>A ±.10 (.004)</th>
<th>B ±.10 (.004)</th>
<th>C ±.05 (.002)</th>
<th>D (MIN)</th>
<th>E (MIN)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>10.11 mm</td>
<td>6.32 mm</td>
<td>14.35 mm</td>
<td>35.0 mm</td>
<td>1.378</td>
</tr>
<tr>
<td>15</td>
<td>13.92 mm</td>
<td>6.32 mm</td>
<td>18.16 mm</td>
<td>37.0 mm</td>
<td>1.457</td>
</tr>
<tr>
<td>21</td>
<td>17.73 mm</td>
<td>6.32 mm</td>
<td>21.97 mm</td>
<td>42.0 mm</td>
<td>1.654</td>
</tr>
<tr>
<td>25</td>
<td>20.27 mm</td>
<td>6.32 mm</td>
<td>24.51 mm</td>
<td>45.0 mm</td>
<td>1.772</td>
</tr>
<tr>
<td>31</td>
<td>24.08 mm</td>
<td>6.32 mm</td>
<td>28.34 mm</td>
<td>47.0 mm</td>
<td>1.850</td>
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<tr>
<td>37</td>
<td>27.89 mm</td>
<td>6.32 mm</td>
<td>32.13 mm</td>
<td>52.0 mm</td>
<td>2.047</td>
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<tr>
<td>51</td>
<td>26.62 mm</td>
<td>7.42 mm</td>
<td>30.86 mm</td>
<td>52.0 mm</td>
<td>2.047</td>
</tr>
<tr>
<td>100</td>
<td>Consult Cinch Connectors Ltd</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**HOW TO ORDER**

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

### Contact Arrangements

- **9 Contacts**
  - 1 6 9
  - 15 9

- **15 Contacts**
  - 8 15

- **21 Contacts**
  - 12 21

- **25 Contacts**
  - 13 25

- **31 Contacts**
  - 16 31

- **37 Contacts**
  - 19 37

- **51 Contacts**
  - 18 35 51

- **100 Contacts**
  - 26 51 75 100

### Ordering Information

**Cinch Dura-Con D connector**

- **Insulator type**
  - D = Thermoplastic glass-reinforced

- **Mounting type**
  - H = Hermetic

- **No. of contacts**
  - 9, 15, 21, 25, 31, 37, 51

- **Contact type**
  - P = Pin (plug)
  - S = Socket (receptacle)

- **Wire size in AWG**
  - 4 = 24 AWG solid copper
  - S = Solder cup (skip to mounting hardware)

- **Wire type**
  - C = Solid copper ( uninsulated)

**Mounting hardware**

- **B** = No hardware
- **F** = Float mount
- **R** = Reverse float mount
- **K** = Jackscrew (standard)
- **L** = Jackscrew (low profile)
- **P** = Jackpost, size 9 through 51
  - MIL-C-83513/5-07 size 100
  - MIL-C-83513/5-17

**Shell plating**

- **N** = Electroless nickel

**Lead length in inches**

- **0.5** = Solid copper wire only
- **1.0** = Solid copper wire only
- **2.0** = Solid copper wire only

**Insulation colour or wire finish**

- **3** = Tin-plated
- **4** = Gold-plated (solid wire)
ENGINEER'S CHECK LIST

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

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

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

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

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

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

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

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

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