

# Dura-Con connectors

## Metal Shell D Microminiature Environmental Connectors

Every passing year brings technological advances as industry demands more complex electronic packaging. Cinch's Dura-Con Metal Shell D Microminiature Connectors are designed to meet these stringent requirements in aircraft, data processing equipment, spacecraft and other critical applications.

Years of research and development have resulted in a series of durable,

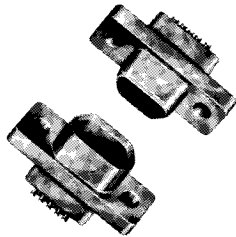
high quality connectors of small size and light weight. These high density, environmental microminiature connectors are available in 8 shell sizes accommodating 9 to 100 Twist-pin 24 size contacts arranged on .050-inch centers. Special power arrangements and custom terminations can be specified also.

Dura-Con Metal Shell D connectors are constructed of rugged aluminum to give an extra strength, prevent chipping, cracking or breaking, even under severe mishandling and abuse. Mating is accomplished by friction or jack screws. These shells also provide electromagnetic (EMI) shielding (40 db attenuation at 100 MHz in mated condition) and RFI shielding.

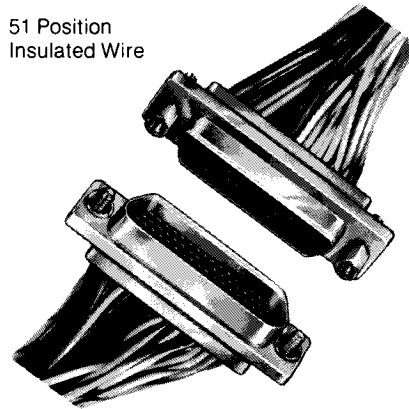
Connector contacts are effectively sealed off from moisture and humidity as well as from each other and their shell by a silicone elastomer compression interfacial seal. The rear connector seal is of epoxy potting and passes the 10-day MIL-STD-202, Method 106 humidity cycle.

The Dura-Con Metal Shell D Microminiature Connector has proved itself to be strong, durable and reliable in thousands of field applications. They can be manufactured in production quantities in all 8 contact configurations, as well as in varying shapes for special applications.

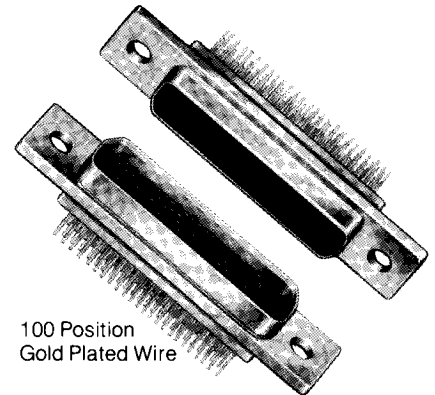
Metal Shell D Microminiature Environmental Connectors meets the requirements of MIL-C-83513.



9 Position  
Solder Cup



51 Position  
Insulated Wire



100 Position  
Gold Plated Wire

## Performance Data

### Electrical

**Contact Resistance:** When measured in accordance with MIL-C-83513, allowable contact resistance measured on the wire at the rear of the connector is 8 milliohms maximum.

**Current Rating:** 3 amps max.

**Max. Voltage Drop:** 24 millivolts at 3 amps.

**Dielectric Withstanding Voltage:** Sea Level—600VAC; 70,000 ft. — 150VAC.

**Insulation Resistance:** 5000 megohms min.

### Mechanical

**Engaging and Separating Force:** For an individual contact the maximum engaging force is 6 ounces. Minimum separating force is 0.5 ounces per contact.

**Mating and Unmating Force:** Mating: 10 ounces times the number of contacts. Unmating: 0.5 ounces minimum times number of contacts.

### Environmental

With compressed silicone elastomer interfacial seal to provide a complete moisture and humidity seal between each contact and between contacts and shell.

**Vibration:** Tested in accordance with MIL-STD-1344, Method 2005, Test Condition IV with no discontinuity in excess of one (1) microsecond.

**Shock:** Tested in accordance with MIL-STD-1344, Method 2004, Test Condition E, with no discontinuity in excess of one (1) microsecond.

**Corrosion Resistance:** No damage or unacceptable increase in contact resistance after mated sample subjected to 48 hours of salt spray per MIL-STD-202, Method 101D, 5% solution, Condition B.

**Temperature Range:** -55°C to +135°C.

**Durability:** No mechanical or electrical defects after 500 cycles at a rate of 600 cycles per hour.

**Moisture Resistance:** Tested in accordance with MIL-STD-1344, Method 1002, omit 7a and b. After testing, the insulation resistance is greater than 1,000 megohms.

### Standard Materials and Finishes

**Shell:** Aluminum alloy, cadmium plated, yellow chromate, or electroless nickel plated.

**Insulator:** Glass filled thermoplastic, polyester 94 V-O or thermoset diallyl phthalate.

**Contacts:** Pin and socket contact—copper alloy .000050 gold plated.

**Interfacial Seal:** Silicone Elastomer. (Fluorosilicone Available)

### Mechanical Features:

**Sizes:** 8 sizes: 9, 15, 21, 25, 31, 37, 51, and 100.

**Service Classes:** Environmental.

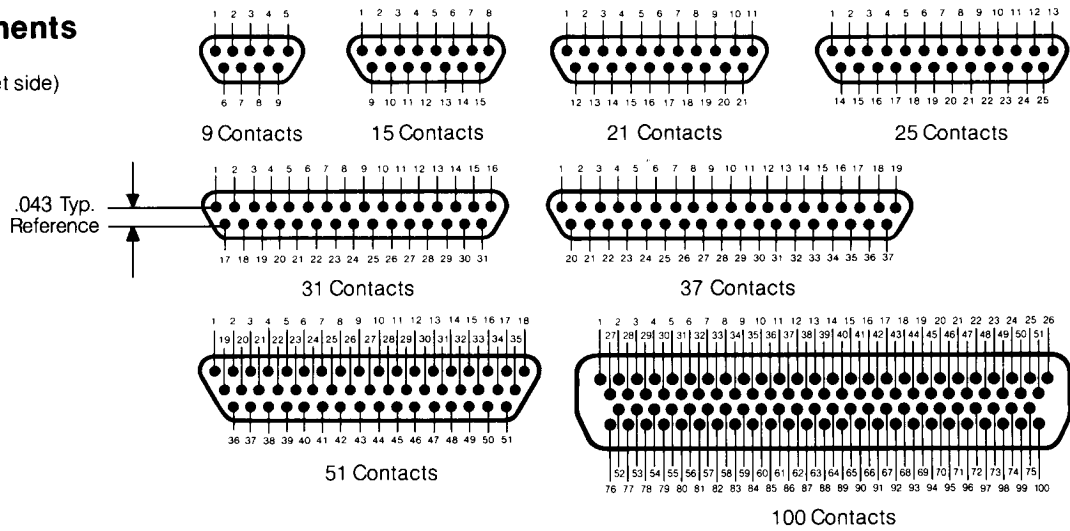
**Polarization:** Keystone-shaped shells.

**Contact Spacing Centers:** 0.050".

**Shell Styles:** Plug and receptacle.

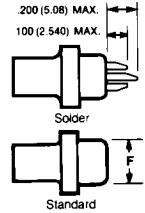
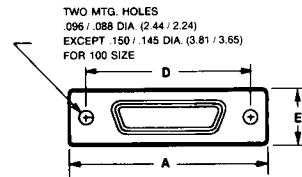
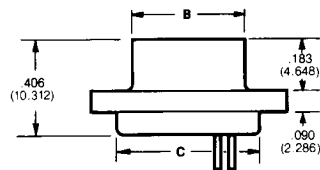
## Contact Arrangements

(Face View of Pin Insert)  
(Use reverse order for socket side)

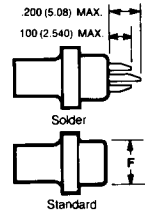
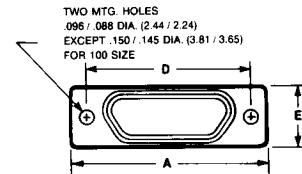
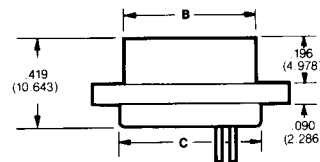


## Shell Dimensions

### Pin Contact Shell



### Socket Contact Shell



Part Number	A		B Max.		C		D		E		F Max.	
	± .010 (.254)				+ .010 (.254) - .018 (.457)		± .005 (.127)		± .010 (.254)			
	In.	MM	In.	MM	In.	MM	In.	MM	In.	MM	In.	MM
DCDM-9P	.775	19.68	.333	8.46	.390	9.91	.565	14.35	.298	7.57	.270	6.86
DCDM-9S	.775	19.68	.396	10.06	.390	9.91	.565	14.35	.298	7.57	.270	6.86
DCDM-15P	.925	23.50	.483	12.27	.540	13.72	.715	18.16	.298	7.57	.270	6.86
DCDM-15S	.925	23.50	.546	13.87	.540	13.72	.715	18.16	.298	7.57	.270	6.86
DCDM-21P	1.075	27.30	.633	16.08	.690	17.53	.865	21.97	.298	7.57	.270	6.86
DCDM-21S	1.075	27.30	.696	17.68	.690	17.53	.865	21.97	.298	7.57	.270	6.86
DCDM-25P	1.175	29.84	.733	18.62	.790	20.07	.965	24.51	.298	7.57	.270	6.86
DCDM-25S	1.175	29.84	.796	20.22	.790	20.07	.965	24.51	.298	7.57	.270	6.86
DCDM-31P	1.325	33.66	.883	21.16	.940	23.88	1.115	28.32	.298	7.57	.270	6.86
DCDM-31S	1.325	33.66	.946	24.03	.940	23.88	1.115	28.32	.298	7.57	.270	6.86
DCDM-37P	1.475	37.46	1.033	26.24	1.090	27.69	1.265	32.13	.298	7.57	.270	6.86
DCDM-37S	1.475	37.46	1.096	27.84	1.090	27.69	1.265	32.13	.298	7.57	.270	6.86
DCDM-51P	1.425	36.20	.983	24.97	1.040	26.42	1.215	30.86	.341	8.66	.310	7.87
DCDM-51S	1.425	36.20	1.046	26.57	1.040	26.42	1.215	30.86	.341	8.66	.310	7.87
DCDM-100P	2.160	54.86	1.383	35.13	1.432	36.38	1.800	45.71	.384	9.75	.360	9.15
DCDM-100S	2.160	54.86	1.446	36.73	1.432	36.38	1.800	45.71	.384	9.75	.360	9.15

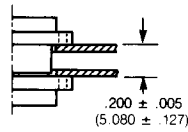
\*P = Pin, S = Socket

# Dura-Con connectors

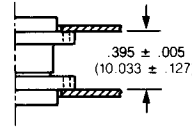
METAL SHELL, continued

## Panel Mounting Dimensions

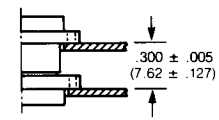
Pin and socket, rear mounted



Pin and socket, front mounted



Pin, front mounted Socket, rear mounted



## Panel Cutout Dimensions

Figure 1, Front Mounting

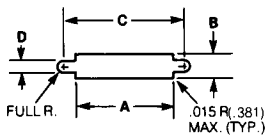


Figure 2, Rear Mounting

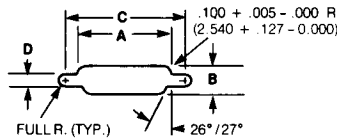
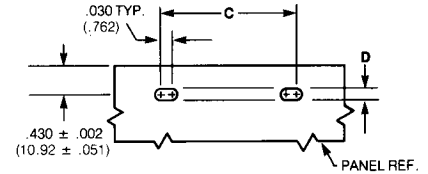


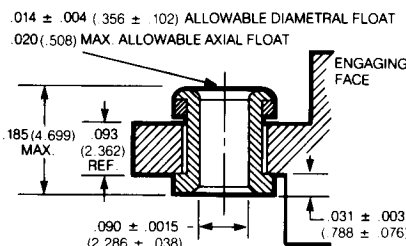
Figure 3, Edgeboard Mounting



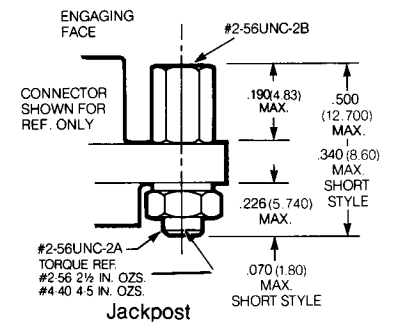
Part Number	Figure Number	A		B		C		D	
		+ .004 - .000	(.101) (.000)	+ .004 - .000	(.101) (.000)	+ .005 - .000	(.127) (.000)	+ .005 - .000	(.127) (.000)
		In.	MM	In.	MM	In.	MM	In.	MM
DCDM-9	1	.408	10.36	.270	6.86	.570	14.48		
	2	.408	10.36	.256	6.50	.570	14.48	.089	2.26
	3	—	—	—	—	.570	14.48		
DCDM-15	1	.558	14.17	.270	6.86	.720	18.29		
	2	.558	14.17	.256	6.50	.720	18.29	.089	2.26
	3	—	—	—	—	.720	18.29		
DCDM-21	1	.708	17.98	.270	6.86	.870	22.10		
	2	.708	17.98	.256	6.50	.870	22.10	.089	2.26
	3	—	—	—	—	.870	22.10		
DCDM-25	1	.808	20.52	.270	6.86	.970	24.64		
	2	.808	20.52	.256	6.50	.970	24.64	.089	2.26
	3	—	—	—	—	.970	24.64		
DCDM-31	1	.958	24.33	.270	6.86	1.120	28.45		
	2	.958	24.33	.256	6.50	1.120	28.45	.089	2.26
	3	—	—	—	—	1.120	28.45		
DCDM-37	1	1.108	28.14	.270	6.86	1.270	32.26		
	2	1.108	28.14	.256	6.50	1.270	32.26	.089	2.26
	3	—	—	—	—	1.270	32.26		
DCDM-51	1	1.058	26.87	.315	8.00	1.220	30.99		
	2	1.058	26.87	.300	7.62	1.220	30.99	.089	2.26
	3	—	—	—	—	1.220	30.99		
DCDM-100	1	1.450	36.84	.361	9.17	1.805	45.86	.117	2.97
	2	1.562	39.68	.338	8.58	1.805	45.86	.117	2.97
	3	—	—	—	—	1.805	45.86	.117	2.97

## Mounting Hardware

**Float mounts** are available for use on connectors. A cut-away view is shown at right. Float mount and screw mount hole configurations have the same basic shell dimensions. Front panel mounted float mount (standard) is shown. Reverse mounting is available on request.

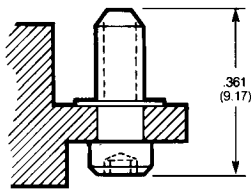


Float Mounting

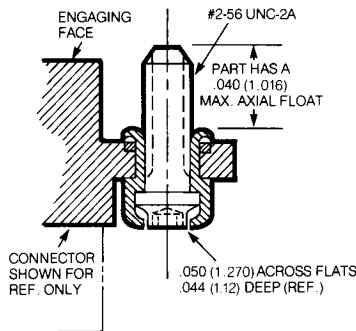


Jackpost

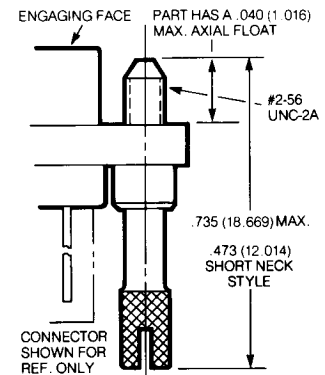
## Mounting Hardware (Continued)



Removable Jackscrew  
see S or M below

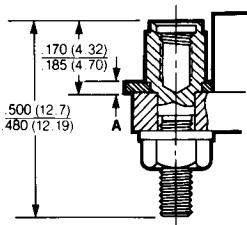


Jackscrew (Low profile)



Jackscrew (Standard)

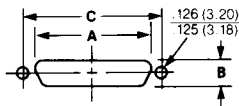
## Jackpost Bushing (for rear panel mounting)



Jackpost Part Number	Panel Thickness		A Dimension	
	In.	MM	In.	MM
281-00-00-024	.094	2.5	.092/.087	2.34/2.21
281-00-00-025	.063	1.6	.061/.056	1.55/1.42
281-00-00-026	.047	1.2	.047/.042	1.19/1.07
281-00-00-027	.031	0.8	.030/.025	0.76/0.64

Part Number (by Shell Size)	A +.004 (.101) -.000 (.000)		B +.004 (.101) -.000 (.000)		C ±.005 (.127)	
	In.	MM	In.	MM	In.	MM
9	.398	10.11	.249	6.32	.565	14.35
15	.548	13.92	.249	6.32	.715	18.16
21	.698	17.73	.249	6.32	.865	21.97
25	.798	20.27	.249	6.32	.965	24.51
31	.948	24.08	.249	6.32	1.115	28.34
37	1.098	27.89	.249	6.32	1.265	32.13
51	1.048	26.62	.292	7.42	1.215	30.86
100	1.448	36.78	.336	8.53	1.800	45.72

## Plug & Receptacle Dimensions



## How to Order

**Cinch Dura-Con D Connector Insulator Type**  
**C** = Diallyl Phthalate Glass Reinforced  
**D** = Thermoplastic Glass Reinforced

**Mounting Type**  
**M** = Screw Mount Metal Shell

**No. of Contacts**  
 9, 15, 21, 25, 31, 37, 51, 100

**Contact Type**  
**P** — Pin (Plug)  
**S** — Socket (Receptacle)

**Wire Size in AWG**  
 4 = 24, 5 = 25, 6 = 26, 8 = 28, 0 = 30 or S = Solder Cup  
 Stranded wire available in even number sizes only.

**Wire Type**  
 Stranded or solid wire  
**C** = Solid Copper  
**D** = Solid Dumet  
**E** = MIL-W-16878/4, 7 Strand  
**F** = MIL-W-16878/6, 7 Strand  
**G** = MIL-W-16878/4, 19 Strand  
**H** = MIL-W-16878/6, 19 Strand  
**J** = Solid Insulated Wire  
**K** = Insulated Wire Per MIL-W-22759/11  
**L** = Insulated Wire Per MIL-W-22759/19

**Termination, Color or Finish**  
**1** = White  
**2** = Yellow  
**3** = Tin Plated  
**4** = Gold Plated  
**5** = Color Coded Per MIL-Std. 681, System 1.

**Lead Length in Inches XX.X**

**No Letter** = Std. Yellow Chromate over Cadmium  
**N** = Electroless Nickel

**Mounting Types**  
**B** = No Hardware  
**F** = Float Mount  
**R** = Reverse Float Mount  
**K** = Jackscrew (Standard)  
**D** = Jackscrew (Short Neck Style)  
**L** = Jackscrew (Low Profile)  
**Q** = Screwlock  
**P** = Jackpost, Size 9 Thru 51 MIL-C-83513/5-07  
 Size 100 MIL-C-83513/5-17  
**C** = Jackpost, (Short Style)  
**M** = Jackscrew, Hex. Hd., Low Profile Sizes 9 thru 51 MIL-C-83513/5-02  
 Size 100 MIL-C-83513/5-12  
**S** = Jackscrew, Slot Hd., Low Profile Sizes 9 thru 51 MIL-C-83513/5-05  
 Size 100 MIL-C-83513/5-15  
**H** = Jackscrew, Hex. Hd., High Profile Sizes 9 thru 51 MIL-C-83513/5-03  
 Size 100 MIL-C-83513/5-13  
**J** = Jackscrew, Slot Hd., High Profile Sizes 9 thru 51 MIL-C-83513/5-06  
 Size 100 MIL-C-83513/5-16

**Ordering Example:** DC D M 37 P 6 E 2 18.0 K N