

# Micro-D TwistPin Connectors and Accessories

## Product Selection Guide

MIL-DTL-83513 Connectors  
*Section A*



Glenair COTS Micro-D Connectors  
*Section B*



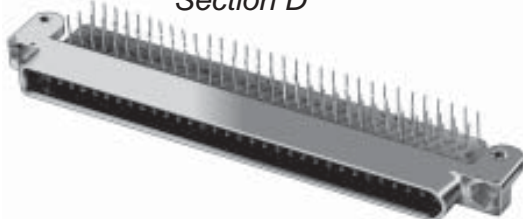
Micro-D Printed Circuit Board Connectors  
*Section B*



Micro-D Backshells and Accessories  
*Section C*



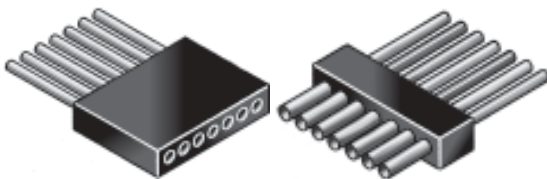
MicroEdgeboard Connectors  
*Section D*



MicroCircular Connectors  
*Section E*



MicroStrips  
*Section F*



Custom Interconnects and Assemblies  
*Section G*



# Choosing the right class of Micro-D for your high-reliability application:

## Military Standard, Commercial Off-The-Shelf (COTS), Special Application or Custom? Which is right for your application?

Glenair's complete Micro-D product line ranges from military standard Micro-D connectors and assemblies to Commercial-off-the-Shelf (COTS) interconnects and backshells. We also have complete in-house design and build services for custom microminiature connectors. Each class of connector maintains the same core technology: a .050 inch (1.27mm) contact spacing and the most advanced design of TwistPin contact technology.

**Military Standard:** If the application falls under the control of either US or UK military authority, then your connector selection should be limited to the plastic and metal shell Micro-D connectors which are presented in Section "A" of this catalog and are approved to MIL-DTL-83513, BS9523F0002, and BS9523F0013. These military standard connectors are supplied pre-wired or with solder cups and a limited range of finish and hardware options. The PCB mount Micro-D connectors presented in section "A" are also compatible with BS9523F0002 and MIL-DTL-83513 and are available in narrow, standard and vertical mount profiles. Many of these products are available for immediate, same-day shipment.

**Glenair Commercial-off-the-Shelf (COTS) Micro-D Solutions:** If the application environment allows or requires more flexibility in the specification of plating, hardware, wire size, wire color or other design elements, then you should take advantage of the COTS Micro-D product offerings presented in Sections "B and C". Glenair's Micro-D COTS product line includes commercial versions of MIL-DTL-83513 Micro-D connectors, solder cups, pigtail connectors, back-to-back cables, PCB's and a complete range of backshells, accessories and connector savers. Glenair is able to offer a wide range of special-order modifications to these parts, including material selections geared to high-temperature and space-grade applications. Many of these products are also available for immediate, same-day shipment.

**Special Application Microminiature Interconnects:** If your application requires unique packaging due to size, weight, environmental or application constraints then you should consider the MicroCircular, MicroEdgeboard, or Nano Connector solutions presented in Sections "D, E and F". These offerings are designed for use in motherboard/daughterboard applications, quick disconnect I/O systems and extremely high-density contact applications. These connectors are generally build to order products and carry longer lead times than our military standard or COTS solutions.

**Custom Micro-D Connectors and Assemblies:** One of the key benefits of the Micro-D is the ability to rapidly produce prototype and production quantities of unique designs without incurring prohibitive tooling and set-up charges. For customers faced with truly unique interconnect problems which cannot be addressed with more standard Micro-D solutions, Glenair offers a turnkey, custom design and build service. Our Micro-D custom engineering and design teams can provide a complete range of services—from the fabrication of made-to-order interconnect cable assemblies, to the machining of unique, one-of-a-kind connector shells. The versatility of the micro connector range allows us to accommodate almost any packaging requirement and affords the ability to terminate coax, multicore screens, ribbon cable and flexible circuits directly into the rear of virtually any connector design. At Glenair, We are leaders in the innovative use of new alloys, composites and polymers, and members of the research and development bodies which are writing the new standards for micro, circular and nano connectors. We have developed innovative approaches to solving high-density interconnect problems in space, high-temperature and other harsh environments. So, whenever you find the range of standard products and solutions does not meet your needs, we invite you to take advantage of Glenair's custom design and build capabilities presented in Section "G" of this catalog.

**Key Reference Tables:** are available in the fold-out back cover for your convenience. The entire catalog is also available on the Internet at [www.glenair.com](http://www.glenair.com).

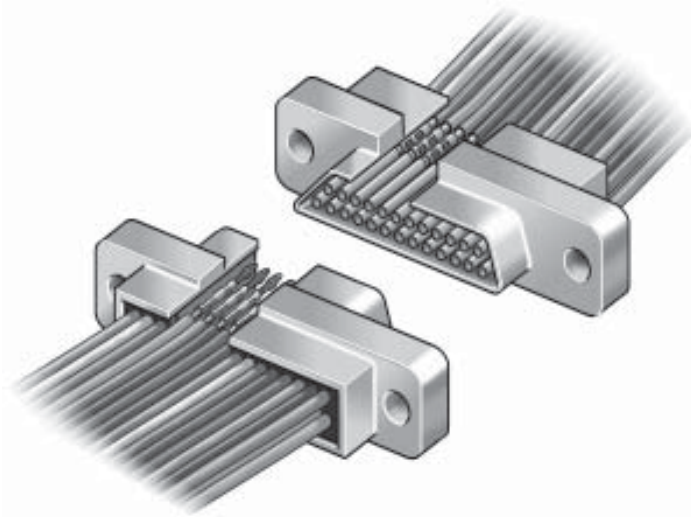
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### The Glenair Micro-D Connector



## Microway Systems: A Division of Glenair, Inc.

Microway Systems began in 1986 as a manufacturer of TwistPin contacts in partnership with Glenair's European interconnect operation and grew to become a full-line supplier of microminiature connectors and cable assemblies to the North American market. Throughout the company's history, Microway Systems remained thoroughly grounded in the engineering side of the micro business. The result is an organization known for superior products, outstanding technical capabilities and responsiveness to individual customer needs.

This Glenair product division occupies a 26,000 square foot manufacturing and engineering center in Illinois, supplemented by value-added assembly and cabling operations in Mansfield, England and in Glendale, California. The factory is fully equipped to address every micro-connector manufacturing and assembly process from in-house component manufacturing to final assembly. In addition to its role as the main production facility for Glenair's line of Mil-Spec and COTS micro-connectors, the division excels in the manufacture of custom micro-connectors, micro-circular and nano connectors, as well as made-to-order interconnect cable assemblies and harnesses.

## The Microway Systems TwistPin Contact

At Disney they are fond of saying "it all started with a mouse". At Microway, it clearly all started with the "TwistPin Contact System". Dr. Richard Zic, Microway Systems founder and Glenair Technical Director, formed Microway Systems in order to design and manufacture a superior TwistPin contact. Although various types of micro contacts meet the requirements of MIL-DTL-83513, independent testing has shown Microway's advanced TwistPin contact outperforms stamped and formed contacts—especially in critical contact retention and mating cycle tests.

Not only is the TwistPin more rugged than a stamped pin, it also provides a superior wire attachment, which translates to lower contact resistance. The TwistPin's sleeve allows a gas-tight crimp, ensuring excellent tensile strength and low circuit resistance. The development of the TwistPin contact has allowed a wide range of commercial and military customers to design extremely small interconnect wiring systems with no compromise in performance. Glenair's TwistPin contact has passed the stringent British Standards 9523 and 9524 for microminiature connector contacts.

The first step in TwistPin manufacturing is fabrication of the pin bundle. Three strands of copper wire are wound together to make a core, then seven strands of beryllium copper are wound over the core. The wire is heat treated, then cut into short lengths and welded at each end. The inert gas weld process utilized in the manufacture of the pin creates a hemispherical radius at both ends of the bundle.

Next, pin bundles and crimp sleeves are loaded into feeder bowls on an automatic assembly machine. The machine inserts the bundle into the sleeve and crimps the two parts together. The machine then deforms the wire bundle to create a precision bulge. Finally, the contact is machine inspected, and plated. This fully automated process allows Glenair to produce connectors which utilize superior TwistPin contacts as quickly as other manufacturers can produce conventional stamped contact connectors.

The difference is not lost on the many OEMs who have come to rely on Glenair as the supplier of choice for high reliability microminiature connectors. Ideally suited for applications which require reduced size and weight, Glenair's Microway System TwistPin connectors serve in missile systems, avionics, battlefield gear, radar and other demanding military applications. The rugged design also permits a select range of commercial applications, such as in satellite telecommunications systems, geophysical exploration, medical diagnostics and industrial equipment.



## Performance Specifications

### Performance Specifications

Glenair's Microway Systems TwistPin products feature a unique low force, rugged spring pin recessed into the insert to prevent contact damage. Epoxy sealing and interfacial seals provide environmental protection. The 3 amp contact system can be terminated to #24 through #30 AWG insulated wire. Liquid Crystal Polymer insulators and machined aluminum connector bodies withstand up to 125°C operating temperature for demanding environments such as those encountered in geophysical exploration. The rugged design and construction provides outstanding electrical continuity under extreme conditions of shock and vibration.

### The Glenair Microway Systems Commitment

Virtually everyone currently involved in military or commercial electronics is either already using micro-interconnects or soon will be. Every manufacturer of communications gear,

from space-based satellites to battlefield radar is looking to reduce the size and weight of their systems. Every prime or subcontractor involved in the production of high-reliability electronics is engineering applications around smaller and smaller circuit boards.

The design and production of a complete commercial and Mil-Spec micro product line, as well as the capability to tackle custom connector and cable harness work is not approached lightly or casually at Glenair's Microway Systems and UK Ltd product divisions. In fact, the commitment to meeting customer requirements forms the backbone of the entire company's work ethic, from engineering to production control. Glenair's commitment to solving customer interconnect problems is born out of a business philosophy which holds customer satisfaction, product quality, and technical innovation in the highest possible regard—a philosophy which makes Glenair your best choice for military standard, commercial-off-the-shelf, special application and custom micro interconnect solutions.

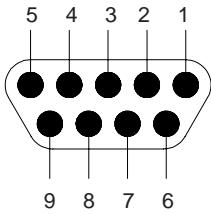
### CONNECTOR PERFORMANCE SPECIFICATIONS

PROPERTY	SPECIFICATION	TEST METHOD
Current Rating	3 Amp Maximum	
Dielectric Withstanding Voltage:		
Sea Level	900 VAC	MIL-STD-1344, Method 3001
70,000 Feet	300 VAC	
Contact Resistance	8 milliohms max.	MIL-STD-202, Method 307
Low Level Contact Resistance	32 milliohms max.	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, Para. 4.7.4
Unmating Force	(0.5 ounces min) X (# of contacts)	MIL-DTL-83513, Para. 4.7.4
Contact Retention	5 pounds minimum	MIL-STD-1344, Method 2007
Operating Temperature	-55° C. to +150° C.	
Durability	500 mating cycles minimum	MIL-DTL-83513, Para. 4.7.16
Salt Spray (Corrosion)	48 hours	MIL-STD-1344, Method 2004, Condition E
Outgassing	1.0 percent Total Mass Loss (TML) 0.1 percent Total Volatile Condensable Materials (TVCM)	SP-R-0022 (NASA)
Crimp Tensile Strength:		
Wire Type M22759/11	5 pounds minimum	MIL-DTL-83513, Para. 4.7.20
Wire Type M22759/33	10 pounds minimum	
Fluid Immersion	Perchloroethylene, 2 hours Lubricating oil (MIL-L-23649), 20 hrs. Coolanol 25, 1 hour	MIL-DTL-83513, Para. 4.7.18
Shock	50 G's	MIL-STD-1344, Method 2004, Condition E
Vibration	20 G's	MIL-STD-1344, Method 2005, Condition IV

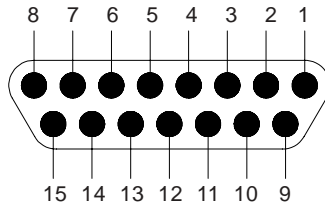
## Mating Face of Socket Connector

.050 inch Contact Spacing

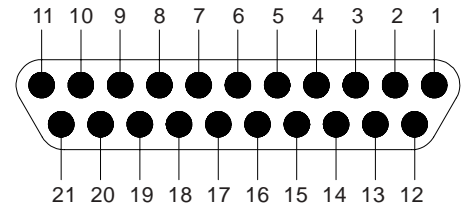
.043 inch Spacing Between Rows



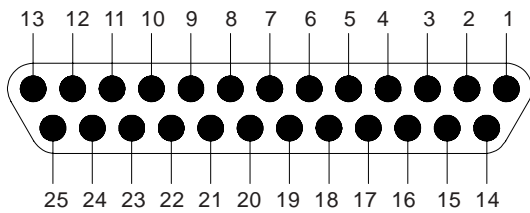
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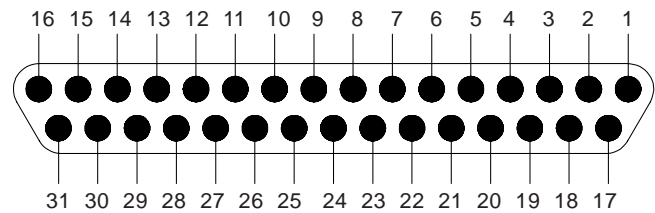
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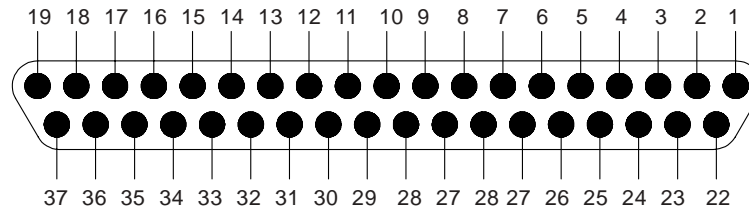
**21 Contacts**



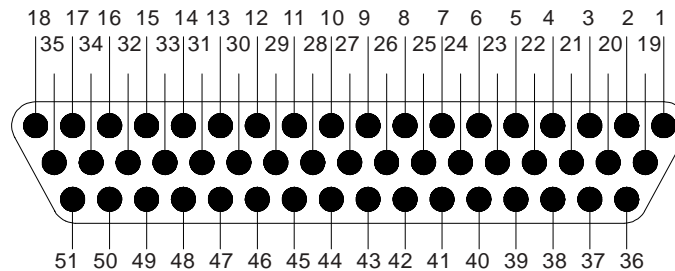
**25 Contacts**



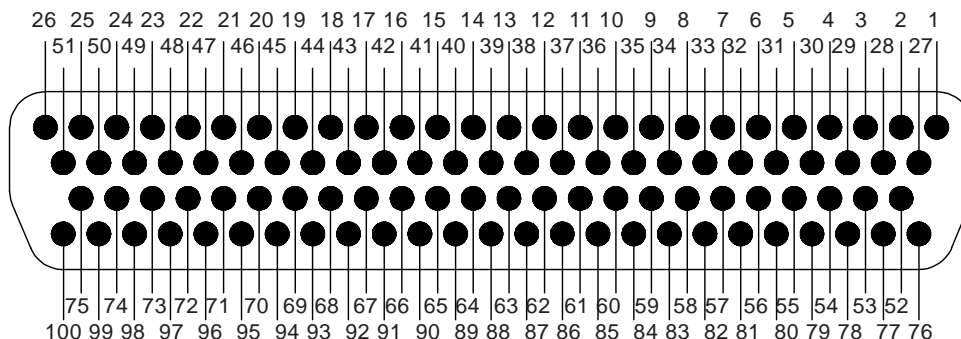
**31 Contacts**



**37 Contacts**



**51 Contacts**



**100 Contacts**

# Micro-D Panel Cut-Outs

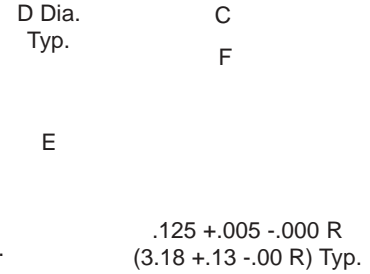
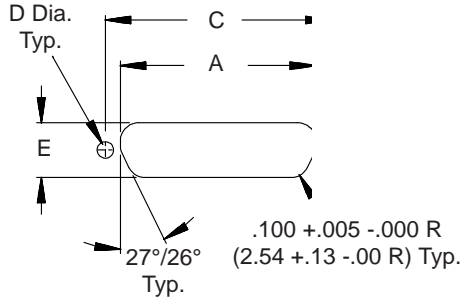
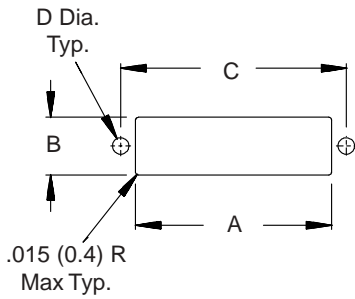


Introduction

## FRONT MOUNT

## REAR MOUNT SIZES 9 – 51

## REAR MOUNT SIZE 100



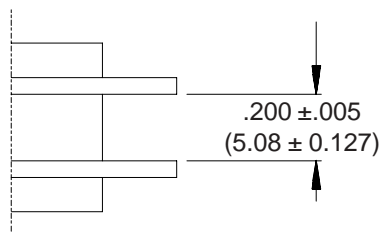
### MWDM METAL SHELL PANEL CUT-OUTS

Layout	A		B		C		D		E		F	
	+0.004 -0.000	(0.10) (0.00)	+0.004 -0.000	(0.10) (0.00)	±0.003	(.1)	+0.005 -0.000	(0.13) (0.00)	+0.004 -0.000	(0.10) (0.00)	+0.004 -0.000	(0.10) (0.00)
9	.408	(10.36)	.270	(6.86)	.565	(14.4)	.089	(2.26)	.256	(6.50)		
15	.558	(14.17)	.270	(6.86)	.715	(18.2)	.089	(2.26)	.256	(6.50)		
21	.708	(17.98)	.270	(6.86)	.865	(22.0)	.089	(2.26)	.256	(6.50)		
25	.808	(20.52)	.270	(6.86)	.965	(24.5)	.089	(2.26)	.256	(6.50)		
31	.958	(24.33)	.270	(6.86)	1.115	(28.3)	.089	(2.26)	.256	(6.50)		
37	1.108	(28.14)	.270	(6.86)	1.265	(32.1)	.089	(2.26)	.256	(6.50)		
51	1.058	(26.87)	.315	(8.00)	1.215	(30.9)	.089	(2.26)	.300	(7.62)		
100	1.450	(36.84)	.361	(9.17)	1.800	(45.7)	.117	(2.97)	.338	(8.58)	1.562	(39.58)

### MWD PLASTIC SHELL PANEL CUT-OUTS

Layout	A		B		C		D		E	
	+0.004 -0.000	(0.10) (0.00)	+0.004 -0.000	(0.10) (0.00)	±0.003	(.1)	+0.005 -0.000	(0.13) (0.00)	+0.004 -0.000	(0.10) (0.00)
9	.408	(10.36)	.172	(4.37)	.565	(14.4)	.089	(2.26)	.216	(5.49)
15	.558	(14.17)	.172	(4.37)	.715	(18.2)	.089	(2.26)	.216	(5.49)
21	.708	(17.98)	.172	(4.37)	.865	(22.0)	.089	(2.26)	.216	(5.49)
25	.808	(20.52)	.172	(4.37)	.965	(24.5)	.089	(2.26)	.216	(5.49)
31	.958	(24.33)	.172	(4.37)	1.115	(28.3)	.089	(2.26)	.216	(5.49)
37	1.108	(28.14)	.172	(4.37)	1.265	(32.1)	.089	(2.26)	.216	(5.49)
51	1.058	(26.87)	.215	(5.46)	1.215	(30.9)	.089	(2.26)	.259	(6.58)

### RECOMMENDED MATING DIMENSION

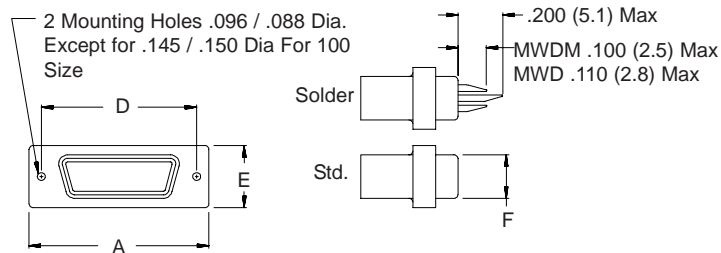
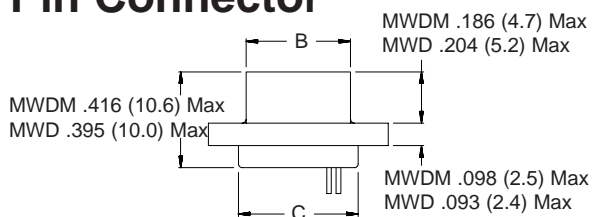


Metric dimensions (mm) are indicated in parentheses.

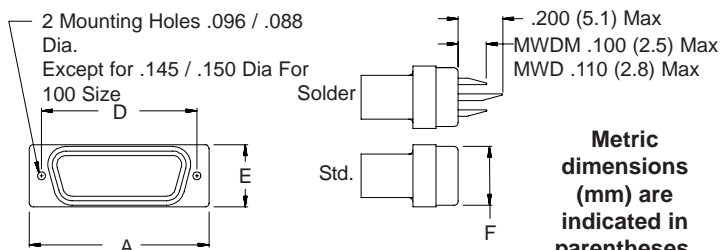
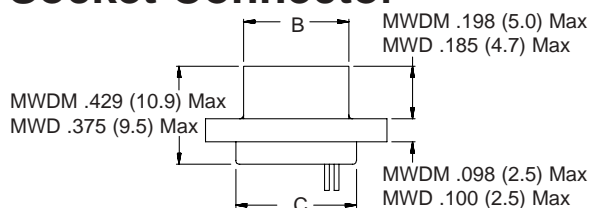


# Micro-D Standard Dimensions

## Pin Connector



## Socket Connector



**Metric dimensions (mm) are indicated in parentheses.**

### MWDM METAL SHELL DIMENSIONS

Layout	A ± .010 (0.3)	B Max	C ± .010 (0.3)	D ± .003 (0.1)	E ± .010 (0.3)	F Max
9P	.775 (19.7)	.333 (8.5)	.390 (9.9)	.565 (14.4)	.298 (7.6)	.270 (6.9)
9S	.775 (19.7)	.400 (10.2)	.390 (9.9)	.565 (14.4)	.298 (7.6)	.270 (6.9)
15P	.925 (23.5)	.483 (12.3)	.540 (13.7)	.715 (18.2)	.298 (7.6)	.270 (6.9)
15S	.925 (23.5)	.551 (14.0)	.540 (13.7)	.715 (18.2)	.298 (7.6)	.270 (6.9)
21P	1.075 (27.3)	.633 (16.1)	.690 (17.5)	.865 (22.0)	.298 (7.6)	.270 (6.9)
21S	1.075 (27.3)	.701 (17.8)	.690 (17.5)	.865 (22.0)	.298 (7.6)	.270 (6.9)
25P	1.175 (29.8)	.733 (18.6)	.790 (20.1)	.965 (24.5)	.298 (7.6)	.270 (6.9)
25S	1.175 (29.8)	.801 (20.3)	.790 (20.1)	.965 (24.5)	.298 (7.6)	.270 (6.9)
31P	1.325 (33.7)	.883 (22.4)	.930 (23.6)	1.115 (28.3)	.298 (7.6)	.270 (6.9)
31S	1.325 (33.7)	.951 (24.2)	.930 (23.6)	1.115 (28.3)	.298 (7.6)	.270 (6.9)
37P	1.475 (37.5)	1.033 (26.2)	1.090 (27.7)	1.265 (32.1)	.298 (7.6)	.270 (6.9)
37S	1.475 (37.5)	1.101 (28.0)	1.090 (27.7)	1.265 (32.1)	.298 (7.6)	.270 (6.9)
51P	1.425 (36.2)	.983 (25.0)	1.040 (26.4)	1.215 (30.9)	.341 (8.7)	.310 (7.9)
51S	1.425 (36.2)	1.051 (26.7)	1.040 (26.4)	1.215 (30.9)	.341 (8.7)	.310 (7.9)
100P	2.160 (54.9)	1.383 (35.1)	1.432 (36.4)	1.800 (45.7)	.384 (9.8)	.360 (9.1)
100S	2.160 (54.9)	1.451 (36.9)	1.432 (36.4)	1.800 (45.7)	.384 (9.8)	.360 (9.1)

### MWD PLASTIC SHELL DIMENSIONS

Layout	A ± .010 (0.3)	B Max	C ± .010 (0.3)	D ± .003 (0.1)	E ± .010 (0.3)	F Max
9P	.778 (19.8)	.292 (7.4)	.398 (10.1)	.565 (14.4)	.208 (5.3)	.173 (4.4)
9S	.778 (19.8)	.380 (9.7)	.398 (10.1)	.565 (14.4)	.208 (5.3)	.173 (4.4)
15P	.928 (23.6)	.442 (11.2)	.548 (13.9)	.715 (18.2)	.208 (5.3)	.173 (4.4)
15S	.928 (23.6)	.530 (13.5)	.548 (13.9)	.715 (18.2)	.208 (5.3)	.173 (4.4)
21P	1.070 (27.2)	.592 (15.0)	.698 (17.7)	.865 (22.0)	.208 (5.3)	.173 (4.4)
21S	1.070 (27.2)	.680 (17.3)	.698 (17.7)	.865 (22.0)	.208 (5.3)	.173 (4.4)
25P	1.178 (29.9)	.692 (17.6)	.798 (20.3)	.965 (24.5)	.208 (5.3)	.173 (4.4)
25S	1.178 (29.9)	.780 (19.8)	.798 (20.3)	.965 (24.5)	.208 (5.3)	.173 (4.4)
31P	1.328 (33.7)	.842 (21.4)	.948 (24.1)	1.115 (28.3)	.208 (5.3)	.173 (4.4)
31S	1.328 (33.7)	.930 (23.6)	.948 (24.1)	1.115 (28.3)	.208 (5.3)	.173 (4.4)
37P	1.478 (37.5)	.992 (25.2)	1.098 (27.9)	1.265 (32.1)	.208 (5.3)	.173 (4.4)
37S	1.478 (37.5)	1.080 (27.4)	1.098 (27.9)	1.265 (32.1)	.208 (5.3)	.173 (4.4)
51P	1.428 (36.3)	.942 (23.9)	1.048 (26.6)	1.215 (30.9)	.250 (6.4)	.220 (5.6)
51S	1.428 (36.3)	1.030 (26.2)	1.048 (26.6)	1.215 (30.9)	.250 (6.4)	.220 (5.6)

## MIL-DTL-83513: The Lasting Standard for High-Performance Miniaturized Rectangular Connectors

***From contact retention to environmental sealing, M83513 is the proven standard for high-reliability applications***

MIL-DTL-83513 is a joint services specification administered by the Defense Supply Center, Columbus, Ohio (DSCC). The original specification was released in 1985. Revision D, released in 1997, changed the document from "MIL-C-83513" to "MIL-PRF-83513". This change was made to adopt performance driven specifications and industry standards. In May 2002 the standard was finally upgraded to MIL-DTL-83513. The Mil-Spec covers both plastic and metal shell Micro-D connectors and three termination types: solder cup, pigtail assembly and printed circuit board connectors. Glenair is approved to produce the entire series of slash sheets.

Note: M83513/05 covers jackscrews and jackposts, which are covered on pages C-3 and C-4.

### PRODUCT OFFERINGS



**M83513 Solder Cup**  
Page A-2  
Slash 01, 02, 06, 07



**M83513 Pigtail Harness**  
Page A-3  
Slash 03, 04, 08, 09



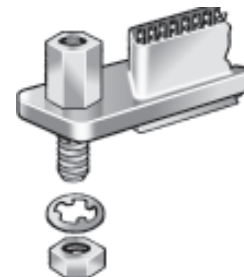
**M83513 Narrow Profile,  
Right Angle, PCBs**  
Page A-4  
Slash 10 through 15



**M83513 Standard Profile,  
Right Angle, Printed  
Circuit Boards**  
Page A-5  
Slash 16 through 21



**M83513 Vertical Mount,  
Printed Circuit Boards**  
Page A-6  
Slash 22 through 27



**M83513 Hardware**  
Pages C-3 and C-4  
Slash 05



# MIL-DTL-83513 Solder Cup / Slash 01, 02, 06, 07



M83513 Solder Cup Connectors are available in both plastic and metal shell versions. Metal shell connectors are recommended for environmental and EMI applications.

Solder cup contacts accommodate #26 AWG solid or stranded wire. The LCP insulators resist damage from excessive soldering heat. Connectors are fully potted with epoxy. Hardware is ordered separately.

### RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

### HOW TO ORDER

Prefix	Slash Number	Insert Arrangement	Shell Material/Finish
M83513/	<b>01</b> - Pin Connector, Metal Shell <b>02</b> - Socket Connector, Metal Shell <b>06</b> - Pin Connector, Plastic Shell <b>07</b> - Socket Connector, Plastic Shell	<b>A</b> - 9 Contacts <b>B</b> - 15 Contacts <b>C</b> - 21 Contacts <b>D</b> - 25 Contacts <b>E</b> - 31 Contacts <b>F</b> - 37 Contacts <b>G</b> - 51 Contacts <b>H</b> - 100 Contacts (Metal Shells Only)	<b>C</b> - Aluminum, Cadmium Plating <b>N</b> - Aluminum, Electroless Nickel <b>P</b> - Stainless Steel, Passivated  <b>Omit for Plastic Shell</b>
<b>Sample Part Number:</b>			
M83513/	02	— F	N

# MIL-DTL-83513 Pigtail Harness / Slash 03, 04, 08, 09



MIL-DTL-83513



M83513 pigtail harness connectors are supplied pre-wired and are fully potted. Two types of #26 AWG insulated wire are available: M22759/11 Teflon® wire for general purpose applications, and M22759/33 Tefzel® wire for aerospace applications. #25 AWG solid copper wire per QQ-W-343 is also available, both gold plated and tin plated.

## RELATED INFORMATION

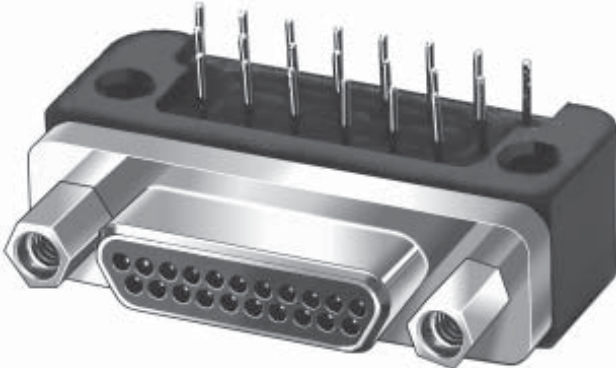
Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

Prefix	Slash Number	Insert Arrangement	Wire Type	Shell Material/Finish
M83513/	<b>03</b> - Pin Connector, Metal Shell <b>04</b> - Socket Connector, Metal Shell <b>08</b> - Pin Connector, Plastic Shell <b>09</b> - Socket Connector, Plastic Shell	<b>A</b> - 9 Contacts <b>B</b> - 15 Contacts <b>C</b> - 21 Contacts <b>D</b> - 25 Contacts <b>E</b> - 31 Contacts <b>F</b> - 37 Contacts <b>G</b> - 51 Contacts <b>H</b> - 100 Contacts, (Metal Shells Only)	<b>Teflon</b> M22759/11-26 Wire <b>01</b> - 18" White <b>02</b> - 36" White <b>03</b> - 18" 10 Color <b>04</b> - 36" 10 Color <b>13</b> - 72" White <b>14</b> - 72" 10 Color <b>Irradiated Tefzel</b> M22759/33-26 Wire <b>09</b> - 18" White <b>10</b> - 36" White <b>11</b> - 18" 10 Color <b>12</b> - 36" 10 Color <b>15</b> - 72" White <b>16</b> - 72" 10 Color <b>Solid Uninsulated Wire</b> <b>05</b> - .5" Gold Plated <b>06</b> - 1.0" Gold Plated <b>07</b> - .5" Tin Plated <b>08</b> - 1.0" Tin Plated	<b>C</b> - Aluminum, Yellow Chromate over Cadmium Plated <b>N</b> - Aluminum, Electroless Nickel Plated <b>P</b> - Stainless Steel, Passivated  Omit For Plastic Shell  * MIL-DTL-83513 recommends that nickel-plated shells and M22759/33 wire be used for space flight.
<b>Sample Part Number:</b>				
M83513/	04	— B	03	C

## MIL-DTL-83513 - Narrow Profile, Right Angle (90°), Printed Circuit Boards Slash / 10 through 15



Pin Connector Shown

M83513 narrow profile right angle printed circuit board connectors are the most popular type of board mount connector. Available in metal shell only, these connectors are potted with epoxy and are environmentally sealed.

Contact terminals are spaced on .100 inch by .100 inch centers for easy board mounting.

### RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Dimensions	B-15
PCB Mounting Layouts	Z-6,7

\* Available on the Inside Back  
Cover Fold-Out

### HOW TO ORDER

Prefix	Slash Number - Insert Arrangement	Printed Circuit Tail Length	Shell Material/Finish	Jackpost Option
M83513/	<b>10-A</b> - Pin Connector, 9 contacts <b>10-B</b> - Pin Connector, 15 contacts <b>10-C</b> - Pin Connector, 21 contacts <b>10-D</b> - Pin Connector, 25 contacts <b>10-E</b> - Pin Connector, 31 contacts <b>10-F</b> - Pin Connector, 37 contacts <b>11-G</b> - Pin Connector, 51 contacts <b>12-H</b> - Pin Connector, 100 contacts <b>13-A</b> - Socket Connector, 9 contacts <b>13-B</b> - Socket Connector, 15 contacts <b>13-C</b> - Socket Connector, 21 contacts <b>13-D</b> - Socket Connector, 25 contacts <b>13-E</b> - Socket Connector, 31 contacts <b>13-F</b> - Socket Connector, 37 contacts <b>14-G</b> - Socket Connector, 51 contacts <b>15-H</b> - Socket Connector, 100 contacts	<b>01</b> - .109 inches <b>02</b> - .140 inches <b>03</b> - .172 inches	<b>C</b> - Aluminum, Cadmium Plating <b>N</b> - Aluminum, Electroless Nickel <b>P</b> - Stainless Steel, Passivated  <b>Omit for Plastic Shell</b>	<b>N</b> - No jackposts or threaded insert <b>P</b> - Jackpost attached <b>T</b> - Threaded insert <b>W</b> - Jackpost and threaded insert
<b>Sample Part Number:</b>				
M83513/	10-C	01	N	P

# MIL-DTL-83513 - Standard Profile, Right Angle (90°), Printed Circuit Boards Slash / 16 through 21



MIL-DTL-  
83513

M83513 standard profile right angle printed circuit board connectors are potted with epoxy and are environmentally sealed. Available in eight contact arrangements, these connectors feature aluminum shells and fluorousilicone interfacial seals.

Contact terminals are spaced on .100 inch by .100 inch centers for easy board mounting.



Pin Connector Shown

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Dimensions	B-13
PCB Mounting Layouts	Z-4,5

\* Available on the Inside Back  
Cover Fold-Out

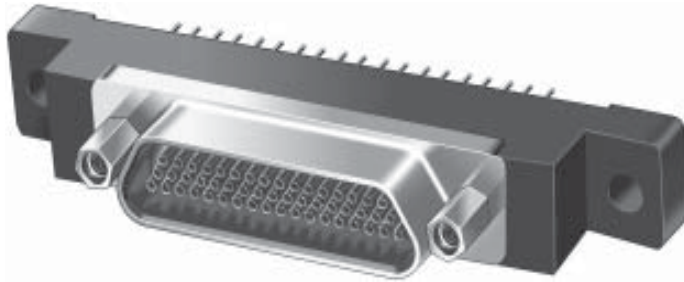
## HOW TO ORDER

Prefix	Slash Number - Insert Arrangement	Printed Circuit Tail Length	Shell Material/Finish	Jackpost Option
M83513/	<b>16-A</b> - Pin Connector, 9 contacts <b>16-B</b> - Pin Connector, 15 contacts <b>16-C</b> - Pin Connector, 21 contacts <b>16-D</b> - Pin Connector, 25 contacts <b>16-E</b> - Pin Connector, 31 contacts <b>16-F</b> - Pin Connector, 37 contacts <b>17-G</b> - Pin Connector, 51 contacts <b>18-H</b> - Pin Connector, 100 contacts <b>19-A</b> - Socket Connector, 9 contacts <b>19-B</b> - Socket Connector, 15 contacts <b>19-C</b> - Socket Connector, 21 contacts <b>19-D</b> - Socket Connector, 25 contacts <b>19-E</b> - Socket Connector, 31 contacts <b>19-F</b> - Socket Connector, 37 contacts <b>20-G</b> - Socket Connector, 51 contacts <b>21-H</b> - Socket Connector, 100 contacts	<b>01</b> - .109 inches <b>02</b> - .140 inches <b>03</b> - .172 inches	<b>C</b> - Aluminum, Cadmium Plating <b>N</b> - Aluminum, Electroless Nickel <b>P</b> - Stainless Steel, Passivated  <b>Omit for Plastic Shell</b>	<b>N</b> - No jackposts or threaded insert <b>P</b> - Jackpost attached <b>T</b> - Threaded insert <b>W</b> - Jackpost and threaded insert
<b>Sample Part Number:</b>				
M83513/	16-F	01	N	P

# MIL-DTL-83513 - Vertical Mount, Printed Circuit Board Slash / 22 through 27

M83513 vertical mount printed circuit board connectors are potted with epoxy and are environmentally sealed. Available in eight contact arrangements, these connectors feature aluminum shells and flourosilicone interfacial seals.

Contact terminals are spaced on .100 inch by .100 inch centers for easy board mounting.



Socket Connector Shown

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Dimensions	B-11
PCB Mounting Layouts	Z-2,3

\* Available on the Inside Back  
Cover Fold-Out

## HOW TO ORDER

Prefix	Slash Number - Insert Arrangement	Printed Circuit Tail Length	Shell Material/Finish	Jackpost Option
M83513/	<b>22-A</b> - Pin Connector, 9 contacts <b>22-B</b> - Pin Connector, 15 contacts <b>22-C</b> - Pin Connector, 21 contacts <b>22-D</b> - Pin Connector, 25 contacts <b>22-E</b> - Pin Connector, 31 contacts <b>22-F</b> - Pin Connector, 37 contacts <b>23-G</b> - Pin Connector, 51 contacts <b>24-H</b> - Pin Connector, 100 contacts <b>25-A</b> - Socket Connector, 9 contacts <b>25-B</b> - Socket Connector, 15 contacts <b>25-C</b> - Socket Connector, 21 contacts <b>25-D</b> - Socket Connector, 25 contacts <b>25-E</b> - Socket Connector, 31 contacts <b>25-F</b> - Socket Connector, 37 contacts <b>26-G</b> - Socket Connector, 51 contacts <b>27-H</b> - Socket Connector, 100 contacts	<b>01</b> - .109 inches <b>02</b> - .140 inches <b>03</b> - .172 inches	<b>C</b> - Aluminum, Cadmium Plating <b>N</b> - Aluminum, Electroless Nickel <b>P</b> - Stainless Steel, Passivated  <b>Omit for Plastic Shell</b>	<b>N</b> - No jackposts or threaded insert <b>P</b> - Jackpost attached <b>T</b> - Threaded insert <b>W</b> - Jackpost and threaded insert
<b>Sample Part Number:</b>				
<b>M83513/</b>	<b>23-G</b>	<b>01</b>	<b>N</b>	<b>P</b>

Metric dimensions (mm) are indicated in parentheses.

# COTS Micro-D Connectors General Information/Selection Guide



*Glenair's line of COTS Micro-D Connectors are available with a wide range of options not supported by the M83513 standard.*

*The products are ideally suited for missiles, satellites, space vehicles, robotics, telecommunications gear and geophysical applications.*

## PRODUCT FEATURES

- .050 inch Contact Spacing
- Rugged Construction for Demanding Applications
- 9 to 100 Pins—Gold Plated TwistPin Construction
- Environmentally Sealed (Metal Shell Versions)
- 3 Amp Contact Current Rating
- High temperature LCP Insulator Material
- #24 through #30 AWG Wire Accomodation
- Three Termination Styles
  - Solder Cup
  - Pigtail Cable Assemblies
  - Printed Circuit Board

## PRODUCT OFFERINGS



**Metal Shell Micro-D  
Solder Cups**  
Page B-2



**Metal Shell Micro-D Pigtail  
Connectors**  
Pages B-3, 4



**Plastic Shell Micro-D  
Solder Cups**  
Pages B-6



**Back to Back Cables**  
Page B-5



**Plastic Shell Micro-D Pigtail  
Connectors**  
Pages B-7, 8



**Printed Circuit Board  
Connectors**  
Pages B-9 to B-18





# COTS Micro-D Solder Cup Metal Shell

Solder Cup Micro-D Connectors are ideal for applications where pigtail harnesses are impractical or field termination is required. The high temperature LCP insulator resists damage from soldering heat. Solder cup contacts are gold plated and factory installed with epoxy.

- #26 AWG Wire Accomodation
- Environmentally Sealed
- 9 Through 100 Contacts
- Precision Machined Solder Cups



### RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back  
Cover Fold-Out

### HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Termination	Hardware Table V*
<b>MWDM</b>	1 – Cadmium	L – LCP	9	P – Pin	<b>S - Solder Cup</b>	<b>B</b>
	2 – Nickel		15	S – Socket		<b>P</b>
	4 – Black Anodize	(Liquid	21			<b>L</b>
	5 – Gold	Crystal	25			<b>K</b>
	6 – Chem Film	Polymer)	31			<b>M</b>
			37			<b>S</b>
			51			<b>M1</b>
		100		<b>S1</b>		
					<b>F</b>	
					<b>R</b>	
<b>Sample Part Number:</b>						
<b>MWDM</b>	<b>2</b>	<b>L</b>	<b>—</b>	<b>37</b>	<b>S</b>	<b>S</b>
						<b>B</b>

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

# COTS Micro-D Pigtails - Insulated Wire Metal Shell



COTS Micro Connectors



Factory-terminated Micro-D connectors are available with three standard wire types for commercial, military and aerospace needs. These single-ended pigtail cable assemblies are 100% tested and fully potted.

- #24 Through #30 AWG
- Environmentally Sealed
- 9 Through 100 Contacts
- Precision Crimp Terminations

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length	Hardware Table V*				
<b>MWDM</b>	1 - Cadmium	L - LCP  (Liquid Crystal Polymer)	9	P - Pin	4 - 24	E - Std	1 - White	Length in 1 Inch Increments	<b>B</b>				
	2 - Nickel		15	S - Socket	6 - 26	K - Mil	<b>P</b>						
	4 - Black Anodize		21		8 - 28	J - Space				<b>L</b>			
	5 - Gold		25		2 - Yellow	5 - Mil-Std-681 Striped					<b>K</b>		
	6 - Chem Film		31									7 - 10 Color Repeat	<b>J</b>
			37										
	51	<b>S</b>											
	100		<b>M1</b>										
								<b>S1</b>					
								<b>F</b>					
								<b>R</b>					
<b>Sample Part Number:</b>													
<b>MWDM</b>	<b>1</b>	<b>L</b>	<b>15</b>	<b>S</b>	<b>6</b>	<b>K</b>	<b>7</b>	<b>24</b>	<b>B</b>				

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION



# COTS Micro-D Pigtails - Uninsulated Wire Metal Shell



Micro-D Connectors are available with solid copper gold-plated leads for a variety of terminations. This solid wire is crimped to the contacts and potted. Uses include splicing applications, flex circuit, and specially printed circuit boards.

- #24, #25, and #26 AWG Wire Accomodation
- Environmentally Sealed
- 9 Through 100 Contacts
- Gold Plated Leads

### RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

### HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Wire Gage (AWG)	Wire Type	Wire Finish	Wire Length	Hardware Table V*
MWDM	1 – Cadmium	L – LCP (Liquid Crystal Polymer)	9	P – Pin	4 - 24	C - Solid Copper QQ-S-343 Type S	4 - Gold Plated	Length in Inches (.xxx)  Example: For 1/2 inch leads use .500	B
	2 – Nickel		15	S – Socket	5 - 25				P
	4 – Black Anodize		21		6 - 26				L
	5 – Gold		25						K
	6 – Chem Film		31						M
			37						S
			51						M1
	100			S1					
					F				
						R			
<b>Sample Part Number:</b>									
MWDM	1	L	— 37	P —	5	C	4 —	.500	B

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

# COTS Micro-D Back-To-Back Cables Metal Shell



COTS Micro  
Connectors



Micro-D Connectors are available as back-to-back complete assemblies. These cables can be used as connector savers or gender changers. These assemblies are wired point-to-point (contact 1 to contact 1, etc.).

- #26 AWG Wire Accomodation
- Environmentally Sealed
- 9 Through 100 Contacts

Note: To specify a back-to-back cable with jackposts on one end and jackscrews on the other, order less hardware (option B) and order hardware separately.

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Connector Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Overall Length	Hardware Table V*
<b>MWDM</b>	1 – Cadmium	L – LCP (Liquid Crystal Polymer)	9	<b>GP</b> – Pin to Pin Connector	6 - 26	<b>E</b> - Std <b>K</b> - Mil <b>J</b> - Space	1 - White	Length in 1 Inch Increments  (2 inch minimum)	<b>B</b> <b>P</b> <b>L</b> <b>K</b> <b>M</b> <b>S</b> <b>M1</b> <b>S1</b> <b>F</b> <b>R</b>
	2 – Nickel		15						
	4 – Black Anodize		21						
	5 – Gold		25						
	6 – Chem Film		31	<b>GS</b> – Socket to Socket Connector					
			37						
	51	<b>CS</b> - Pin to Socket Connector							
	100								
<b>Sample Part Number:</b> <b>MWDM</b>	<b>5</b>	<b>L</b>	<b>31</b>	<b>GS</b>	<b>6</b>	<b>K</b>	<b>1</b>	<b>2</b>	<b>B</b>

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION



# COTS Micro-D Solder Cup Plastic Shell

Solder Cup Micro-D Plastic Connectors are ideal for applications where cost is a prime consideration. The high temperature LCP insulator resists damage from soldering heat.

- #26 AWG Wire Accomodation
- Economical Plastic Body, Non-Environmental
- 9 Through 51 Contacts
- Precision Machined Solder Cups



Note: Micro-D plastic connectors are not intermatable with metal shell connectors.

### RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

### HOW TO ORDER

Conn. Series	Housing Material Table I*	No. of Contacts	Contact Type	Termination	Hardware Table V*
MWD	L – LCP (Liquid Crystal Polymer)	9 15 21 25 31 37 51	P – Pin S – Socket	S - Solder Cup	B P L K M S M1 S1 F R
<b>Sample Part Number:</b>					
MWD	L	— 37	P	S	B
<b>* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION</b>					

# COTS Micro-D Pigtails - Insulated Wire Plastic Shell



Factory-terminated Micro-D connectors are available with three standard wire types for commercial, military and aerospace needs. All plastic bodies offer an economical alternative to Micro-D metal shell versions.

- #24 thru #30 AWG
- Economical, non-environmental
- 9 thru 51 contacts
- Precision crimp terminations

Note: Micro-D plastic connectors are not intermatable with metal shell connectors.



## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

Conn. Series	Housing Material Table I*	No. of Contacts	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length	Hardware Table V*
MWD	L – LCP (Liquid Crystal Polymer)	9 15 21 25 31 37 51	P – Pin S – Socket	4 - 24 6 - 26 8 - 28 0 - 30	E - Std K - Mil J - Space	1 - White  2 - Yellow  5 - Mil-STD-681 Striped  7 - 10 Color Repeat	Length in 1 Inch Increments	B P L K M S M1 S1 F R

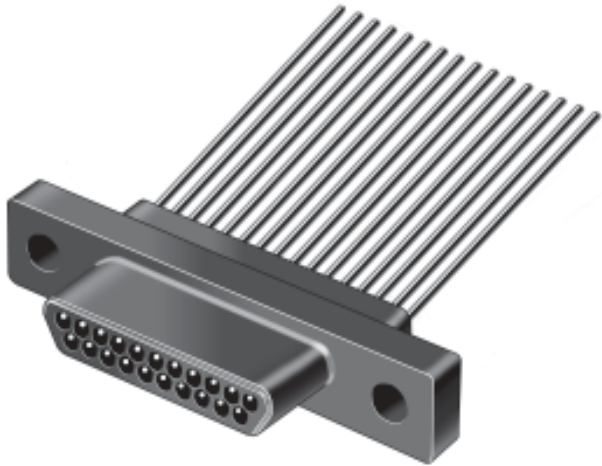
Sample Part Number:

MWD L — 9 P — 6 K 1 — 24 B

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION



# COTS Micro-D Pigtails - Uninsulated Wire Plastic Shell



Micro-D Connectors are available with solid copper gold-plated leads for a variety of terminations. This solid wire is crimped to the contacts and potted. Uses include splicing applications, flex circuit, and specially printed circuit boards.

- #24, #25, and #26 AWG Wire Accomodation
- Economical, Non-Environmental
- 9 Through 51 Contacts
- Gold Plated Leads

Note: Micro-D plastic connectors are not intermatable with metal shell connectors.

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Standard Dimensions	10
Jacking Hardware Kits	C-3,4

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

Conn. Series	Housing Material Table I*	No. of Contacts	Contact Type	Wire Gage (AWG)	Wire Type	Wire Finish	Wire Length	Hardware Table V*
MWD	L – LCP (Liquid Crystal Polymer)	9 15 21 25 31 37 51	P – Pin S – Socket	4 - 24 5 - 25 6 - 26	C - Solid Copper QQ-S-343 Type S	4 - Gold Plated	Length in Inches (.xxx)  Example: For 1/2 inch leads, use .500	B P L K M S M1 S1 F R

Sample Part Number:

MWD L — 21 P — 5 C 4 — .500 M1

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

# COTS Printed Circuit Board Connectors General Information/Selection Guide



COTS Micro  
Connectors

*Glenair's microminiature printed circuit board connectors are designed for interconnection of miniaturized inside-the-box circuitry to external data transmission cables.*

*Two layouts, .100 inch and .75 inch, are available in right angle and vertical mount configurations.*

## PRODUCT FEATURES

- .100 inch or .75 inch Grid Spacing
- Rugged Construction for Demanding Applications
- 9 to 100 Pins—Gold Plated TwistPin Construction
- Environmentally Sealed
- 3 Amp Contact Current Rating
- High temperature LCP Insert Material
- Pre-Tinned Tails
- Range of Plating Options Including
  - Gold
  - Chem Film
  - Nickel

## .100 INCH TERMINAL SPACING



*Vertical Mount (Straight) Printed Circuit Board Connectors*



*Right Angle (90°), Wide Style Printed Circuit Board Connectors*



*Right Angle (90°), Narrow Profile Printed Circuit Board Connectors*

## .075 INCH TERMINAL SPACING



*Vertical Mount (Straight) Printed Circuit Board Connectors*



*Right Angle (90°), Printed Circuit Board Connectors*





# COTS Micro-D Vertical Mount (Straight) Printed Circuit Board Connectors Metal Shell, .100 Inch Pitch

- .100 Inch by .100 Inch Grid
- .020 Inch Diameter Pre-Tinned Tails
- Environmentally Sealed
- 9 through 100 Contacts

See Appendix for layout information.



## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

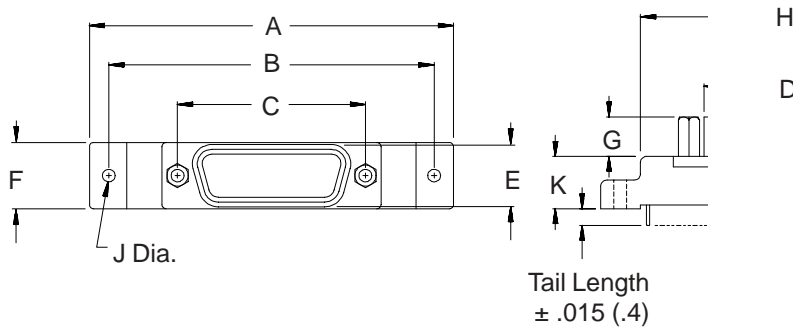
Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Termination Style	Jackpost Option	Threaded Insert Option	Tail Length
MWDM	1 – Cadmium	L – LCP (Liquid Crystal Polymer)	9	P – Pin S – Socket	BS - Vertical Mount (Straight)	P R1 R2 R3 R4 (See Table Below) (Omit for None)	T - Threaded Insert in Board Mount Hole (Omit for None)	.110
	2 – Nickel		15					.150
	4 – Black Anodize		21					.190
	5 – Gold		25					.250
	6 – Chem Film		31					Other Lengths Available Upon Request
			37					
		51						
		100						
<b>Sample Part Number:</b>								
MWDM	1	L	— 51	P	BS	P	— T	.110

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

## JACKPOST OPTION

- |  |  |
|--|--|
| P - Standard Jackpost, Non-Removable           | R3 - Jackpost for Rear-Mounting to .062" Panel |
| R1 - Jackpost for Rear-Mounting to .032" Panel | R4 - Jackpost for Rear-Mounting to .093" Panel |
| R2 - Jackpost for Rear-Mounting to .047" Panel | OMIT FOR NONE                                  |

# COTS Micro-D Vertical Mount (Straight) Printed Circuit Board Connectors Metal Shell, .100 Inch Pitch



.165  
(4.2)  
Max.

.020 (.5)  
±.002 (.1)

## DIMENSIONS

Layout	A Max	B ± .007 (0.2)	C ± .005 (0.1)	D Max	E Ref
9P	1.390 (35.3)	1.150 (29.2)	.565 (14.4)	.333 (8.5)	.185 (4.7)
9S	1.390 (35.3)	1.150 (29.2)	.565 (14.4)	.400 (10.2)	.245 (6.2)
15P	1.390 (35.3)	1.150 (29.2)	.715 (18.2)	.483 (12.3)	.185 (4.7)
15S	1.390 (35.3)	1.150 (29.2)	.715 (18.2)	.551 (14.0)	.245 (6.2)
21P	1.690 (42.9)	1.450 (36.8)	.865 (22.0)	.633 (16.1)	.185 (4.7)
21S	1.690 (42.9)	1.450 (36.8)	.865 (22.0)	.701 (17.8)	.245 (6.2)
25P	1.740 (44.2)	1.500 (38.1)	.965 (24.5)	.733 (18.6)	.185 (4.7)
25S	1.740 (44.2)	1.500 (38.1)	.965 (24.5)	.801 (20.3)	.245 (6.2)
31P	2.040 (51.8)	1.800 (45.7)	1.115 (28.3)	.883 (22.4)	.185 (4.7)
31S	2.040 (51.8)	1.800 (45.7)	1.115 (28.3)	.951 (24.1)	.245 (6.2)
37P	2.340 (59.4)	2.100 (53.3)	1.265 (32.1)	1.033 (26.2)	.185 (4.7)
37S	2.340 (59.4)	2.100 (53.3)	1.265 (32.1)	1.101 (27.9)	.245 (6.2)
51P	2.270 (57.7)	2.000 (50.8)	1.215 (30.9)	.983 (25.0)	.230 (5.8)
51S	2.270 (57.7)	2.000 (50.8)	1.215 (30.9)	1.051 (26.7)	.290 (7.4)
100P	3.240 (82.3)	2.800 (71.1)	1.800 (45.7)	1.383 (35.1)	.271 (6.9)
100S	3.240 (82.3)	2.800 (71.1)	1.800 (45.7)	1.451 (36.9)	.330 (8.4)

Layout	F Max	G Max	H Max	J Dia. ± .005 (0.1)	K Max
9P	.308 (7.8)	.186 (4.7)	.785 (19.9)	.096 (2.4)	.355 (9.0)
9S	.308 (7.8)	.204 (5.2)	.785 (19.9)	.096 (2.4)	.355 (9.0)
15P	.308 (7.8)	.186 (4.7)	.935 (23.7)	.096 (2.4)	.355 (9.0)
15S	.308 (7.8)	.204 (5.2)	.935 (23.7)	.096 (2.4)	.355 (9.0)
21P	.308 (7.8)	.186 (4.7)	1.170 (29.7)	.096 (2.4)	.355 (9.0)
21S	.308 (7.8)	.204 (5.2)	1.170 (29.7)	.096 (2.4)	.355 (9.0)
25P	.308 (7.8)	.186 (4.7)	1.320 (33.5)	.096 (2.4)	.355 (9.0)
25S	.308 (7.8)	.204 (5.2)	1.320 (33.5)	.096 (2.4)	.355 (9.0)
31P	.308 (7.8)	.186 (4.7)	1.620 (41.1)	.096 (2.4)	.355 (9.0)
31S	.308 (7.8)	.204 (5.2)	1.620 (41.1)	.096 (2.4)	.355 (9.0)
37P	.308 (7.8)	.186 (4.7)	1.920 (48.8)	.096 (2.4)	.355 (9.0)
37S	.308 (7.8)	.204 (5.2)	1.920 (48.8)	.096 (2.4)	.355 (9.0)
51P	.351 (8.9)	.186 (4.7)	1.820 (46.2)	.096 (2.4)	.355 (9.0)
51S	.351 (8.9)	.204 (5.2)	1.820 (46.2)	.096 (2.4)	.355 (9.0)
100P	.394 (10.0)	.186 (4.7)	2.670 (67.8)	.145 (3.7)	.550 (14.0)
100S	.394 (10.0)	.204 (5.2)	2.670 (67.8)	.145 (3.7)	.550 (14.0)

Metric dimensions (mm) are indicated in parentheses.



# COTS Micro-D Right Angle (90°), Wide Style Printed Circuit Board Connectors Metal Shell, .100 Inch Pitch



- .100 Inch by .100 Inch Grid
- .020 Inch Diameter Pre-Tinned Tails
- Environmentally Sealed
- 9 Through 100 Contacts

See Appendix for layout information.

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9

\* Available on the Inside Back  
Cover Fold-Out

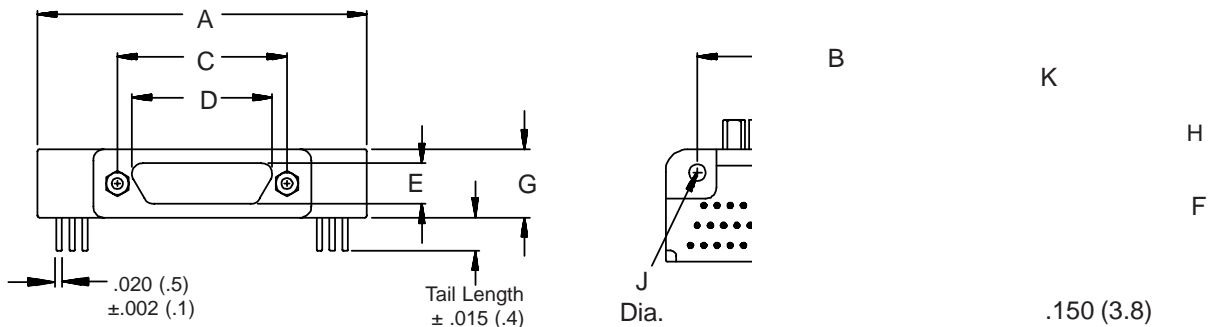
## HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Termination Style	Jackpost Option	Threaded Insert Option	Tail Length
MWDM	1 – Cadmium	L – LCP (Liquid Crystal Polymer)	9	P – Pin S – Socket	BR - Right Angle (90°) Wide Style	P R1 R2 R3 R4 (See Table Below) (Omit for None)	T - Threaded Insert in Board Mount Hole (Omit for None)	.110
	2 – Nickel		15					.150
	4 – Black Anodize		21					.190
	5 – Gold		25					.250
	6 – Chem Film		31					
			37					
	51							
	100							
<b>Sample Part Number:</b>								
MWDM	1	L	— 37	P	BR	P	— T	.110
<b>* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION</b>								

## JACKPOST OPTION

- |  |  |
|--|--|
| P - Standard Jackpost, Non-Removable           | R3 - Jackpost for Rear-Mounting to .062" Panel |
| R1 - Jackpost for Rear-Mounting to .032" Panel | R4 - Jackpost for Rear-Mounting to .093" Panel |
| R2 - Jackpost for Rear-Mounting to .047" Panel | OMIT FOR NONE                                  |

# COTS Micro-D Right Angle (90°), Wide Style Printed Circuit Board Connectors Metal Shell, .100 Inch Pitch



## DIMENSIONS

Layout	A	B	C	D	E
	Max	± .007 (0.1)	± .005 (0.1)	Max	Max
9P	1.390 (35.3)	1.150 (29.2)	.565 (14.4)	.333 (8.5)	.185 (4.7)
9S	1.390 (35.3)	1.150 (29.2)	.565 (14.4)	.400 (10.2)	.245 (6.2)
15P	1.540 (39.1)	1.300 (33.0)	.715 (18.2)	.483 (12.3)	.185 (4.7)
15S	1.540 (39.1)	1.300 (33.0)	.715 (18.2)	.551 (14.0)	.245 (6.2)
21P	1.690 (42.9)	1.450 (36.8)	.865 (22.0)	.633 (16.1)	.185 (4.7)
21S	1.690 (42.9)	1.450 (36.8)	.865 (22.0)	.701 (17.8)	.245 (6.2)
25P	1.790 (45.5)	1.550 (39.4)	.965 (24.5)	.733 (18.6)	.185 (4.7)
25S	1.790 (45.5)	1.550 (39.4)	.965 (24.5)	.801 (20.3)	.245 (6.2)
31P	2.040 (51.8)	1.800 (45.7)	1.115 (28.3)	.883 (22.4)	.185 (4.7)
31S	2.040 (51.8)	1.800 (45.7)	1.115 (28.3)	.951 (24.1)	.245 (6.2)
37P	2.340 (59.4)	2.100 (53.3)	1.265 (32.1)	1.033 (26.2)	.185 (4.7)
37S	2.340 (59.4)	2.100 (53.3)	1.265 (32.1)	1.101 (27.9)	.245 (6.2)
51P	1.875 (47.6)	1.600 (40.6)	1.215 (30.9)	.998 (25.3)	.230 (5.8)
51S	1.875 (47.6)	1.600 (40.6)	1.215 (30.9)	1.051 (26.7)	.290 (7.4)
100P	2.780 (70.6)	2.500 (63.5)	1.800 (45.7)	1.383 (35.1)	.271 (6.9)
100S	2.780 (70.6)	2.500 (63.5)	1.800 (45.7)	1.451 (36.9)	.330 (8.4)

Layout	F	G	H	J Dia	K Dia.
	Max	Max	Max	± .003 (0.1)	± .015 (0.4)
9P	.465 (11.8)	.308 (7.8)	.186 (4.7)	.096 (2.4)	.125 (3.2)
9S	.465 (11.8)	.308 (7.8)	.204 (5.2)	.096 (2.4)	.125 (3.2)
15P	.465 (11.8)	.308 (7.8)	.186 (4.7)	.096 (2.4)	.125 (3.2)
15S	.465 (11.8)	.308 (7.8)	.204 (5.2)	.096 (2.4)	.125 (3.2)
21P	.465 (11.8)	.308 (7.8)	.186 (4.7)	.096 (2.4)	.125 (3.2)
21S	.465 (11.8)	.308 (7.8)	.204 (5.2)	.096 (2.4)	.125 (3.2)
25P	.465 (11.8)	.308 (7.8)	.186 (4.7)	.096 (2.4)	.125 (3.2)
25S	.465 (11.8)	.308 (7.8)	.204 (5.2)	.096 (2.4)	.125 (3.2)
31P	.465 (11.8)	.308 (7.8)	.186 (4.7)	.096 (2.4)	.125 (3.2)
31S	.465 (11.8)	.308 (7.8)	.204 (5.2)	.096 (2.4)	.125 (3.2)
37P	.465 (11.8)	.308 (7.8)	.186 (4.7)	.096 (2.4)	.125 (3.2)
37S	.465 (11.8)	.308 (7.8)	.204 (5.2)	.096 (2.4)	.125 (3.2)
51P	.565 (14.4)	.351 (8.9)	.186 (4.7)	.096 (2.4)	.125 (3.2)
51S	.565 (14.4)	.351 (8.9)	.204 (5.2)	.096 (2.4)	.125 (3.2)
100P	.665 (16.9)	.394 (10.0)	.186 (4.7)	.125 (3.2)	.225 (5.7)
100S	.665 (16.9)	.394 (10.0)	.204 (5.2)	.125 (3.2)	.225 (5.7)

Metric dimensions (mm) are indicated in parentheses.

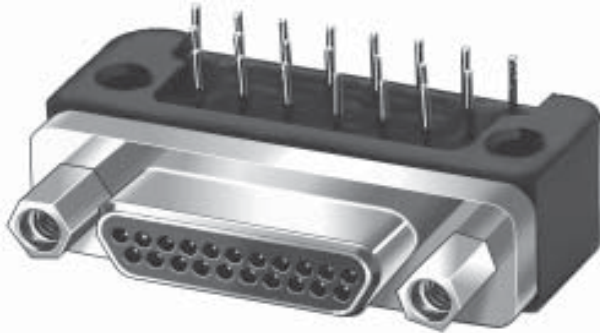
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CAGE Codes 06324/0CA77

Printed in U.S.A.



# Micro-D Right Angle (90°), Narrow Profile Printed Circuit Board Connectors Metal Shell, .100 Inch Pitch



- .100 Inch by .100 Inch Grid
- .020 Inch Diameter Pre-Tinned Tails
- Environmentally Sealed
- 9 Through 100 Contacts

See Appendix for layout information.

## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9

\* Available on the Inside Back Cover Fold-Out

## HOW TO ORDER

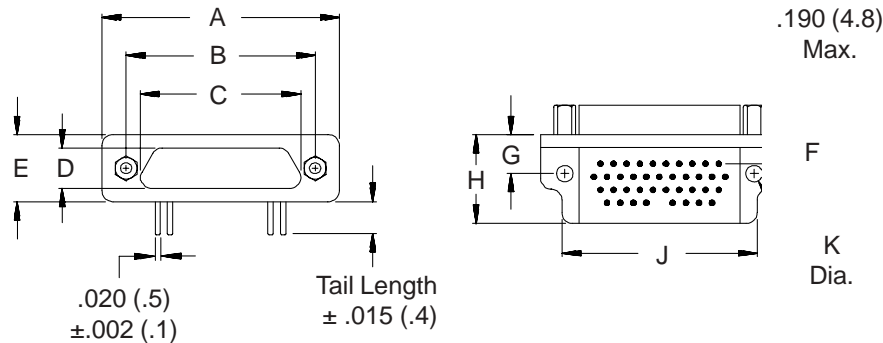
Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Contact Type	Termination Style	Jackpost Option	Threaded Insert Option	Tail Length
MWDM	1 – Cadmium 2 – Nickel 4 – Black Anodize 5 – Gold 6 – Chem Film	L – LCP  (Liquid Crystal Polymer)	9	P – Pin	CBR - Right Angle (90°) Narrow Profile	P R1 R2 R3 R4 (See Table Below) (Omit for None)	T - Threaded Insert in Board Mount Hole (Omit for None)	.110
			15	S – Socket				.150
			21					.190
			25					.250
			31					
			37					
			51 100					
<b>Sample Part Number:</b>								
MWDM	1	L	— 51	P	CBR	P —	T	.110

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

## JACKPOST OPTION

- |  |  |
|--|--|
| P - Standard Jackpost, Non-Removable           | R3 - Jackpost for Rear-Mounting to .062" Panel |
| R1 - Jackpost for Rear-Mounting to .032" Panel | R4 - Jackpost for Rear-Mounting to .093" Panel |
| R2 - Jackpost for Rear-Mounting to .047" Panel | OMIT FOR NONE                                  |

# Micro-D Right Angle (90°), Narrow Profile Printed Circuit Board Connectors Metal Shell, .100 Inch Pitch



## DIMENSIONS

Layout	A		B		C		D		E	
	Max	(mm)	$\pm .005$	(0.1)	$\pm .005$	(0.1)	Max	(mm)	Max	(mm)
9P	.785	(19.9)	.565	(14.4)	.333	(8.5)	.185	(4.7)	.308	(7.8)
9S	.785	(19.9)	.565	(14.4)	.400	(10.2)	.245	(6.2)	.308	(7.8)
15P	.935	(23.7)	.715	(18.2)	.483	(12.3)	.185	(4.7)	.308	(7.8)
15S	.935	(23.7)	.715	(18.2)	.551	(14.0)	.245	(6.2)	.308	(7.8)
21P	1.085	(27.6)	.865	(22.0)	.633	(16.1)	.185	(4.7)	.308	(7.8)
21S	1.085	(27.6)	.865	(22.0)	.701	(17.8)	.245	(6.2)	.308	(7.8)
25P	1.185	(30.1)	.965	(24.5)	.733	(18.6)	.185	(4.7)	.308	(7.8)
25S	1.185	(30.1)	.965	(24.5)	.801	(20.3)	.245	(6.2)	.308	(7.8)
31P	1.335	(33.9)	1.115	(28.3)	.883	(22.4)	.185	(4.7)	.308	(7.8)
31S	1.335	(33.9)	1.115	(28.3)	.951	(24.2)	.245	(6.2)	.308	(7.8)
37P	1.485	(37.7)	1.265	(32.1)	1.033	(26.2)	.185	(4.7)	.308	(7.8)
37S	1.485	(37.7)	1.265	(32.1)	1.101	(28.0)	.245	(6.2)	.308	(7.8)
51P	1.435	(36.4)	1.215	(30.9)	.983	(25.0)	.230	(5.8)	.351	(8.9)
51S	1.435	(36.4)	1.215	(30.9)	1.051	(26.7)	.290	(7.4)	.351	(8.9)
100P	2.170	(55.1)	1.800	(45.7)	1.383	(35.1)	.271	(6.9)	.394	(10.0)
100S	2.170	(55.1)	1.800	(45.7)	1.451	(36.9)	.330	(8.4)	.394	(10.0)

Layout	F		G		H		J		K Dia.	
	$\pm .010$	(.3)	$\pm .010$	(.3)	Max	(mm)	Max	(mm)	$\pm .003$	(0.1)
9P	.230	(5.8)	.250	(6.4)	.425	(10.8)	.575	(14.6)	.096	(2.4)
9S	.230	(5.8)	.250	(6.4)	.425	(10.8)	.575	(14.6)	.096	(2.4)
15P	.130	(3.3)	.250	(6.4)	.425	(10.8)	.665	(16.9)	.096	(2.4)
15S	.130	(3.3)	.250	(6.4)	.425	(10.8)	.665	(16.9)	.096	(2.4)
21P	.130	(3.3)	.250	(6.4)	.425	(10.8)	.875	(22.2)	.096	(2.4)
21S	.130	(3.3)	.250	(6.4)	.425	(10.8)	.875	(22.2)	.096	(2.4)
25P	.130	(3.3)	.250	(6.4)	.425	(10.8)	1.185	(30.1)	.096	(2.4)
25S	.130	(3.3)	.250	(6.4)	.425	(10.8)	1.185	(30.1)	.096	(2.4)
31P	.130	(3.3)	.250	(6.4)	.525	(13.3)	.965	(24.5)	.096	(2.4)
31S	.130	(3.3)	.250	(6.4)	.525	(13.3)	.965	(24.5)	.096	(2.4)
37P	.130	(3.3)	.250	(6.4)	.525	(13.3)	1.115	(28.3)	.096	(2.4)
37S	.130	(3.3)	.250	(6.4)	.525	(13.3)	1.115	(28.3)	.096	(2.4)
51P	.150	(3.8)	.300	(7.6)	.660	(16.8)	1.175	(29.8)	.096	(2.4)
51S	.150	(3.8)	.300	(7.6)	.660	(16.8)	1.175	(29.8)	.096	(2.4)
100P	.200	(5.1)	.400	(10.2)	1.010	(25.7)	1.815	(46.1)	.125	(3.2)
100S	.200	(5.1)	.400	(10.2)	1.010	(25.7)	1.815	(46.1)	.125	(3.2)

Metric dimensions (mm) are indicated in parentheses.



# COTS Micro-D Vertical Mount (Straight) Printed Circuit Board Connectors Metal Shell, .075 Inch Pitch

MR75 Series Vertical Mount PCB Connectors significantly reduce connector size and weight. They feature the same rugged construction as .100" pitch Micro-D PCB Connectors and are available with a variety of mounting hardware options to simplify installation.

- **9 Through 100 Contacts**
- **Tinned Terminals**
- **Environmentally Sealed**
- **Space Saving Design**

See Appendix for layout information.



### RELATED INFORMATION

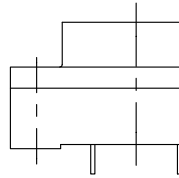
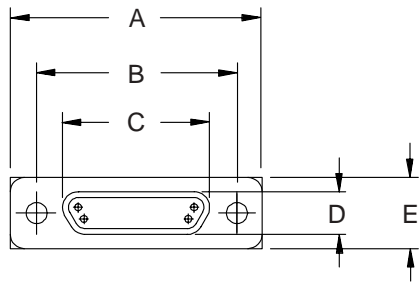
Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9

\* Available on the Inside Back Cover Fold-Out

### HOW TO ORDER

Conn. Series	Style	No. of Contacts	Contact Type	Tail Length	Shell Plating	Mounting Hardware See Page B-17 For Illustrations
MR75	80 – Vertical Mount	9 15 21 25 31 37 51 100	P – Pin S – Socket	1 - .109 2 - .250	A – Cadmium B – Nickel	N - Thru-Hole (No Hardware) P - Jackpost R - Extended Jackpost SU - Jackpost and Threaded Insert VU - Rear Panel Mount Jackpost, .063" Panel Thickness, With Threaded Insert WU - Rear Panel Mount Jackpost, .047" Panel Thickness, With Threaded Insert NU - Threaded Insert Only (No Jackpost)
<b>Sample Part Number:</b>						
MR75	80	— 31	P	1	A	SU

# COTS Micro-D Vertical Mount (Straight) Printed Circuit Board Connectors Metal Shell, .075 Inch Pitch



F

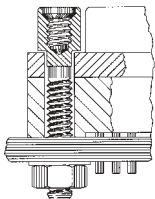
G

.020 (.5)  
± .002 (.1)

## DIMENSIONS

Layout	A Max	B	C	D	E Max	F Max	G Max
9P	.785 (19.9)	.565 (14.4)	.335 (8.5)	.185 (4.7)	.308 (7.8)	.184 (4.7)	.355 (9.0)
9S	.785 (19.9)	.565 (14.4)	.400 (10.2)	.251 (6.4)	.308 (7.8)	.197 (5.0)	.355 (9.0)
15P	.935 (23.7)	.715 (18.2)	.485 (12.3)	.185 (4.7)	.308 (7.8)	.184 (4.7)	.355 (9.0)
15S	.935 (23.7)	.715 (18.2)	.550 (14.0)	.251 (6.4)	.308 (7.8)	.197 (5.0)	.355 (9.0)
21P	1.085 (27.6)	.865 (22.0)	.635 (16.1)	.185 (4.7)	.308 (7.8)	.184 (4.7)	.355 (9.0)
21S	1.085 (27.6)	.865 (22.0)	.700 (17.8)	.251 (6.4)	.308 (7.8)	.197 (5.0)	.355 (9.0)
25P	1.185 (30.1)	.965 (24.5)	.735 (18.7)	.185 (4.7)	.308 (7.8)	.184 (4.7)	.355 (9.0)
25S	1.185 (30.1)	.965 (24.5)	.800 (20.3)	.251 (6.4)	.308 (7.8)	.197 (5.0)	.355 (9.0)
31P	1.335 (33.9)	1.115 (28.3)	.885 (22.5)	.185 (4.7)	.308 (7.8)	.184 (4.7)	.355 (9.0)
31S	1.335 (33.9)	1.115 (28.3)	.950 (24.1)	.251 (6.4)	.308 (7.8)	.197 (5.0)	.355 (9.0)
37P	1.485 (37.7)	1.265 (32.1)	1.035 (26.3)	.185 (4.7)	.308 (7.8)	.184 (4.7)	.355 (9.0)
37S	1.485 (37.7)	1.265 (32.1)	1.100 (27.9)	.251 (6.4)	.308 (7.8)	.197 (5.0)	.355 (9.0)
51P	1.435 (36.4)	1.215 (30.9)	.985 (25.0)	.228 (5.8)	.351 (8.9)	.184 (4.7)	.355 (9.0)
51S	1.435 (36.4)	1.215 (30.9)	1.050 (26.7)	.294 (7.5)	.351 (8.9)	.197 (5.0)	.355 (9.0)
100P	2.170 (55.1)	1.800 (45.7)	1.384 (35.2)	.271 (6.9)	.470 (11.9)	.184 (4.7)	.430 (10.9)
100S	2.170 (55.1)	1.800 (45.7)	1.508 (38.3)	.394 (10.0)	.470 (11.9)	.197 (5.0)	.430 (10.9)

## PRINTED CIRCUIT BOARD CONNECTOR HARDWARE OPTIONS: .075 INCH PITCH

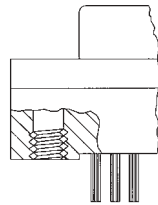


**P**

Jackpost For Up  
To .062" Boards

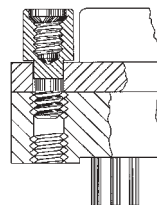
**R**

Jackpost For Up  
To .196" Boards



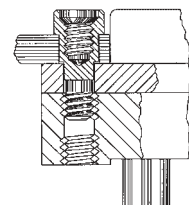
**NU**

Threaded Insert  
(No Jackpost)



**SU**

Short Jackpost  
With Threaded Insert



**VU**

Rear Panel Mount Jackpost  
With Threaded Insert  
(.062" Panel)

**WU**

Rear Panel Mount Jackpost  
With Threaded Insert  
(.047" Panel)

Note: #2-56 UNC-2B Thread For Sizes 9 thru 51  
#4-40 UNC-2B Thread For Size 100  
Metric dimensions (mm) are indicated in parentheses.



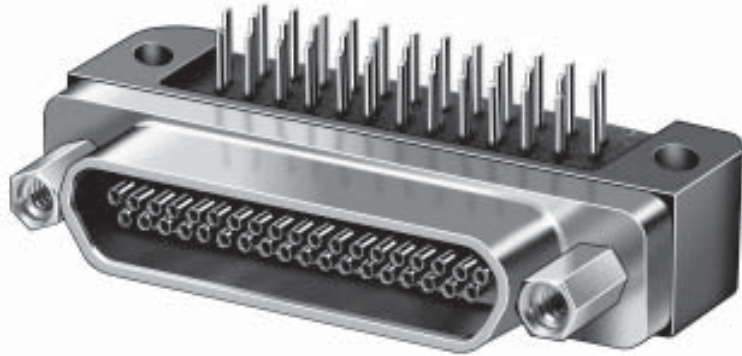


# COTS Micro-D Right Angle (90°) Printed Circuit Board Connectors Metal Shell, .075 Inch Pitch

MR75 Series Right Angle PCB Connectors significantly reduce connector size and weight. They feature the same rugged construction as .100" pitch Micro-D PCB Connectors and are available with a variety of mounting hardware options to simplify installation.

- 9 thru 100 Contacts
- Tinned Terminals
- Environmentally Sealed
- Space Saving Design

See Appendix for layout information.



## RELATED INFORMATION

Performance Specifications	IBC*
Materials and Finishes	IBC*
Contact Arrangements	7-8
Panel Cutouts, Mounting Dimensions	9
Printed Circuit Board layouts	Z-9

\* Available on the Inside Back  
Cover Fold-Out

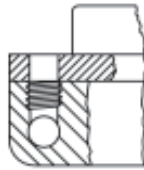
## HOW TO ORDER

Conn. Series	Style	No. of Contacts	Contact Type	Tail Length	Shell Plating	Jackpost	Board Mount Hole Option
MR75	90 – Right Angle Mount	9 15 21 25 31 37 51 100	P – Pin S – Socket	1 - .109 2 - .250	A – Cadmium B – Nickel	S - Jackpost N - No Jackpost	U - Threaded Insert installed in Board Mount Hole N - Thru Hole
<b>Sample Part Number:</b>							
MR75	90	37	S	1	A	S	U

# COTS Micro-D Right Angle (90°) Printed Circuit Board Connectors Metal Shell, .075 Inch Pitch

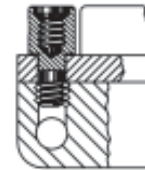


#2-56 (9-51)  
#4-40 (100)

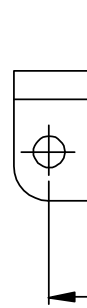
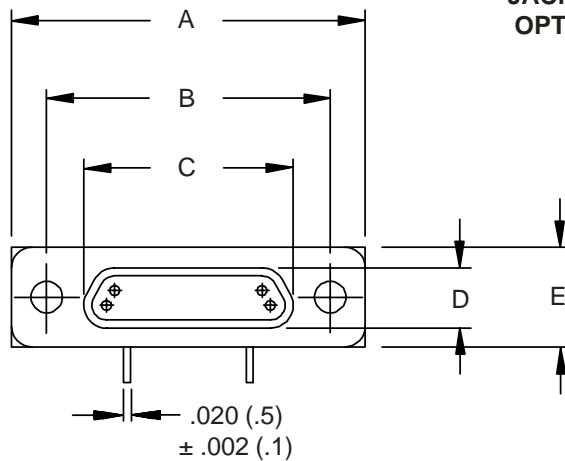


JACKPOST  
OPTION N

#2-56 (9-51)  
#4-40 (100)



JACKPOST  
OPTION S



F  
H G  
SIZE 9-51  
.096 (2.4)  
SIZE 100  
.125 (3.2)

## DIMENSIONS

Layout	A Max		B		C		D		E Max		F Max		G Max		H ± .010 (0.25)	
9P	.785	(19.9)	.565	(14.4)	.335	(8.5)	.185	(4.7)	.308	(7.8)	.184	(4.7)	.400	(10.2)	.250	(6.35)
9S	.785	(19.9)	.565	(14.4)	.400	(10.2)	.251	(6.4)	.308	(7.8)	.197	(5.0)	.400	(10.2)	.250	(6.35)
15P	.935	(23.7)	.715	(18.2)	.485	(12.3)	.185	(4.7)	.308	(7.8)	.184	(4.7)	.400	(10.2)	.250	(6.35)
15S	.935	(23.7)	.715	(18.2)	.550	(14.0)	.251	(6.4)	.308	(7.8)	.197	(5.0)	.400	(10.2)	.250	(6.35)
21P	1.085	(27.6)	.865	(22.0)	.635	(16.1)	.185	(4.7)	.308	(7.8)	.184	(4.7)	.400	(10.2)	.250	(6.35)
21S	1.085	(27.6)	.865	(22.0)	.700	(17.8)	.251	(6.4)	.308	(7.8)	.197	(5.0)	.400	(10.2)	.250	(6.35)
25P	1.185	(30.1)	.965	(24.5)	.735	(18.7)	.185	(4.7)	.308	(7.8)	.184	(4.7)	.400	(10.2)	.250	(6.35)
25S	1.185	(30.1)	.965	(24.5)	.800	(20.3)	.251	(6.4)	.308	(7.8)	.197	(5.0)	.400	(10.2)	.250	(6.35)
31P	1.335	(33.9)	1.115	(28.3)	.885	(22.5)	.185	(4.7)	.308	(7.8)	.184	(4.7)	.400	(10.2)	.250	(6.35)
31S	1.335	(33.9)	1.115	(28.3)	.950	(24.1)	.251	(6.4)	.308	(7.8)	.197	(5.0)	.400	(10.2)	.250	(6.35)
37P	1.485	(37.7)	1.265	(32.1)	1.035	(26.3)	.185	(4.7)	.308	(7.8)	.184	(4.7)	.400	(10.2)	.250	(6.35)
37S	1.485	(37.7)	1.265	(32.1)	1.100	(27.9)	.251	(6.4)	.308	(7.8)	.197	(5.0)	.400	(10.2)	.250	(6.35)
51P	1.435	(36.4)	1.215	(30.9)	.985	(25.0)	.228	(5.8)	.351	(8.9)	.184	(4.7)	.490	(12.4)	.300	(7.62)
51S	1.435	(36.4)	1.215	(30.9)	1.050	(26.7)	.294	(7.5)	.351	(8.9)	.197	(5.0)	.490	(12.4)	.300	(7.62)
100P	2.170	(55.1)	1.800	(45.7)	1.384	(35.2)	.271	(6.9)	.394	(10.0)	.184	(4.7)	.660	(16.8)	.400	(10.16)
100S	2.170	(55.1)	1.800	(45.7)	1.508	(38.3)	.394	(10.0)	.394	(10.0)	.197	(5.0)	.660	(16.8)	.400	(10.16)

Metric dimensions (mm) are indicated in parentheses.

# Backshell Wire Bundle Sizing Chart and New Backshell and Hardware Addendum

MAXIMUM WIRE BUNDLE DIAMETERS						
No. of Wires	Wire Gauge	M22769/11		M22769/33		
		Wire Bundle Diameter	Backshell Cable Entry Code	Wire Bundle Diameter	Backshell Cable Entry Code	
9	#24	.153 (3.9)	06	.132 (3.4)	05	
9	#26	.136 (3.5)	05	.115 (2.9)	05	
9	#28	.119 (3.0)	05	.098 (2.5)	04	
15	#24	.197 (5.0)	07	.171 (4.3)	06	
15	#26	.175 (4.4)	07	.149 (3.8)	06	
15	#28	.153 (3.9)	06	.127 (3.2)	05	
21	#24	.233 (5.9)	08	.202 (5.1)	07	
21	#26	.207 (5.3)	07	.176 (4.5)	07	
21	#28	.181 (4.6)	07	.150 (3.8)	06	
25	#24	.254 (6.5)	09	.220 (5.6)	08	
25	#26	.226 (5.7)	08	.192 (4.9)	07	
25	#28	.198 (5.0)	07	.164 (4.2)	06	
31	#24	.283 (7.2)	*	.245 (6.2)	09	
31	#26	.252 (6.4)	09	.214 (5.4)	08	
31	#28	.220 (5.6)	08	.182 (4.6)	07	
37	#24	.309 (7.9)	*	.268 (6.8)	09	
37	#26	.275 (7.0)	*	.234 (5.9)	08	
37	#28	.241 (6.1)	08	.199 (5.1)	07	
51	#24	.363 (9.2)	*	.315 (8.0)	*	
51	#26	.323 (8.2)	*	.274 (7.0)	09	
51	#28	.282 (7.2)	10	.234 (5.9)	08	
100	#24	.509 (12.9)	*	.441 (11.2)	*	
100	#26	.452 (11.5)	*	.384 (9.8)	*	
100	#28	.396 (10.1)	*	.328 (8.3)	*	

\*Glenair recommends elliptical style backshell

## NEW MICRO-D BACKSHELLS AND HARDWARE



**507-181 Strain Relief Backshell for MIL-C-83513 Connectors**

**507-198 Saddle Bar Strain Relief Backshell for MIL-C-83513 Connectors**

**507-178 Two-Piece Screw Lock RFI/EMI Split Backshell with Elliptical Banding Platform for MIL-C-83513 Connectors**

**Rear Mount Cable Connector Jackpost Kit**

**Rear Panel Mount Jackpost Kit for PCB Connectors**

**559-010 Panel Gasket**

## Micro-D Shielded Cable Assemblies With Ground Spring Option



### PRODUCT FEATURES

- Integral Shield Attachment
- Ground Spring Option (Pin Connector Only)
- Optimized EMI Performance
- Reduced Size and Weight Compared to Conventional Connector and Backshell
- High Performance TwistPin Contact System

## Save Labor, Reduce Weight and Improve EMI Shielding with Glenair's Micro-D Shielded Cable Assemblies

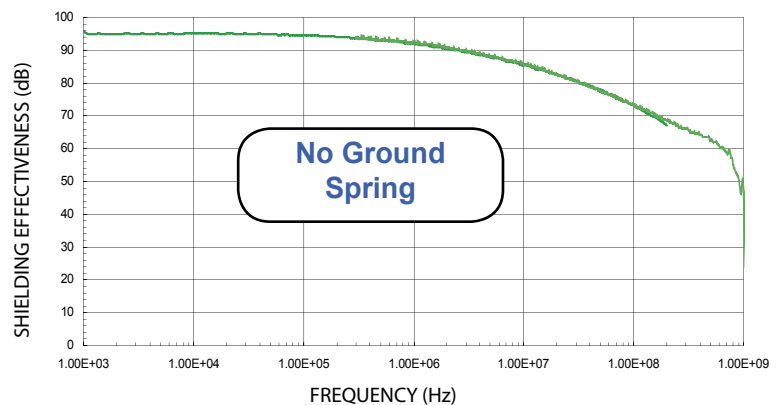
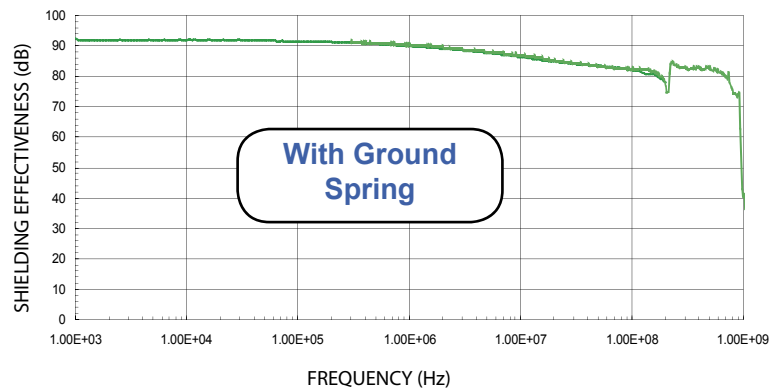
Aerospace electronics systems require higher and higher levels of protection from radiated emissions. Glenair's fully shielded Micro-D cable assemblies meet this need. The cable shield is attached directly onto the one-piece connector shell and secured with a stainless steel BAND-IT® clamp. These pre-wired, 100% tested assemblies meet the requirements of MIL-DTL-83513. An optional ground spring on the pin connector assures low shell-to-shell resistance. Available with a variety of wire types and shields, Micro-D shielded assemblies can be ordered in any length, either single-ended or "back-to-back".

### Ground Spring

A nickel-plated beryllium copper ground spring on the pin connector mating face offers substantial improvement in EMI protection. The graphs compare identical connectors tested with and without the springs.

### Applications

- Exoatmospheric Vehicles
- Test Equipment
- Phased Array Radar
- Missile Systems
- Avionics
- Sensors
- UAV's





Micro-D Shielded Cable Assemblies  
With Ground Spring Option

How to Order:

**177-467 - 2 - 25 P 4 K 1 - 24 M A G**

**BASIC NO** \_\_\_\_\_

**SHELL PLATING** \_\_\_\_\_

1 — CADMIUM, YELLOW CHROMATE  
2 — ELECTROLESS NICKEL  
5 — GOLD

**NUMBER OF CONTACTS** \_\_\_\_\_

9, 15, 21, 25, 37, 51, 100

**CONTACT TYPE** \_\_\_\_\_

P — PIN (SINGLE-END PLUG)  
S — SOCKET (SINGLE END RECEP)  
GP — DOUBLE-ENDED CABLE, PIN CONNECTORS BOTH ENDS  
GS — DOUBLE-ENDED CABLE, SOCKET CONNECTORS BOTH ENDS  
CS — DOUBLE-ENDED CABLE, PIN AND SOCKET

**WIRE GAGE (AWG)** \_\_\_\_\_

4 — #24 GAGE  
6 — #26 GAGE  
8 — #28 GAGE  
0 — #30 GAGE

**WIRE TYPE** \_\_\_\_\_

K — TEFLON® WIRE PER MIL-W-22759/11 (NOT AVAILABLE IN #30 GAGE)  
J — CROSSLINKED TEFZEL WIRE PER M22759/33

**WIRE COLOR** \_\_\_\_\_

1 — WHITE  
5 — COLOR-CODED PER MIL-STD-681 (STRIPED) (#24 AND #26 GAGE ONLY)  
7 — TEN COLOR REPEATING

**OVERALL LENGTH IN INCHES** \_\_\_\_\_

**MOUNTING HARDWARE** \_\_\_\_\_

B — NO MOUNTING HARDWARE INSTALLED  
M — MALE JACKSCREW, ALLEN HEAD, LOW PROFILE  
M1 — MALE JACKSCREW, ALLEN HEAD, HIGH PROFILE  
S — MALE JACKSCREW, SLOT HEAD, LOW PROFILE  
S1 — MALE JACKSCREW, SLOT HEAD, HIGH PROFILE  
P — FEMALE JACKPOST

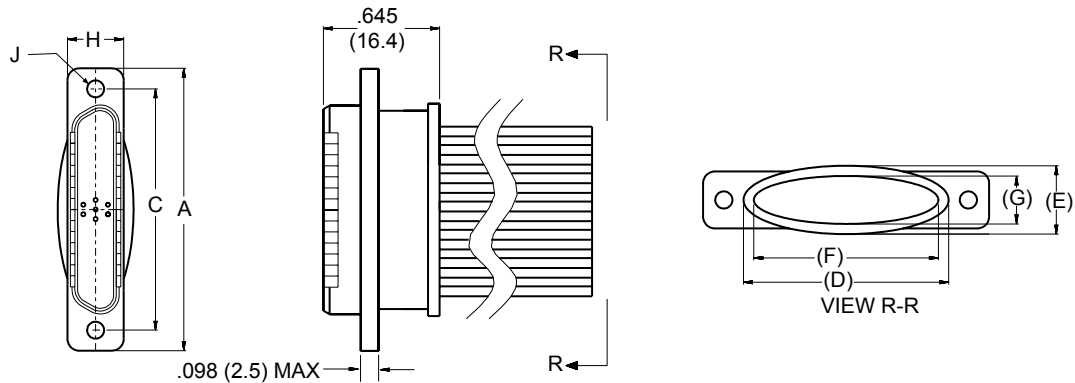
**SHIELD AND JACKET OPTION** \_\_\_\_\_

N — NO SHIELD, NO JACKET  
A — BRAIDED SHIELD INSTALLED  
B — BRAIDED SHIELD INSTALLED, WITH PET“EXPANDO” JACKET (+125° C.)  
C — BRAIDED SHIELD INSTALLED, WITH E-CTFE HALAR “EXPANDO” JACKET (+150° C.)

**GROUND SPRING OPTION** \_\_\_\_\_

N — NO GROUND SPRING  
G — GROUND SPRING INSTALLED (PIN CONNECTORS ONLY)

# Micro-D Shielded Cable Assemblies With Ground Spring Option



Number of Contacts	A +/- .010 (0.25)	B +/- .010 (0.25)	(C)	(D)	(E)	(F)	(G)	H +/- .010 (0.3)	J
9	.775 (19.7)	.298 (7.6)	.565 (14.4)	.450 (11.4)	.324 (8.2)	.340 (8.6)	.214 (5.4)	.298 (7.6)	.096/.088 ( 2.4/2.2)
15	.925 (23.5)	.298 (7.6)	.715 (18.2)	.600 (15.2)	.324 (8.2)	.490 (12.5)	.214 (5.4)	.298 (7.6)	.096/.088 ( 2.4/2.2)
21	1.075 (27.3)	.298 (7.6)	.865 (22.0)	.750 (19.1)	.324 (8.2)	.640 (16.3)	.214 (5.4)	.298 (7.6)	.096/.088 ( 2.4/2.2)
25	1.175 (29.9)	.298 (7.6)	.965 (24.5)	.850 (21.6)	.324 (8.2)	.740 (18.8)	.214 (5.4)	.298 (7.6)	.096/.088 ( 2.4/2.2)
31	1.325 (33.7)	.298 (7.6)	1.115 (28.3)	1.000 (25.4)	.324 (8.2)	.890 (22.6)	.214 (5.4)	.298 (7.6)	.096/.088 ( 2.4/2.2)
37	1.475 (37.5)	.298 (7.6)	1.265 (32.1)	1.150 (29.2)	.324 (8.2)	1.040 (26.4)	.214 (5.4)	.298 (7.6)	.096/.088 ( 2.4/2.2)
51	1.425 (36.2)	.341 (8.7)	1.215 (30.9)	1.100 (27.9)	.367 (9.3)	.990 (25.2)	.257 (6.5)	.341 (8.7)	.096/.088 ( 2.4/2.2)
100	2.160 (54.9)	.384 (9.8)	1.800 (45.7)	1.495 (38.0)	.417 (10.6)	1.385 (35.2)	.307 (7.8)	.384 (9.8)	.150/.145 (3.8/3.7)

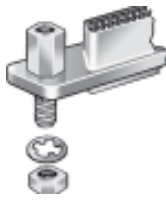
## Performance Specifications

Current rating	3 Amp Maximum
Dielectric Withstanding Voltage	900 VAC Sea Level, 300 VAC @ 70,000 feet.
Insulation Resistance	5000 Megohms Minimum
Operating Temperature	-55° C. to +150° C.
Shock	50 g's, in Accordance with MIL-STD-1344 Method 2004, Condition E
Vibration	20 g's, in Accordance with MIL-STD-1344, Method 2005, Condition IV
Contact Resistance	8 Milliohms Maximum Plus Wire Resistance
EMI Shielding Effectiveness	50 dB Attenuation, 100 MHz to 1000 MHz

## Materials and Finishes

Pin Contact	Beryllium Copper per ASTM B194, Plated 50 µinches Gold per ASTM B488 over Nickel Underplating
Socket Contact	Phosphor Bronze per ASTM 139
Insulator	Liquid Crystal Polymer (LCP) per MIL-M-24519 GLCP-30F
Shell	Aluminum Alloy per ASTM B221 Alloy 6061 Plating Code 1: Yellow Chromate Over Cadmium per QQ-P-416, Type II, Class 3 Plating Code 2: Electroless Nickel per ASTM B733-90 SC2, Type 1, Class J Plating Code 5: 50 µinches Gold per ASTM B488 over Nickel Underplating
Interfacial Seal (Socket Connector)	Flourosilicone Rubber per A-A-59588
Jackscrews, Jackposts, Shield Band	Stainless Steel, Passivated
Wire	Type K: per MIL-W-22759/11. Silver-Plated Copper Conductor, Extruded TFE Teflon® Insulation Type J: per MIL-W-22759/33. Silver-Plated Copper Conductor, Extruded Crosslinked Tefzel® Insulation, High Strength
Shield Braid	#36 AWG Nickel-Coated Copper per ASTM B355 Class 4 OFHC
Jacket	Type B: PET Expando Braided Jacket, +125° C. Type C: E-CTFE (Ethylene-Chlorotriflourethylene) Halar Expando Braided Jacket, +150° C.
Potting Compound	Hysol Epoxy #4215

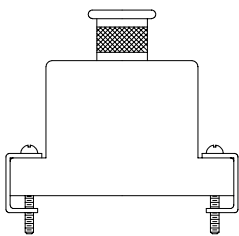
# Micro-D Backshells and Accessories General Information/Selection Guide



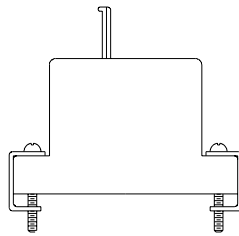
**Hardware Kits, Dust Caps, Interfacial  
Seals, EMI Gaskets, and  
Shorting Plugs**  
Pages C-3 to C-7

Glenair's comprehensive Micro-D backshell and accessory offerings include mounting hardware, EMI banding shells, switching shells, potting shells, protective covers and connector savers. EMI bands and installation tools are sold separately. Metal and composite backshells are available with:

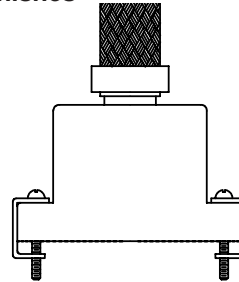
- **Optional EMI Shielding**
- **Designs for both Standard M83513 Metal Shell Connectors and Glenair COTS Micro-D Connectors**
- **6 Standard Finishes**



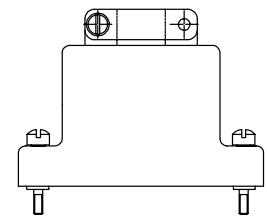
**Standard EMI Backshell**  
Single Round Entry  
Page C-8



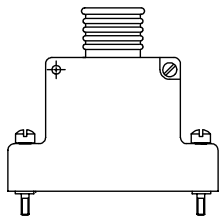
**Strain Relief Backshell**  
For Use With Cable Ties  
Page C-10



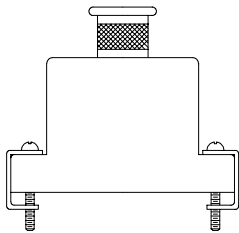
**EMI Backshell With  
Shield Sock**  
Page C-12



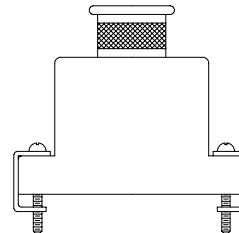
**Solid EMI Strain Relief  
Backshell**  
Page C-14



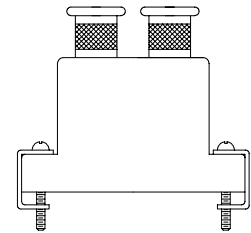
**EMI Split Backshell**  
Single Round Entry  
Page C-15



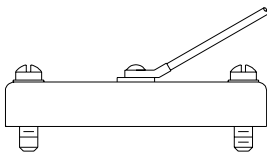
**EMI Round Entry -  
Composite Backshell**  
For Applications Where  
Weight is a Priority  
Single Round Entry  
Page C-16



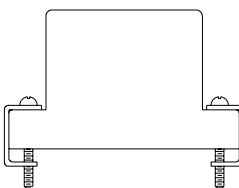
**EMI Banding - Elliptical  
Entry Backshell**  
For Large Wire Bundles  
Solid Shell Page C-18  
Split Shell Page C-20



**Dual Entry EMI  
Backshell**  
For Daisy Chain and  
Large Wire Bundles  
Pages C-22



**Protective Cover**  
For Micro-D Metal  
Shell Connectors  
Page C-24



**Shorting Backshell**  
For Terminators and  
Circuit Switching  
Page C-26



**Potting Shell**  
For Backpotting Wires  
Page C-27



**Micro-D Sav-Con®  
Connector Savers**  
Page C-28



# Micro-D Backshells and Accessories General Information/Selection Guide

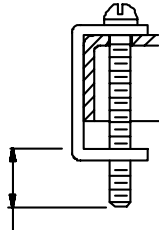
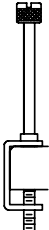
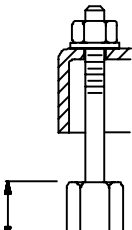
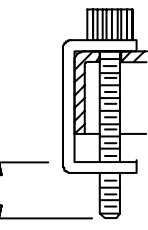
## BACKSHELL FINISH OPTIONS

Symbol	Finish	Specification
C	Black Anodize	MIL-A-8625, Type II, Class 2
E	Chem Film	MIL-C-5541, Class 3
J	Iridite, Gold Over Cadmium Plate Over Electroless Nickel	QQ-P-416, Type II, Class 3 ASTM B733-90, SC2, Type I, Class 5
M	Electroless Nickel	ASTM B733-90, SC2, Type I, Class 5
NF	Cadmium, Olive Drab Over Electroless Nickel	1000 hour corrosion resistance
Z2	Gold	ASTM-B488

## STANDARD MATERIALS

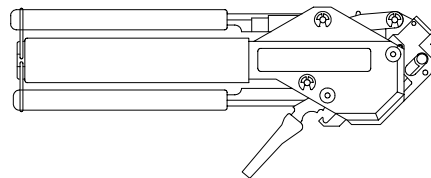
Component	Material
Machined Components	Aluminum Per QQ-A-200, 225 / ASTM B 211, 221
Die-Cast Components	Aluminum Per QQ-A-591 (A380)
Composite Backshells	High Grade Engineering Thermoplastic
Jackscrews, Clips, Bands	Stainless Steel 300 Series Per QQ-S-763, Passivated

## SOLID BACKSHELL HARDWARE OPTIONS

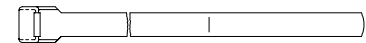
Style "B" Fillister Head Male Jackscrew	Style "E" Extended Jackscrew	Style "F" Female Jackpost	Style "H" Hex (Allen) Head Jackscrew
 <p>Sizes 9-51 - .154 (3.9) Size 100 - .184 (4.7)</p>	 <p>(Not Available With 45° Entry Backshell)</p>	 <p>.188 (4.8)</p>	 <p>Sizes 9-51 - .154 (3.9) Size 100 - .184 (4.7)</p>

## EMI BANDING ACCESSORIES

EMI backshells are designed for use with stainless steel shield termination bands. This banding system provides a fast, easy method of attaching cable braided shields to the backshell. See Glenair's *Backshell Assembly Tools, Banding Tools and Accessories Catalog* for complete product information.



**Hand Banding Tool**  
Part Number 600-061



Micro-Band Part Number	Length / Shape
600-057	8.25" / Flat
600-057-1	8.25" / Precoiled
600-083	14.25" / Flat
600-083-1	14.25" / Precoiled

Metric dimensions (mm) are indicated in parentheses.

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CAGE Codes 06324/0CA77

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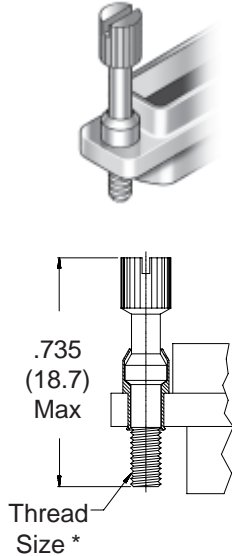
# Micro-D Hardware Dimensions and Accessories - Jackpost Kits



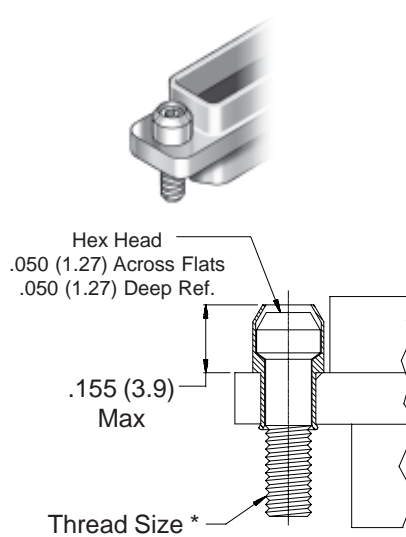
Micro-D  
Accessories

## FACTORY INSTALLED HARDWARE

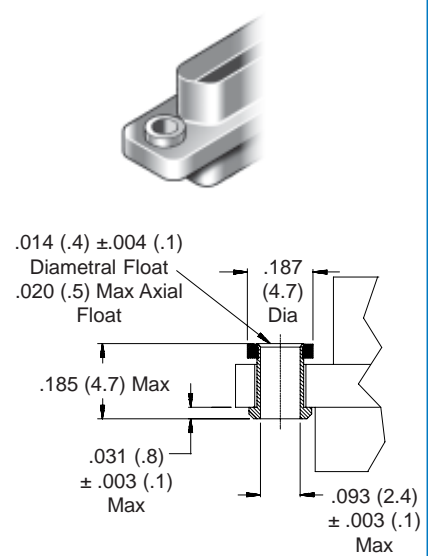
**"K" Style Jackscrew  
Non-Removable Slot Head**



**"L" Style Jackscrew  
Non-Removable Allen Head**



**"F" Style  
Float Mount**



\* Thread size for connector sizes 9-51 is #2A-56 UNC, for connector size 100 is #4-40 UNC

Metric dimensions (mm) are indicated in parentheses.

## To Most People It's Just a Rubber Connector Cover

At Glenair  
It's a Good Ol'  
"Marshal Bean"



*"To Protect  
and to Serve"*



"M<sup>a</sup>rshal Beans" provide robust physical and environmental protection while eliminating the damage caused when metal connector covers bang against equipment housings, or when test cables get dragged across the shop floor! The covers come in two material types: a flexible neoprene rubber or a proprietary conductive material which dissipates static electricity.

At Glenair, we reckon a flexible rubber cover is the perfect way to protect an interconnect cable. So isn't it time you hired "Marshal Bean" to ride herd on your connector investment?

# Micro-D Jackpost Kits For Solder Cup and Pigtail Connectors



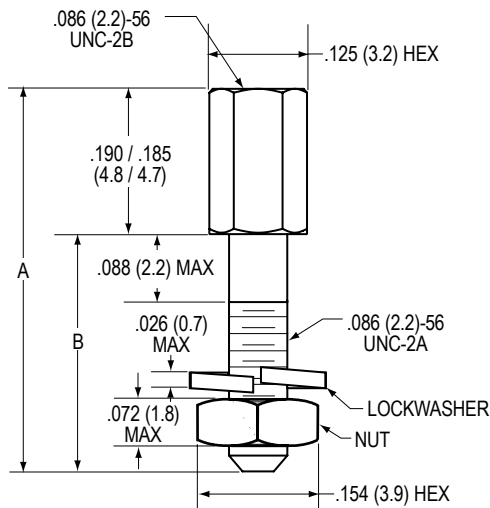
## PRODUCT FEATURES

- Compatible with all M83513 type Connectors
- Stainless Steel
- Extended Length Options
- Rear Panel Mounting Options

### Jackposts for Front-Mounted Connectors

#### #2-56 Jackpost

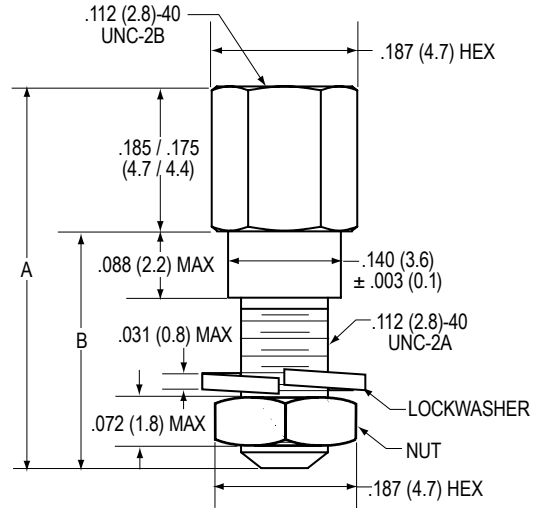
Connector Sizes 9-51



Part Number	Mil Spec Part Number	A ± .015 (0.4)	B ± .020 (0.5)
080-00-00-100	M83513/05-07	.475 (12.1)	.288 (7.3)
500-069-2-1		.688 (17.5)	.500 (12.7)
500-069-2-2		.813 (20.7)	.625 (15.9)
500-069-2-3		.938 (23.8)	.750 (19.1)
500-069-2-4		1.063 (27.0)	.875 (22.2)
500-069-2-5		1.188 (30.2)	1.000 (25.4)

#### #4-40 Jackpost

Connector Size 100

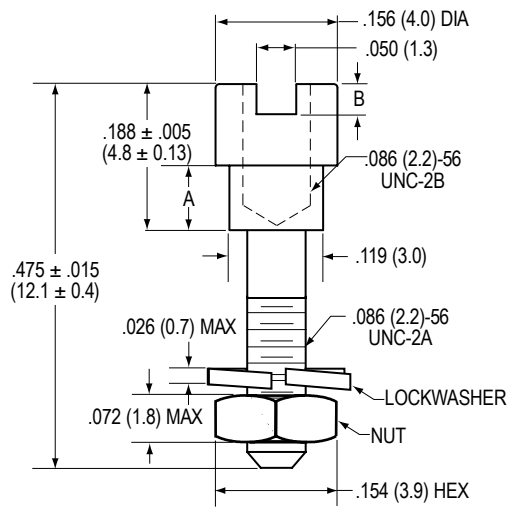


Part Number	Mil Spec Part Number	A ± .015 (0.4)	B ± .020 (0.5)
080-00-00-101	M83513/05-17	.475 (12.1)	.295 (7.3)
500-069-4-1		.680 (17.3)	.500 (12.7)
500-069-4-2		.805 (20.4)	.625 (15.9)
500-069-4-3		.930 (23.6)	.750 (19.1)
500-069-4-4		1.055 (26.8)	.875 (22.2)
500-069-4-5		1.180 (30.0)	1.000 (25.4)

- Material and Finish Jackpost and Nut: Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, passivated in accordance with ASTM A967. Lockwasher: Corrosion resistant steel in accordance with ASTM A240, passivated in accordance with ASTM A967.
- Torque #2-56 thread: 2.5 inch-pounds. #4-40 thread: 4.0 inch-pounds. Maximum recommended torque for installation and operation.
- Standard Package Jackpost kits are packaged one kit per bag. One kit consists of two posts, two nuts and two lockwashers.
- Application Use #1 through #A (M83513 size H). Not for use with rear-panel mounted connectors or printed circuit board connectors.

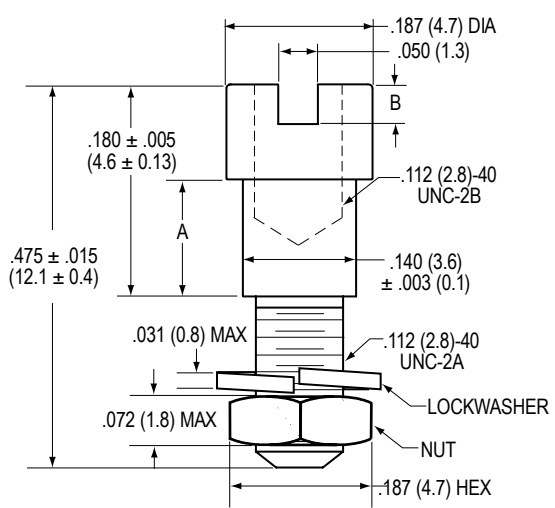
### Jackposts for Rear-Mounted Connectors

#### #2-56 Jackpost Connector Sizes 9-51



Part Number	Panel Thickness	A ± .003 (0.08)	B ± .003 (0.08)
177-504-2-2	1/32 (0.8)	.024 (0.6)	.050 (1.3)
177-504-2-3	3/64 (1.2)	.041 (1.0)	.050 (1.3)
177-504-2-4	1/16 (1.6)	.055 (1.4)	.050 (1.3)
177-504-2-5	3/32 (2.4)	.086 (2.2)	.050 (1.3)
177-504-2-6	1/8 (3.2)	.118 (3.0)	.030 (7.6)

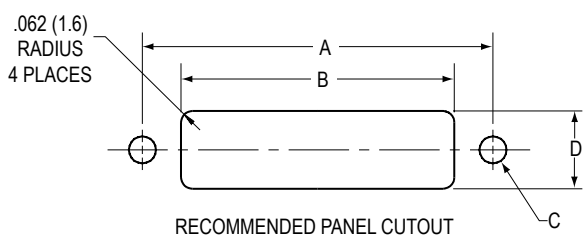
#### #4-40 Jackpost Connector Size 100



Part Number	Panel Thickness	A ± .003 (0.08)	B ± .003 (0.08)
177-504-4-2	1/32 (0.8)	.024 (0.6)	.050 (1.3)
177-504-4-3	3/64 (1.2)	.041 (1.0)	.050 (1.3)
177-504-4-4	1/16 (1.6)	.055 (1.4)	.050 (1.3)
177-504-4-5	3/32 (2.4)	.086 (2.2)	.050 (1.3)
177-504-4-6	1/8 (3.2)	.118 (3.0)	.030 (7.6)

- Material and Finish** Jackpost and Nut: Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, passivated in accordance with ASTM A967. Lockwasher: Corrosion resistant steel in accordance with ASTM A240, passivated in accordance with ASTM A967.
- Torque** #2-56 thread: 2.5 inch-pounds. #4-40 thread: 4.0 inch-pounds. Maximum recommended torque for installation and operation.
- Standard Package** Jackpost kits are packaged one kit per bag. One kit consists of two posts, two nuts and two lockwashers.
- Application** Use #1 through #11 (M83513 size H). Not for use with printed circuit board connectors. A

### Panel Cutout Dimensions



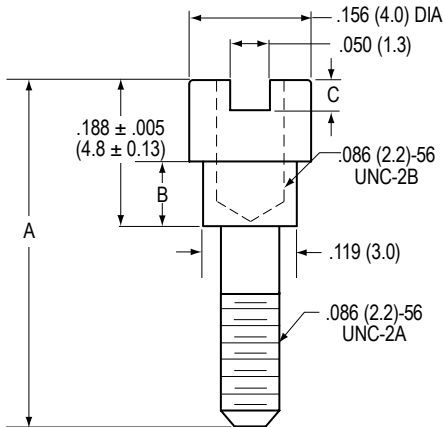
Shell Size	A ± .005 (0.13)	B ± .005 (0.13)	C + .003 (0.08) - .001 (0.03)	D ± .005 (0.13)
9	.565 (14.4)	.406 (10.3)	.125 (3.18)	.256 (6.5)
15	.715 (18.2)	.556 (14.1)	.125 (3.18)	.256 (6.5)
21	.865 (22.0)	.706 (17.9)	.125 (3.18)	.256 (6.5)
25	.965 (24.5)	.806 (20.5)	.125 (3.18)	.256 (6.5)
31	1.115 (28.3)	.956 (24.3)	.125 (3.18)	.256 (6.5)
37	1.265 (32.1)	1.106 (28.1)	.125 (3.18)	.256 (6.5)
51	1.215 (30.9)	1.056 (26.8)	.125 (3.18)	.300 (7.6)
100	1.800 (45.7)	1.520 (38.6)	.147 (3.73)	.406 (10.3)

# Micro-D Jackpost Kits For Printed Circuit Board Connectors (Style BS, BR and CBR)

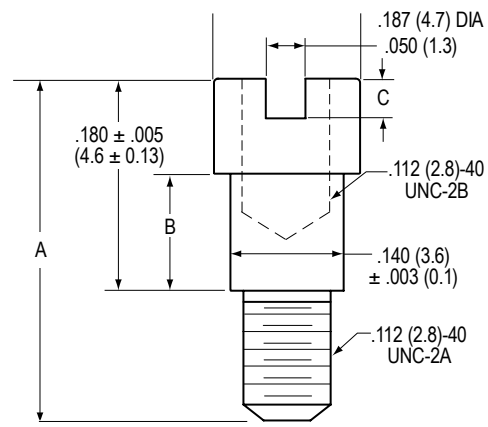


## Jackposts for Rear-Mounted PCB Connectors

### #2-56 Jackpost Connector Sizes 9-51



### #4-40 Jackpost Connector Size 100

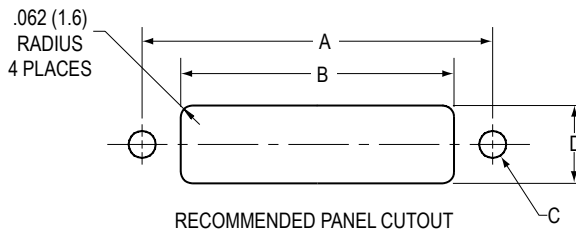


Part Number	Panel Thickness	Connector Style	A ± .015 (0.4)	B ± .003 (0.08)	C ± .003 (0.08)
177-505-A-2-2	1/32 (0.8)	BS, CBR	.365 (9.3)	.024 (0.6)	.050 (1.3)
177-505-A-2-3	3/64 (1.2)	BS, CBR	.365 (9.3)	.041 (1.0)	.050 (1.3)
177-505-A-2-4	1/16 (1.6)	BS, CBR	.365 (9.3)	.055 (1.4)	.050 (1.3)
177-505-A-2-5	3/32 (2.4)	BS, CBR	.365 (9.3)	.086 (2.2)	.050 (1.3)
177-505-A-2-6	1/8 (3.2)	BS, CBR	.365 (9.3)	.118 (3.0)	.030 (7.6)
177-505-B-2-2	1/32 (0.8)	BR	.398 (10.1)	.024 (0.6)	.050 (1.3)
177-505-B-2-3	3/64 (1.2)	BR	.398 (10.1)	.041 (1.0)	.050 (1.3)
177-505-B-2-4	1/16 (1.6)	BR	.398 (10.1)	.055 (1.4)	.050 (1.3)
177-505-B-2-5	3/32 (2.4)	BR	.398 (10.1)	.086 (2.2)	.050 (1.3)
177-505-B-2-6	1/8 (3.2)	BR	.398 (10.1)	.118 (3.0)	.030 (7.6)

Part Number	Panel Thickness	Connector Style	A ± .015 (0.4)	B ± .003 (0.08)	C ± .003 (0.08)
177-505-C-4-2	1/32 (0.8)	BR, CBR	.475 (12.1)	.024 (0.6)	.050 (1.3)
177-505-C-4-3	3/64 (1.2)	BR, CBR	.475 (12.1)	.041 (1.0)	.050 (1.3)
177-505-C-4-4	1/16 (1.6)	BR, CBR	.475 (12.1)	.055 (1.4)	.050 (1.3)
177-505-C-4-5	3/32 (2.4)	BR, CBR	.475 (12.1)	.086 (2.2)	.050 (1.3)
177-505-C-4-6	1/8 (3.2)	BR, CBR	.475 (12.1)	.118 (3.0)	.030 (7.6)
177-505-D-4-2	1/32 (0.8)	BS	.360 (9.1)	.024 (0.6)	.050 (1.3)
177-505-D-4-3	3/64 (1.2)	BS	.360 (9.1)	.041 (1.0)	.050 (1.3)
177-505-D-4-4	1/16 (1.6)	BS	.360 (9.1)	.055 (1.4)	.050 (1.3)
177-505-D-4-5	3/32 (2.4)	BS	.360 (9.1)	.086 (2.2)	.050 (1.3)
177-505-D-4-6	1/8 (3.2)	BS	.360 (9.1)	.118 (3.0)	.030 (7.6)

- Material and Finish** Corrosion resistant steel in accordance with ASTM A484 and ASTM A582, passivated in accordance with ASTM A967.
- Torque** #2-56 thread: 2.5 inch-pounds. #4-40 thread: 4.0 inch-pounds. Maximum recommended torque for installation and operation.
- Standard Package** Jackpost kits are packaged one kit per bag. One kit consists of two posts.
- Application** Rear panel mounting guarantee compatibility of these jackposts with connectors made by other manufacturers.

### Panel Cutout Dimensions

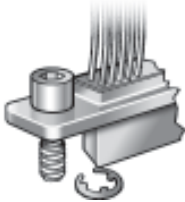


Shell Size	A ± .005 (0.13)	B ± .005 (0.13)	C + .003 (0.08) - .001 (0.03)	D ± .005 (0.13)
9	.565 (14.4)	.406 (10.3)	.125 (3.18)	.256 (6.5)
15	.715 (18.2)	.556 (14.1)	.125 (3.18)	.256 (6.5)
21	.865 (22.0)	.706 (17.9)	.125 (3.18)	.256 (6.5)
25	.965 (24.5)	.806 (20.5)	.125 (3.18)	.256 (6.5)
31	1.115 (28.3)	.956 (24.3)	.125 (3.18)	.256 (6.5)
37	1.265 (32.1)	1.106 (28.1)	.125 (3.18)	.256 (6.5)
51	1.215 (30.9)	1.056 (26.8)	.125 (3.18)	.300 (7.6)
100	1.800 (45.7)	1.520 (38.6)	.147 (3.73)	.406 (10.3)

# Micro-D Accessories Jackscrew Kits

## JACKSCREW KITS (Kits consist of two screws and two e-rings)

**"M" Style Jackscrew**  
Low Profile Allen Head



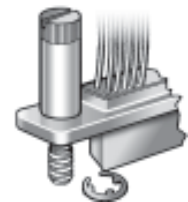
**"S" Style Jackscrew**  
Low Profile Slot Head



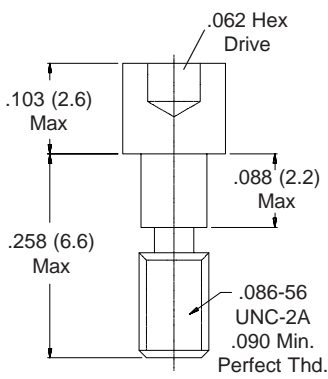
**"M1" Style Jackscrew**  
High Profile Allen Head



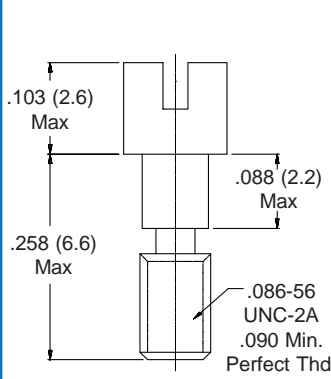
**"S1" Style Jackscrew**  
High Profile Slot Head



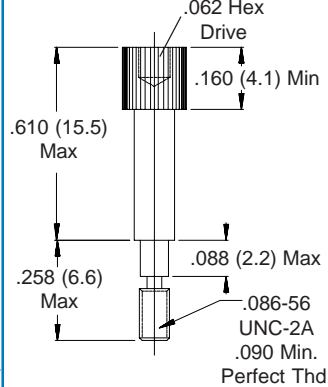
## #2-56 FOR 9-51 POSITION CONNECTORS



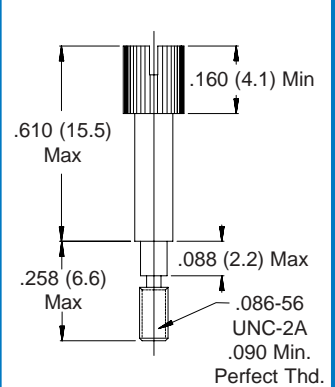
**Part Number**  
080-00-00-502  
**Mil Spec**  
M83513/05-02



**Part Number**  
080-00-00-505  
**Mil Spec**  
M83513/05-05

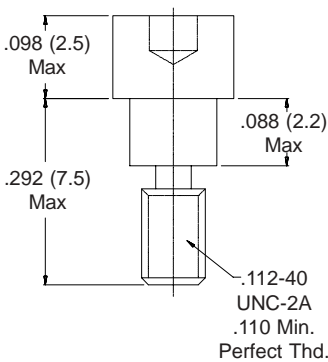


**Part Number**  
080-00-00-503  
**Mil Spec**  
M83513/05-03

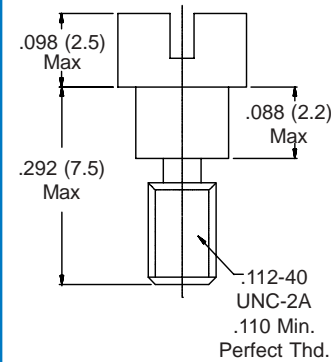


**Part Number**  
080-00-00-506  
**Mil Spec**  
M83513/05-06

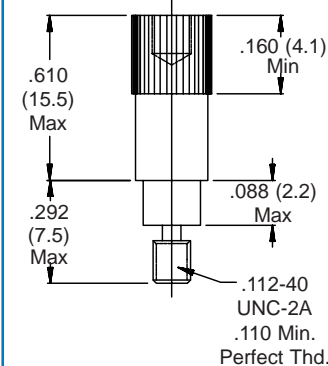
## #4-40 FOR 100 POSITION CONNECTORS



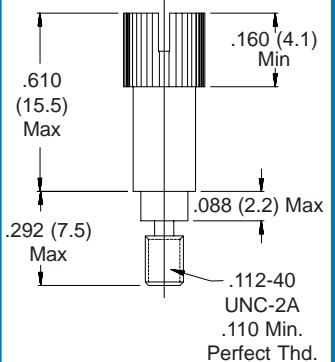
**Part Number**  
080-00-00-512  
**Mil Spec**  
M83513/05-12



**Part Number**  
080-00-00-515  
**Mil Spec**  
M83513/05-15



**Part Number**  
080-00-00-513  
**Mil Spec**  
M83513/05-13



**Part Number**  
080-00-00-516  
**Mil Spec**  
M83513/05-16

Metric dimensions (mm) are indicated in parentheses.

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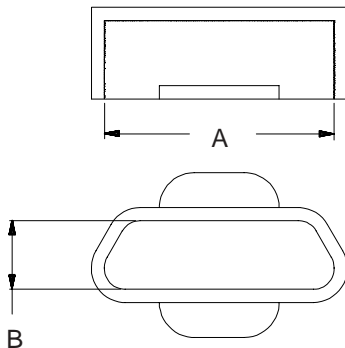
www.glenair.com

E-Mail: sales@glenair.com

# Micro-D Accessories Dust Caps and Interfacial Seals



## MOLDED PLASTIC DUST CAPS

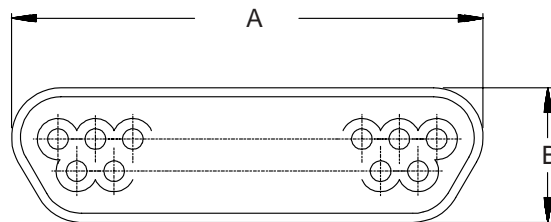


Anti-static Micro-D dust caps are available to fit all sizes of Metal Shell Micro-D connectors. These dust caps are injection-molded from a rugged plastic material that resists cracking and provides protection.

Material: Polypropylene, anti-static, color black.

Layout	Part Number	A Ref.	B Ref.
9P	000-01-09-162	.315 (8.0)	.184 (4.7)
9S	000-01-09-163	.385 (9.8)	.250 (6.4)
15P	000-01-15-162	.465 (11.8)	.184 (4.7)
15S	000-01-15-163	.535 (13.6)	.250 (6.4)
21P	000-01-21-162	.615 (15.6)	.184 (4.7)
21S	000-01-21-163	.685 (17.4)	.250 (6.4)
25P	000-01-25-162	.715 (18.2)	.184 (4.7)
25S	000-01-25-163	.785 (19.9)	.250 (6.4)
31P	000-01-31-162	.865 (22.0)	.184 (4.7)
31S	000-01-31-163	.935 (23.7)	.250 (6.4)
37P	000-01-37-162	1.015 (25.8)	.184 (4.7)
37S	000-01-37-163	1.085 (27.6)	.250 (6.4)
51P	000-01-51-162	.965 (24.5)	.227 (5.8)
51S	000-01-51-163	1.035 (26.3)	.292 (7.4)
100P	000-01-00-162	1.364 (34.6)	.270 (6.9)
100S	000-01-00-163	1.437 (36.5)	.338 (8.6)

## MICRO-D INTERFACIAL SEALS FOR MWDM SOCKET CONNECTORS



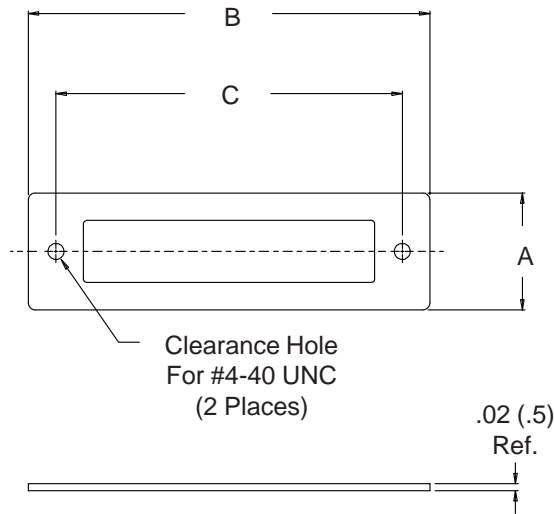
Micro-D interfacial seals are available for metal shell socket connectors. Intended for use as field replacements for damaged seals, these seals are molded from fluorosilicone elastomer and meet NASA outgassing requirements.

Material: Blue fluorosilicone per ZZ-R-765.

Layout	Part Number	A Ref.	B Ref.
9S	000-01-09-132	.330 (8.4)	.180 (4.6)
15S	000-01-15-132	.480 (12.2)	.180 (4.6)
21S	000-01-21-132	.630 (16.0)	.180 (4.6)
25S	000-01-25-132	.730 (18.5)	.180 (4.6)
31S	000-01-31-132	.880 (22.4)	.180 (4.6)
37S	000-01-37-132	1.030 (26.2)	.180 (4.6)
51S	000-01-51-132	.976 (24.8)	.223 (5.7)
100S	000-01-00-132	1.386 (35.2)	.270 (6.9)

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells and Accessories EMI Gasket For Micro Backshells



**Material: Metalastic**

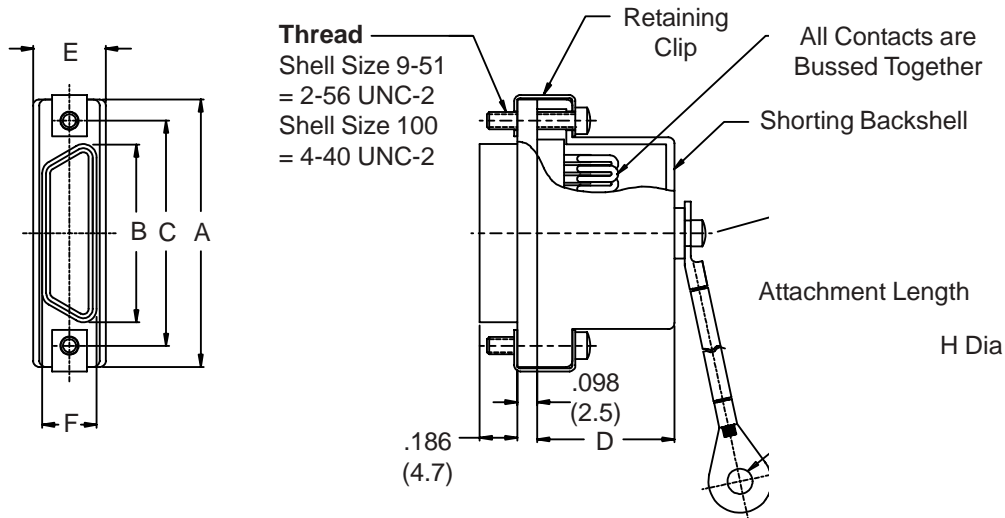
Shell Size	Part Number	A	B	C
9	559-005-01	.46 (11.7)	.90 (22.9)	.565 (14.4)
15	559-005-02	.46 (11.7)	1.05 (26.7)	.715 (18.2)
21	559-005-03	.46 (11.7)	1.20 (30.5)	.865 (22.0)
25	559-005-04	.46 (11.7)	1.30 (33.0)	.965 (24.5)
31	559-005-05	.46 (11.7)	1.48 (37.6)	1.115 (28.3)
37	559-005-06	.46 (11.7)	1.60 (40.6)	1.265 (32.1)
51	559-005-07	.50 (12.7)	1.55 (39.4)	1.215 (30.9)
100	559-005-08	.55 (14.0)	2.29 (58.2)	1.800 (45.7)

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells and Accessories Shorting Plug



Micro-D  
Accessories



**TABLE I**

Shell Size	A	B	C	D ±.003 (0.8)		E	F
9	.775 (19.7)	.333 (8.5)	.565 (14.4)	.32 (8.1)	.36 (9.1)	.185 (4.7)	
15	.925 (23.5)	.483 (12.3)	.715 (18.2)	.44 (11.2)	.36 (9.1)	.185 (4.7)	
21	1.075 (27.3)	.633 (16.1)	.865 (22.0)	.56 (14.2)	.36 (9.1)	.185 (4.7)	
25	1.175 (29.8)	.733 (18.6)	.965 (24.5)	.62 (15.7)	.36 (9.1)	.185 (4.7)	
31	1.325 (33.7)	.883 (22.4)	1.115 (28.3)	.68 (17.3)	.36 (9.1)	.185 (4.7)	
37	1.475 (37.5)	1.033 (26.2)	1.265 (32.1)	.72 (18.3)	.36 (9.1)	.185 (4.7)	
51	1.425 (36.2)	.983 (25.0)	1.215 (30.9)	.75 (19.1)	.40 (10.2)	.228 (5.8)	
100	2.160 (54.9)	1.383 (35.1)	1.800 (45.7)	.81 (20.6)	.45 (11.4)	.271 (6.9)	

**TABLE II**

Dash No.	H Dia
01	.140 (3.6)
02	.182 (4.6)
03	.191 (4.9)
04	.197 (5.0)
05	.167 (4.2)
06	.125 (3.2)

## HOW TO ORDER

Series-Basic Part Number	Shell Size (Table I)	Contact Type	Shell Plating Table III*	Hardware Options *	Attachment Type	Attach. Length
<b>177-007</b>	<b>9</b>	<b>P</b> – Pin <b>S</b> – Socket	<b>1</b> – Cadmium <b>2</b> – Nickel <b>4</b> – Black Anodize <b>5</b> – Gold <b>6</b> – Chem Film	<b>B</b> – (2) Male Fillister Head <b>E</b> – (2) Extended Jackscrew <b>H</b> – (2) Male Hex Socket <b>F</b> – (2) Female Jackpost <b>N</b> – No Hardware	<b>F</b> – Wire Rope, Nylon Jacket <b>H</b> – Wire Rope, Teflon Jacket <b>N</b> – No Attachment <b>R</b> – Wire Rope, PVC Jacket <b>T</b> – Wire Rope, No Jacket	In One Inch Increments
	<b>15</b>					
	<b>21</b>					
	<b>25</b>					
	<b>31</b>					
	<b>37</b>					
	<b>51</b>					
	<b>100</b>					
<b>Sample Part Number:</b>						
<b>177-007</b>	<b>9</b>	<b>P</b>	<b>1</b>	<b>B</b>	<b>H</b>	<b>6</b>

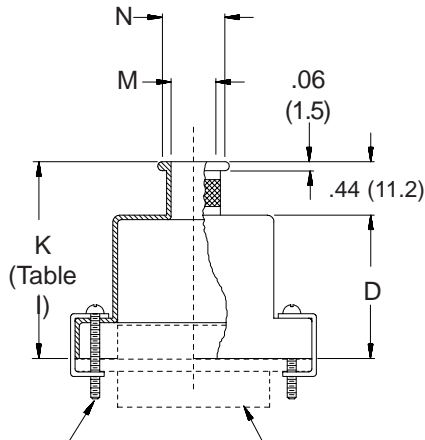
\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

Metric dimensions (mm) are indicated in parentheses.



# Micro-D Backshells and Accessories Standard EMI Backshell

**STYLE T - TOP ENTRY**

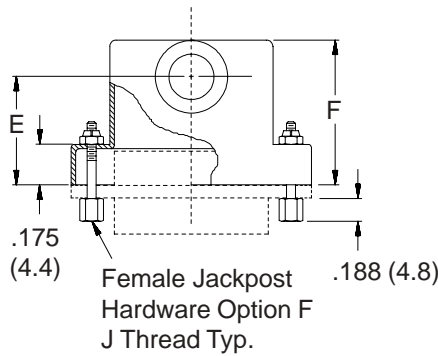


Jackscrew  
Male Fillister Head  
Hardware Option B  
J Thread Typ.

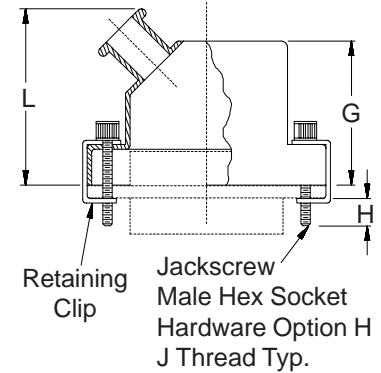
Connector  
Shown For  
Reference Only  
J Thread Typ.

**Note:** It is easy to exceed the maximum allowable wire bundle diameter for the cable entry on these miniaturized backshells. Please see the table on B-20 for assistance, or chose an elliptical backshell entry design instead.

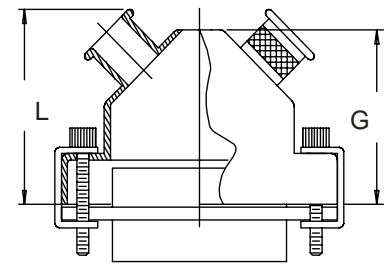
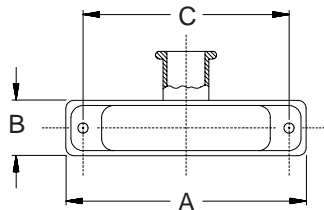
**STYLE S - SIDE ENTRY**



**STYLE E - 45° ENTRY**



**STYLE D - DUAL 45° ENTRY**



## HOW TO ORDER

Series	Cable Entry Style	Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *	Cable Entry (Table II)	Qwik-Ty Option	Band Option	
500	T - Top	010	C - Black Anodize	09	B - (2) male fillister head	04	S  (Omit for Standard)	B  600-052 Band Supplied (Omit if Not Required)	
	S - Side		E - Chem. Film	15	E - (2) extended jackscrew	05			
	E - 45°		J - Gold Iridite Over Cadmium Over Electroless Nickel	21	H - (2) male hex socket	06			
	D - Dual 45°		45°	M - Electroless Nickel	31	F - (2) female jackpost			07
				NF - Cadmium, Olive Drab Over Electroless Nickel	37				08
				Z2 - Gold	51				09
					100				10
									11
									12
	<b>Sample Part Number:</b>								
500	T	010	M	21	B	06	S	B	

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells and Accessories

## Standard EMI Backshell



Series 500-010 EMI Backshells are intended for use on all standard metal shell Micro-D connectors conforming to MIL-DTL-83513. Shield termination is fast and reliable using EMI bands and banding tools, ordered separately.

**TABLE I - DIMENSIONS**

SHELL SIZE	A	B	C	D	E	F
09	.775 (19.7)	.36 (9.1)	.565 (14.4)	.32 (8.1)	.435 (11.0)	.607 (15.4)
15	.925 (23.5)	.36 (9.1)	.715 (18.2)	.44 (11.2)	.440 (11.2)	.643 (16.3)
21	1.075 (27.3)	.36 (9.1)	.865 (22.0)	.56 (14.2)	.458 (11.6)	.677 (17.2)
25	1.175 (29.8)	.36 (9.1)	.965 (24.5)	.62 (15.7)	.483 (12.3)	.718 (18.2)
31	1.325 (33.7)	.36 (9.1)	1.115 (28.3)	.68 (17.3)	.476 (12.1)	.726 (18.4)
37	1.475 (37.5)	.36 (9.1)	1.265 (32.1)	.72 (18.3)	.478 (12.2)	.744 (18.9)
51	1.425 (36.2)	.40 (10.2)	1.215 (30.9)	.75 (19.1)	.548 (13.9)	.829 (21.1)
100	2.160 (54.9)	.45 (11.4)	1.800 (45.7)	.81 (20.6)	.687 (17.4)	.984 (25.0)

SHELL SIZE	G	H	J THREAD	K ±.03 (0.8)	L MAX
09	.650 (16.5)	.154 (3.9)	2-56 UNC-2	.75 (19.1)	1.00 (25.4)
15	.700 (17.8)	.154 (3.9)	2-56 UNC-2	.88 (22.4)	1.03 (26.2)
21	.735 (18.7)	.154 (3.9)	2-56 UNC-2	1.00 (25.4)	1.05 (26.7)
25	.800 (20.3)	.154 (3.9)	2-56 UNC-2	1.06 (26.9)	1.09 (27.7)
31	.860 (21.8)	.154 (3.9)	2-56 UNC-2	1.12 (28.4)	1.13 (28.7)
37	.925 (23.5)	.154 (3.9)	2-56 UNC-2	1.16 (29.5)	1.23 (31.3)
51	.975 (24.8)	.154 (3.9)	2-56 UNC-2	1.19 (30.2)	1.25 (31.8)
100	1.050 (26.7)	.194 (4.9)	4-40 UNC-2	1.25 (31.8)	1.32 (33.5)

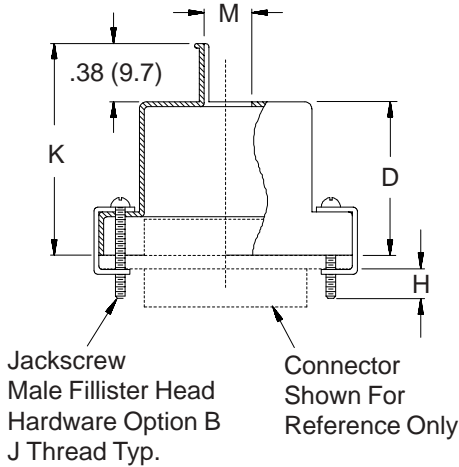
**TABLE II - DIMENSIONS**

Cable Entry	Shell Size	M Entry Dia	N Dia
04	09 THRU 100	.125 (3.2)	.281 (7.1)
05	09 THRU 100	.156 (4.0)	.312 (7.9)
06	09 THRU 100	.188 (4.8)	.344 (8.7)
07	09 THRU 100	.219 (5.6)	.375 (9.5)
08	09 THRU 100	.250 (6.4)	.406 (10.3)
09	31 THRU 100	.281 (7.1)	.437 (11.1)
10	51 THRU 100	.312 (7.9)	.469 (11.9)
11	100 ONLY	.344 (8.7)	.500 (12.7)
12	100 ONLY	.375 (9.5)	.531 (13.5)

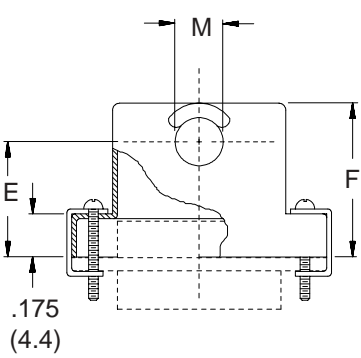
Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells Strain Relief Backshell

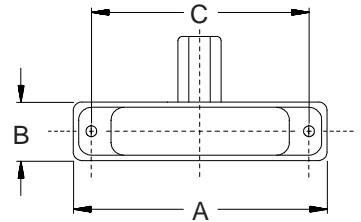
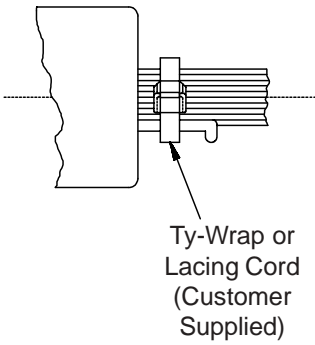
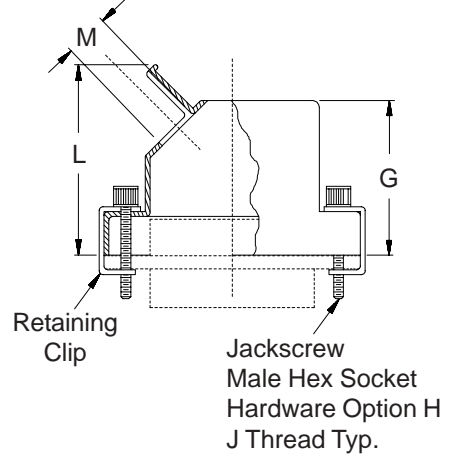
**STYLE T - TOP ENTRY**



**STYLE S - SIDE ENTRY**



**STYLE E - 45° ENTRY**



Metric dimensions (mm) are indicated in parentheses.

## HOW TO ORDER

Series	Cable Entry Style	Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *
500	T – Top S – Side E – 45°	012	<b>C</b> – Black Anodize <b>E</b> – Chem. Film <b>J</b> – Gold Iridite Over Cadmium Over Electroless Nickel <b>M</b> – Electroless Nickel <b>NF</b> – Cadmium, Olive Drab Over Electroless Nickel <b>Z2</b> – Gold	<b>09</b> <b>15</b> <b>21</b> <b>25</b> <b>31</b> <b>37</b> <b>51</b> <b>100</b>	<b>B</b> – (2) male fillister head <b>E</b> – (2) extended jackscrew <b>H</b> – (2) male hex socket <b>F</b> – (2) female jackpost
<b>Sample Part Number:</b>					
500	T	012	M	21	B

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

# Micro-D Backshells Strain Relief Backshell



Micro-D  
Accessories

Machined aluminum strain relief backshells are intended for applications where shielding is not required.

**TABLE I - DIMENSIONS**

SHELL SIZE	A	B	C	D	E	F
09	.775 (19.7)	.36 (9.1)	.565 (14.4)	.32 (8.1)	.435 (11.0)	.607 (15.4)
15	.925 (23.5)	.36 (9.1)	.715 (18.2)	.44 (11.2)	.440 (11.2)	.643 (16.3)
21	1.075 (27.3)	.36 (9.1)	.865 (22.0)	.56 (14.2)	.458 (11.6)	.677 (17.2)
25	1.175 (29.8)	.36 (9.1)	.965 (24.5)	.62 (15.7)	.483 (12.3)	.718 (18.2)
31	1.325 (33.7)	.36 (9.1)	1.115 (28.3)	.68 (17.3)	.476 (12.1)	.726 (18.4)
37	1.475 (37.5)	.36 (9.1)	1.265 (32.1)	.72 (18.3)	.478 (12.2)	.744 (18.9)
51	1.425 (36.2)	.40 (10.2)	1.215 (30.9)	.75 (19.1)	.548 (13.9)	.829 (21.1)
100	2.160 (54.9)	.45 (11.4)	1.800 (45.7)	.81 (20.6)	.687 (17.4)	.984 (25.0)

SHELL SIZE	G	H	J THREAD	K ±.03 (0.8)	L MAX	M Dia ±.005 (0.1)
09	.650 (16.5)	.154 (3.9)	2-56 UNC-2	.70 (17.8)	.90 (22.9)	.156 (4.0)
15	.700 (17.8)	.154 (3.9)	2-56 UNC-2	.82 (20.8)	.96 (24.4)	.188 (4.8)
21	.735 (18.7)	.154 (3.9)	2-56 UNC-2	.94 (23.9)	.99 (25.1)	.219 (5.6)
25	.800 (20.3)	.154 (3.9)	2-56 UNC-2	1.00 (25.4)	1.05 (26.7)	.250 (6.4)
31	.860 (21.8)	.154 (3.9)	2-56 UNC-2	1.06 (26.9)	1.08 (27.4)	.265 (6.7)
37	.925 (23.5)	.154 (3.9)	2-56 UNC-2	1.10 (27.9)	1.12 (28.9)	.281 (7.1)
51	.975 (24.8)	.154 (3.9)	2-56 UNC-2	1.13 (28.7)	1.21 (30.7)	.312 (7.9)
100	1.050 (26.7)	.194 (4.9)	4-40 UNC-2	1.19 (30.2)	1.28 (32.5)	.375 (9.5)

Metric dimensions (mm) are indicated in parentheses.



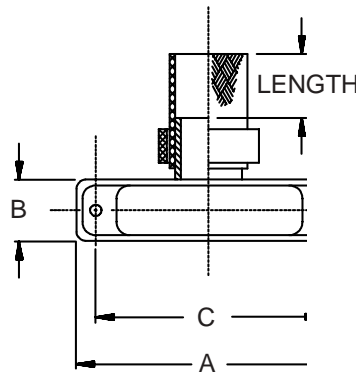
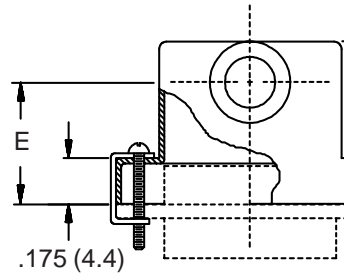
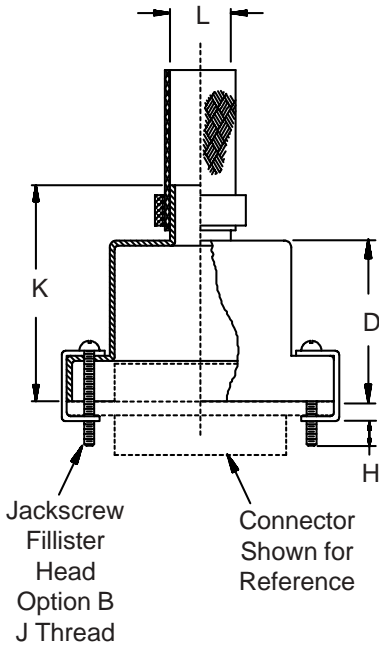
# Micro-D Backshells EMI Backshell with Shield Sock

**STYLE T - TOP ENTRY**

**STYLE S - SIDE ENTRY**

**STYLE E - 45° ENTRY**

Shield Sock:  
Single Layer



Retaining

Jackscrew Hex

Metric dimensions (mm) are indicated in parentheses.

## HOW TO ORDER

Series	Cable Entry Style	Basic Part Number	Shell Plating	Shell Size (Table I)	Hardware Options *	Cable Entry (Table II)	Shield Sock Length
500	T – Top S – Side E – 45°	011	C – Black Anodize	9	B – (2) Male Fillister Head Jackscrews	04	Length in 1 inch increments (e.g. 6 = 6 inches)
			E – Chem. Film	15	H – (2) Male Hex Socket	05	
			J – Gold Iridite Over Cadmium Over	21	F – (2) Female Jackpost	06	
			Electroless Nickel	25	FB – (1) Female Jackpost And (1) Male Jackpost	07	
			M – Electroless Nickel	31	Jackpost	08	
			NF – Cadmium, Olive Drab Over	37	FH – (1) Female Jackpost and (1) Male Hex Socket	09	
			Electroless Nickel	51		10	
			Z2 – Gold	100		11	
<b>Sample Part Number:</b>							
500	T	011	M	21	B	06	6

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

# Micro-D Backshells EMI Backshell with Shield Sock



**TABLE I - DIMENSIONS**

Shell Size	A	B	C	D	E	F
09	.775 (19.7)	.36 (9.1)	.565 (14.4)	.32 (8.1)	.435 (11.0)	.607 (15.4)
15	.925 (23.5)	.36 (9.1)	.715 (18.2)	.44 (11.2)	.440 (11.2)	.643 (16.3)
21	1.075 (27.3)	.36 (9.1)	.865 (22.0)	.56 (14.2)	.458 (11.6)	.677 (17.2)
25	1.175 (29.8)	.36 (9.1)	.965 (24.5)	.62 (15.7)	.483 (12.3)	.718 (18.2)
31	1.325 (33.7)	.36 (9.1)	1.115 (28.3)	.68 (17.3)	.476 (12.1)	.726 (18.4)
37	1.475 (37.5)	.36 (9.1)	1.265 (32.1)	.72 (18.3)	.478 (12.2)	.744 (18.9)
51	1.425 (36.2)	.40 (10.2)	1.215 (30.9)	.75 (19.1)	.548 (13.9)	.829 (21.1)
100	2.160 (54.9)	.45 (11.4)	1.800 (45.7)	.81 (20.6)	.687 (17.4)	.984 (25.0)

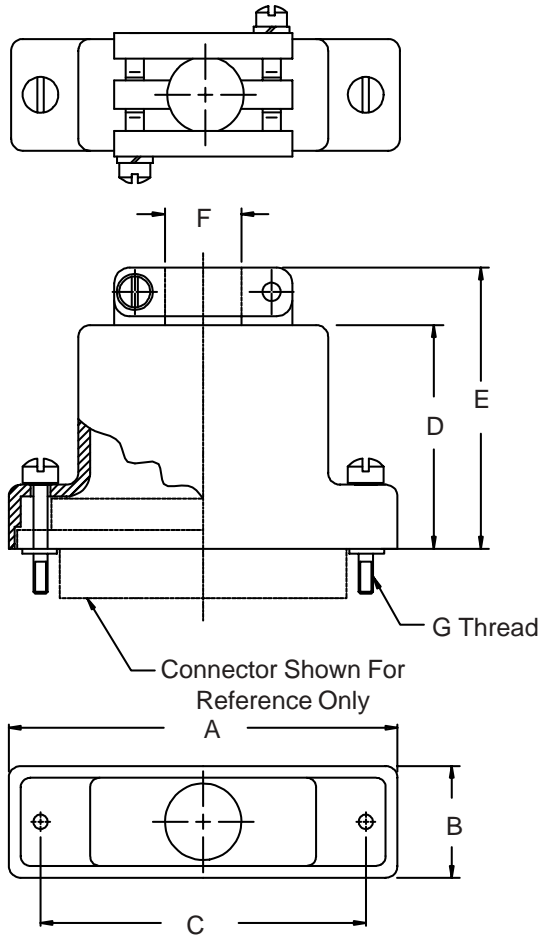
Shell Size	G	H	J Thread	K ±.03 (0.8)	M Max	Max Entry Table II
09	.650 (16.5)	.154 (3.9)	2-56 UNC-2	.75 (19.1)	1.00 (25.4)	08
15	.700 (17.8)	.154 (3.9)	2-56 UNC-2	.88 (22.4)	1.03 (26.2)	08
21	.735 (18.7)	.154 (3.9)	2-56 UNC-2	1.00 (25.4)	1.05 (26.7)	08
25	.800 (20.3)	.154 (3.9)	2-56 UNC-2	1.06 (26.9)	1.09 (27.7)	08
31	.860 (21.8)	.154 (3.9)	2-56 UNC-2	1.12 (28.4)	1.13 (28.7)	09
37	.925 (23.5)	.154 (3.9)	2-56 UNC-2	1.16 (29.5)	1.16 (29.5)	09
51	.975 (24.8)	.154 (3.9)	2-56 UNC-2	1.19 (30.2)	1.19 (30.2)	10
100	1.050 (26.7)	.194 (4.9)	4-40 UNC-2	1.25 (31.8)	1.25 (31.8)	12

**TABLE II - DIMENSIONS**

Dash No.	L Entry
04	.125 (3.2)
05	.156 (4.0)
06	.188 (4.8)
07	.219 (5.6)
08	.250 (6.4)
09	.281 (7.1)
10	.312 (7.9)
11	.344 (8.7)
12	.375 (9.5)

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells Solid EMI Strain Relief Backshell



## HOW TO ORDER

Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *
507-146	C – Black Anodize	09	Omit for (2) male fillister head
	E – Chem. Film	15	
	J – Gold Iridite Over	21	E – (2) extended jackscrew
	Cadmium Over	25	
	Electroless Nickel	31	
	M – Electroless Nickel	37	H – (2) male hex socket
	NF – Cadmium, Olive Drab Over	51	F – (2) female jackpost
Electroless Nickel	100		
Z2 – Gold			
<b>Sample Part Number:</b>			
507-146	M	21	H
* SEE PAGE C-2 FOR COMPLETE INFORMATION			

TABLE I - DIMENSIONS

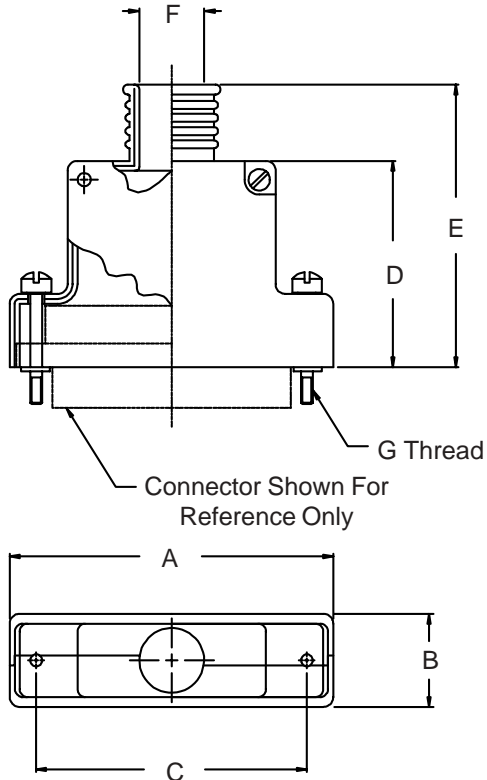
SHELL SIZE	A Max	B Max	C ±.005 (0.1)	D ±.010 (0.3)	E ±.030 (.8)	F ±.005 (0.1)	G THREAD
09	.915 (23.2)	.450 (11.4)	.565 (14.4)	.530 (13.5)	.750 (19.1)	.160 (4.1)	2-56 UNC-2
15	1.065 (27.1)	.450 (11.4)	.715 (18.2)	.580 (14.7)	.800 (20.3)	.190 (4.8)	2-56 UNC-2
21	1.215 (30.9)	.450 (11.4)	.865 (22.0)	.630 (16.0)	.910 (23.1)	.220 (5.6)	2-56 UNC-2
25	1.315 (33.4)	.450 (11.4)	.965 (24.5)	.680 (17.3)	.960 (24.4)	.260 (6.6)	2-56 UNC-2
31	1.465 (37.2)	.450 (11.4)	1.115 (28.3)	.720 (18.3)	1.000 (25.4)	.275 (7.0)	2-56 UNC-2
37	1.615 (41.0)	.450 (11.4)	1.265 (32.1)	.760 (19.3)	1.040 (26.4)	.285 (7.2)	2-56 UNC-2
51	1.565 (39.8)	.495 (12.6)	1.215 (30.9)	.840 (21.3)	1.120 (28.4)	.350 (8.9)	2-56 UNC-2
100	2.305 (58.5)	.540 (13.7)	1.800 (45.7)	.910 (23.1)	1.190 (30.2)	.490 (12.4)	4-40 UNC-2

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells Split EMI Backshell



Micro-D  
Accessories



HOW TO ORDER				
Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *	Band Option
507-145	C – Black Anodize	09	Omit for (2) male fillister head	B  600-057 Band Supplied - (Omit if Not Required)
	E – Chem. Film	15		
	J – Gold Iridite Over Cadmium Over	21		
	Electroless Nickel	25		
	M – Electroless Nickel	31		
	NF – Cadmium, Olive Drab Over	37		
	Electroless Nickel	51		
Z2 – Gold	100	F – (2) female jackpost		
<b>Sample Part Number:</b>				
507-145	M	21	H	B

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

TABLE I - DIMENSIONS

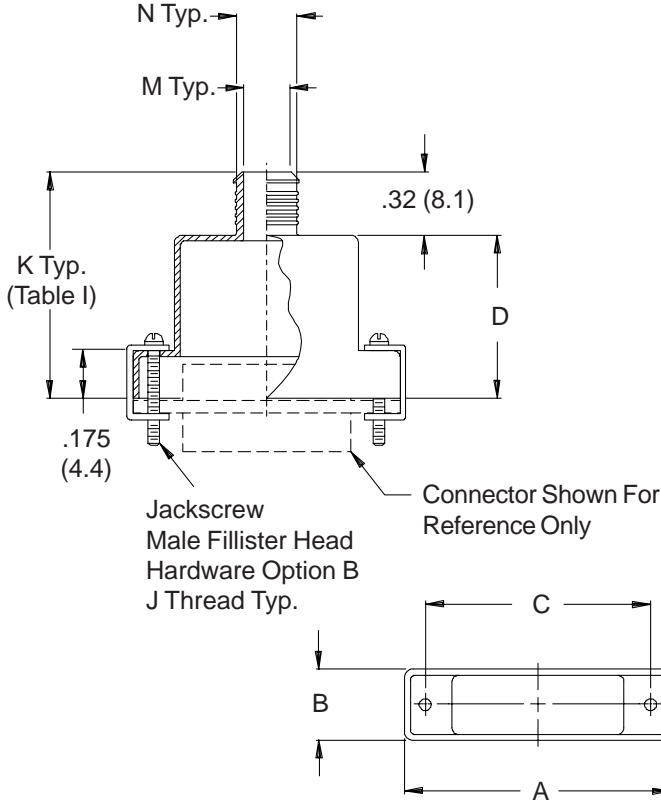
SHELL SIZE	A Max	B Max	C ±.005 (0.1)	D ±.010 (0.3)	E ±.020 (.5)	F ±.005 (0.1)	G THREAD
09	.915 (23.2)	.450 (11.4)	.565 (14.4)	.656 (16.7)	.968 (24.6)	.160 (4.1)	2-56 UNC-2
15	1.065 (27.1)	.450 (11.4)	.715 (18.2)	.718 (18.2)	1.031 (26.2)	.190 (4.8)	2-56 UNC-2
21	1.215 (30.9)	.450 (11.4)	.865 (22.0)	.750 (19.1)	1.062 (27.0)	.220 (5.6)	2-56 UNC-2
25	1.315 (33.4)	.450 (11.4)	.965 (24.5)	.812 (20.6)	1.125 (28.6)	.260 (6.6)	2-56 UNC-2
31	1.465 (37.2)	.450 (11.4)	1.115 (28.3)	.843 (21.4)	1.156 (29.4)	.275 (7.0)	2-56 UNC-2
37	1.615 (41.0)	.450 (11.4)	1.265 (32.1)	.906 (23.0)	1.218 (30.9)	.285 (7.2)	2-56 UNC-2
51	1.565 (39.8)	.495 (12.6)	1.215 (30.9)	.968 (24.6)	1.281 (32.5)	.350 (8.9)	2-56 UNC-2
100	2.305 (58.5)	.540 (13.7)	1.800 (45.7)	1.031 (26.2)	1.343 (34.1)	.490 (12.4)	4-40 UNC-2

Metric dimensions (mm) are indicated in parentheses.

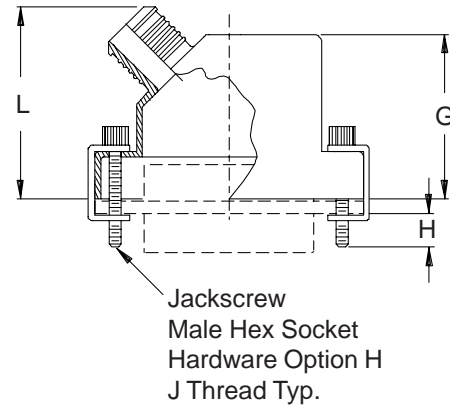


# Micro-D Backshells Composite EMI Backshell

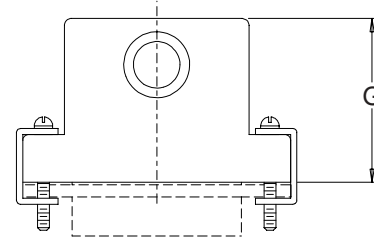
**STYLE T - TOP ENTRY**



**STYLE E - 45° ENTRY**



**STYLE S - SIDE ENTRY**



## HOW TO ORDER

Series	Cable Entry Style	Basic Part No.	Shell Plating	Shell Size (Table I)	Hardware Options *	Cable Entry (Table II)	Qwik-Ty Option	Band Option
507	T - Top	088	XM - Electroless Nickel	9	B - (2) male fillister head	04	S  (Omit for Standard)	B  600-057 Band Supplied - (Omit if Not Required)
	S - Side			15	E - (2) extended jackscrew	05		
	E - 45°			21	H - (2) male hex socket	06		
				25	F - (2) female jackpost	07		
				31		08		
				37		09		
				51		10		
				100		11		
					12			
<b>Sample Part Number:</b>								
507	T	088	XM	21	B	06	S	B

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

# Micro-D Backshells Composite EMI Backshell



Micro-D  
Accessories

Composite shielded backshells offer over 40% weight savings compared to aluminum versions.

Available in a full range of sizes and options, composite backshells are designed for use with Glenair's EMI banding system for shield termination.

These composite backshells meet the requirements of SAE AIR 4567 and MIL-C-85049.

**Material:** High Grade Engineering Thermoplastic

**Finish:** Electroless Nickel

**TABLE I - DIMENSIONS**

SHELL SIZE	A	B	C	D	G
09	.775 (19.7)	.36 (9.1)	.565 (14.4)	.43 (10.9)	.650 (16.5)
15	.925 (23.5)	.36 (9.1)	.715 (18.2)	.44 (11.2)	.700 (17.8)
21	1.075 (27.3)	.36 (9.1)	.865 (22.0)	.56 (14.2)	.735 (18.7)
25	1.175 (29.8)	.36 (9.1)	.965 (24.5)	.62 (15.7)	.800 (20.3)
31	1.325 (33.7)	.36 (9.1)	1.115 (28.3)	.68 (17.3)	.860 (21.8)
37	1.475 (37.5)	.36 (9.1)	1.265 (32.1)	.72 (18.3)	.925 (23.5)
51	1.425 (36.2)	.40 (10.2)	1.215 (30.9)	.75 (19.1)	.975 (24.8)
100	2.160 (54.9)	.45 (11.4)	1.800 (45.7)	.81 (20.6)	1.050 (26.7)

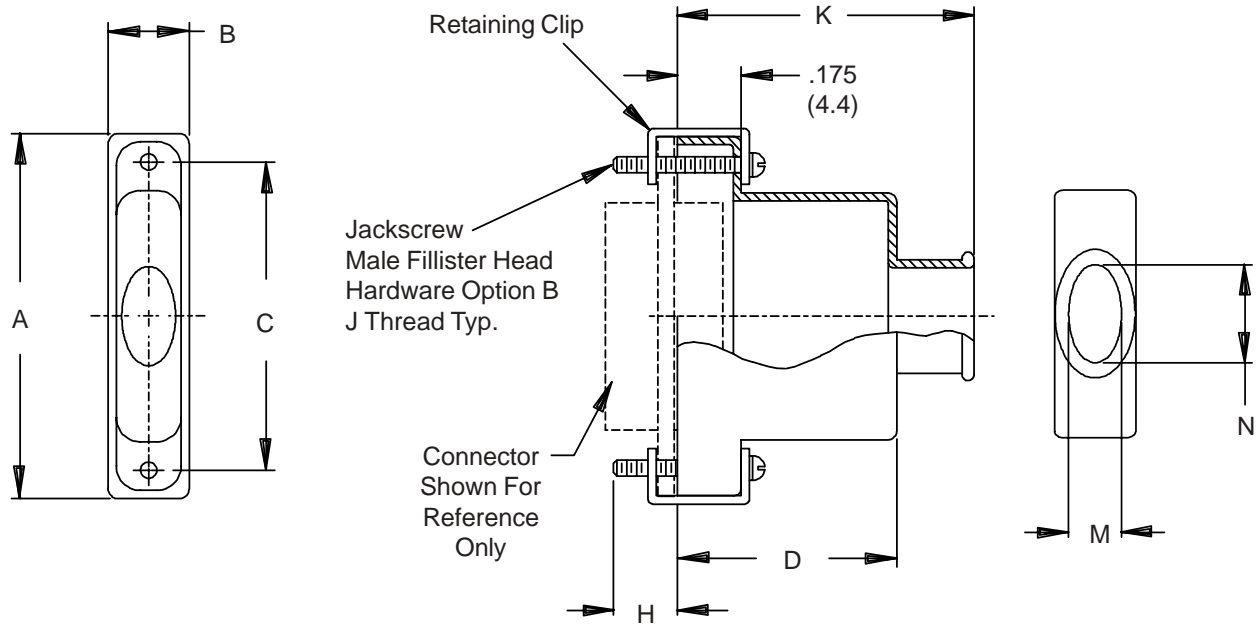
SHELL SIZE	H	J THREAD	K ±.03 (0.8)	L MAX
09	.154 (3.9)	2-56 UNC-2	.75 (19.1)	1.00 (25.4)
15	.154 (3.9)	2-56 UNC-2	.76 (19.3)	1.03 (26.2)
21	.154 (3.9)	2-56 UNC-2	.88 (22.4)	1.05 (26.7)
25	.154 (3.9)	2-56 UNC-2	.94 (23.9)	1.09 (27.7)
31	.154 (3.9)	2-56 UNC-2	1.00 (25.4)	1.13 (28.7)
37	.154 (3.9)	2-56 UNC-2	1.04 (26.4)	1.16 (29.5)
51	.154 (3.9)	2-56 UNC-2	1.07 (27.2)	1.25 (31.8)
100	.194 (4.9)	4-40 UNC-2	1.13 (28.7)	1.32 (33.5)

**TABLE II - DIMENSIONS**

Cable Entry	Shell Size	M Entry Dia	N Dia
04	09 THRU 100	.125 (3.2)	.219 (5.6)
05	09 THRU 100	.156 (4.0)	.250 (6.4)
06	09 THRU 100	.188 (4.8)	.281 (7.1)
07	09 THRU 100	.219 (5.6)	.313 (8.0)
08	09 THRU 100	.250 (6.4)	.344 (8.7)
09	31 THRU 100	.281 (7.1)	.375 (9.5)
10	51 THRU 100	.312 (7.9)	.406 (10.3)
11	100 ONLY	.344 (8.7)	.438 (11.1)
12	100 ONLY	.375 (9.5)	.469 (11.9)

Metric dimensions (mm)  
are indicated in  
parentheses.

# Micro-D Backshells Elliptical Entry EMI Backshell



## HOW TO ORDER

Series	Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *	Band Option
500	047	C – Black Anodize	09	B – (2) male fillister head	B  600-052 Band Supplied - (Omit if Not Required)
		E – Chem. Film	15	E – (2) extended jackscrew	
		J – Gold Iridite Over Cadmium Over Electroless Nickel	21	H – (2) male hex socket	
		M – Electroless Nickel	25	F – (2) female jackpost	
		NF – Cadmium, Olive Drab Over Electroless Nickel	31		
		Z2 – Gold	37		
			51		
			100		
<b>Sample Part Number:</b>					
500	— 047	M	21	B	B
* SEE PAGE C-2 FOR COMPLETE INFORMATION					

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells

## Elliptical Entry EMI Backshell



Elliptical entry Micro-D backshells offer greater wire accomodation than round entry backshells. These rugged aluminum backshells are designed for use with Glenair's EMI bands for shield termination.

- **Elliptical Entry for Increased Wire Bundle Size**
- **Aluminum Alloy**
- **Supplied with Mounting Hardware**

**TABLE I - DIMENSIONS**

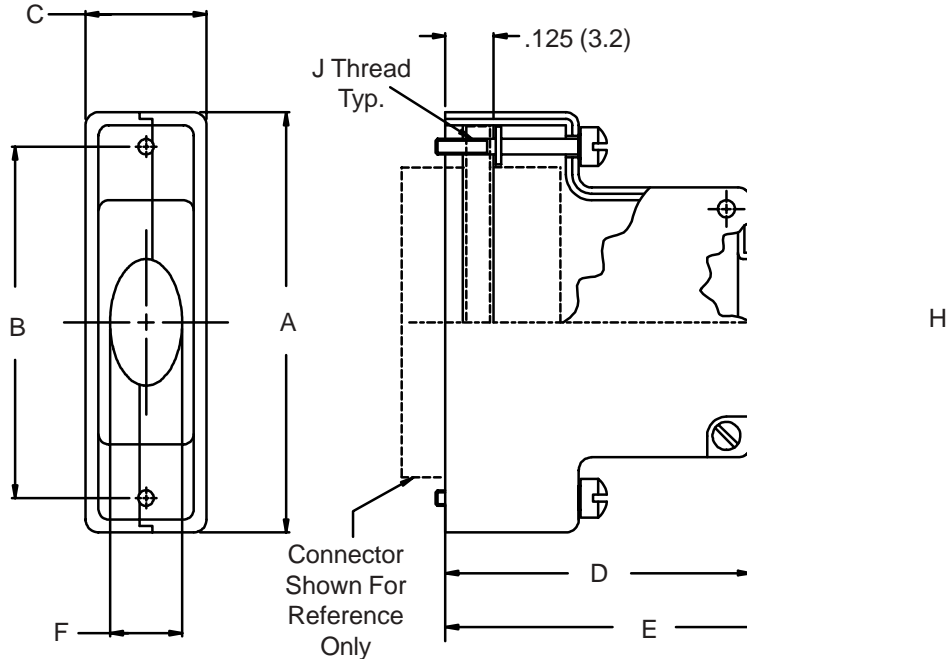
SHELL SIZE	A	B	C	D	H
09	.775 (19.7)	.34 (8.6)	.565 (14.4)	.32 (8.1)	.154 (3.9)
15	.925 (23.5)	.34 (8.6)	.715 (18.2)	.44 (11.2)	.154 (3.9)
21	1.075 (27.3)	.34 (8.6)	.865 (22.0)	.56 (14.2)	.154 (3.9)
25	1.175 (29.8)	.34 (8.6)	.965 (24.5)	.62 (15.7)	.154 (3.9)
31	1.325 (33.7)	.34 (8.6)	1.115 (28.3)	.68 (17.3)	.154 (3.9)
37	1.475 (37.5)	.34 (8.6)	1.265 (32.1)	.72 (18.3)	.154 (3.9)
51	1.425 (36.2)	.38 (9.7)	1.215 (30.9)	.75 (19.1)	.154 (3.9)
100	2.160 (54.9)	.43 (10.9)	1.800 (45.7)	.81 (20.6)	.194 (4.9)

SHELL SIZE	J THREAD	± .03	K (0.8)	M	N
09	2-56 UNC-2	.75	(19.1)	.281 (7.1)	.312 (7.9)
15	2-56 UNC-2	.88	(22.4)	.281 (7.1)	.420 (10.7)
21	2-56 UNC-2	1.00	(25.4)	.281 (7.1)	.590 (15.0)
25	2-56 UNC-2	1.06	(26.9)	.281 (7.1)	.690 (17.5)
31	2-56 UNC-2	1.12	(28.4)	.281 (7.1)	.820 (20.8)
37	2-56 UNC-2	1.16	(29.5)	.281 (7.1)	.970 (24.6)
51	2-56 UNC-2	1.19	(30.2)	.312 (7.9)	.920 (23.4)
100	4-40 UNC-2	1.25	(31.8)	.360 (9.1)	1.290 (32.8)

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells Elliptical Entry EMI Split Banding Backshell



## HOW TO ORDER

Series	Basic Part Number	Shell Plating *	Shell Size (Table I)	Dash No. (Table II)	Hardware Options *	Band Option
507	164	C – Black Anodize	09	04	B – (2) male fillister head	B 600-052 Band Supplied - (Omit if Not Required)
		E – Chem. Film	15	05	E – (2) extended jackscrew	
		J – Gold Iridite Over Cadmium Over Electroless Nickel	21	06	H – (2) male hex socket	
		M – Electroless Nickel	25	07	F – (2) female jackpost	
		NF – Cadmium, Olive Drab Over Electroless Nickel	31	08		
		Z2 – Gold	37	09		
			51	10		
			100	11		
				12		
				13		
				14		
				15		
				16		
<b>Sample Part Number:</b>						
507	— 164	M	21	05	B	B

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells

## Elliptical Entry EMI Split Banding Backshell



Elliptical entry Micro-D backshells offer greater wire accommodation than round entry backshells. These rugged aluminum backshells are designed for use with Glenair's EMI bands for shield termination.

- Elliptical Entry for Increased Wire Bundle Size
- Aluminum Alloy
- Supplied with Mounting Hardware

**TABLE I - DIMENSIONS**

SHELL SIZE	A		B		C	D		
	$\pm .005$	(0.1)	$\pm .010$	(.3)		$\pm .010$	(.3)	
09	.915	(23.2)	.565	(14.4)	.450	(11.4)	.656	(16.7)
15	1.065	(27.1)	.715	(18.2)	.450	(11.4)	.718	(18.2)
21	1.215	(30.9)	.865	(22.0)	.450	(11.4)	.750	(19.1)
25	1.315	(33.4)	.965	(24.5)	.450	(11.4)	.812	(20.6)
31	1.465	(37.2)	1.115	(28.3)	.450	(11.4)	.843	(21.4)
37	1.615	(41.0)	1.265	(32.1)	.450	(11.4)	.906	(23.0)
51	1.565	(39.8)	1.215	(30.9)	.450	(11.4)	.968	(24.6)
100	2.305	(58.5)	1.800	(45.7)	.540	(13.7)	1.031	(26.2)

SHELL SIZE	E Dia		F Dia		G THREAD	MAX DASH NO. (TABLE II)
	$\pm .020$	(.5)	$\pm .010$	(.3)		
09	.968	(24.6)	.160	(4.1)	2-56 UNC-2	04
15	1.031	(26.2)	.190	(4.8)	2-56 UNC-2	05
21	1.062	(27.0)	.220	(5.6)	2-56 UNC-2	06
25	1.125	(28.6)	.260	(6.6)	2-56 UNC-2	08
31	1.156	(29.4)	.275	(7.0)	2-56 UNC-2	10
37	1.218	(30.9)	.285	(7.2)	2-56 UNC-2	13
51	1.281	(32.5)	.350	(8.9)	2-56 UNC-2	12
100	1.343	(34.1)	.490	(12.4)	4-40 UNC-2	16

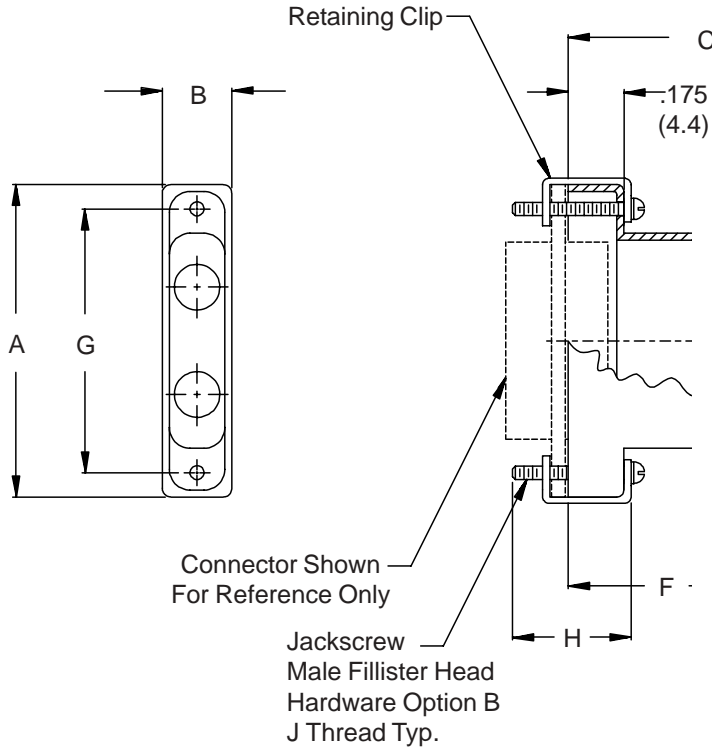
**TABLE II - DIMENSIONS**

DASH NO.	H	
04	.250	(6.4)
05	.312	(7.9)
06	.375	(9.5)
07	.437	(11.1)
08	.500	(12.7)
09	.562	(14.3)
10	.625	(15.9)
11	.688	(17.5)
12	.750	(19.1)
13	.812	(20.6)
14	.875	(22.2)
15	.938	(23.8)
16	1.000	(25.4)

Metric dimensions (mm) are indicated in parentheses.



# Micro-D Backshells Dual Entry EMI Backshell



E Typ D Typ.

Metric dimensions (mm)  
are indicated in parentheses.

## HOW TO ORDER

Series	Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *	Band Option
507	142	<b>C</b> – Black Anodize <b>E</b> – Chem. Film <b>J</b> – Gold Iridite Over Cadmium Over Electroless Nickel <b>M</b> – Electroless Nickel <b>NF</b> – Cadmium, Olive Drab Over Electroless Nickel <b>Z2</b> – Gold	<b>21</b> <b>25</b> <b>31</b> <b>37</b> <b>51</b> <b>100</b>	<b>B</b> – (2) male fillister head <b>E</b> – (2) extended jackscrew <b>H</b> – (2) male hex socket <b>F</b> – (2) female jackpost	<b>B</b>  Two 600-052 Bands Supplied (Omit if Not Required)
<b>Sample Part Number:</b>					
507	142	M	21	B	B
* SEE PAGE C-2 FOR COMPLETE INFORMATION					

# Micro-D Backshells Dual Entry EMI Backshell



Micro-D  
Accessories

Dual entry backshells provide two cable entries for branched cable assemblies and daisy chain applications. These backshells are designed for use with Glenair's EMI banding system.

- Two Cable Entries for Daisy Chain
- EMI Shielded
- One-Piece Machined Aluminum Construction
- Supplied with Mounting Hardware

See Part Number 500D001  
(Page C-8) For Dual 45°  
Entry Backshells

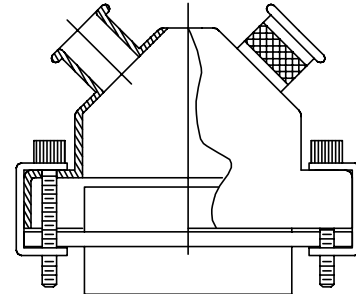


TABLE I - DIMENSIONS

SHELL SIZE	A	B	C	D Dia	E Dia
21	1.075 (27.3)	.34 (8.6)	1.000 (25.4)	.281 (7.1)	.125 (3.2)
25	1.175 (29.8)	.34 (8.6)	1.060 (26.9)	.344 (8.7)	.188 (4.8)
31	1.325 (33.7)	.34 (8.6)	1.120 (28.4)	.406 (10.3)	.250 (6.4)
37	1.475 (37.5)	.34 (8.6)	1.160 (29.5)	.500 (12.7)	.344 (8.7)
51	1.425 (36.2)	.38 (9.7)	1.190 (30.2)	.469 (11.9)	.312 (7.9)
100	2.160 (54.9)	.43 (10.9)	1.250 (31.8)	.688 (17.5)	.500 (12.7)

SHELL SIZE	F	G	H	J THREAD
21	.560 (14.2)	.865 (22.0)	.438 (11.1)	2-56 UNC-2
25	.620 (15.7)	.965 (24.5)	.438 (11.1)	2-56 UNC-2
31	.680 (17.3)	1.115 (28.3)	.438 (11.1)	2-56 UNC-2
37	.720 (18.3)	1.265 (32.1)	.438 (11.1)	2-56 UNC-2
51	.750 (19.1)	1.215 (30.9)	.438 (11.1)	2-56 UNC-2
100	.810 (20.6)	1.800 (45.7)	.469 (11.9)	4-40 UNC-2

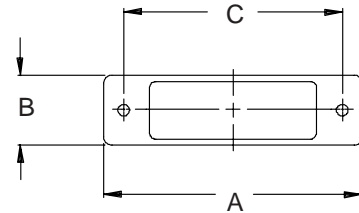
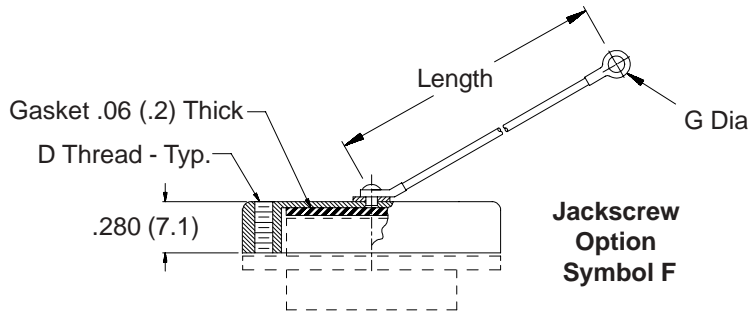
Metric dimensions (mm) are indicated in parentheses.



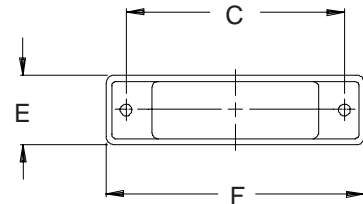
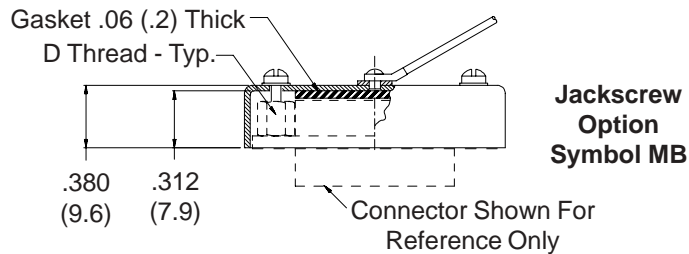


# Micro-D Backshells Protective Cover

## FEMALE THREADS: FOR USE WITH MICRO-D'S WITH JACKSCREWS



## MALE THREADS: FOR USE WITH MICRO-D'S WITH JACKPOSTS



### HOW TO ORDER

Series-Basic Part Number	Shell Plating *	Shell Size (Table I)	Jackscrew Option	Attachment Type	Attach. Length	Dash No. (Table II)
<b>500-017</b>	<b>C</b> – Black Anodize	<b>09</b>	<b>MB</b> – Fillister (slot) head <b>MH</b> – Allen (hex) head	<b>F</b> – Wire Rope, Nylon Jacket	In One Inch	<b>01</b>
	<b>E</b> – Chem. Film	<b>15</b>				<b>02</b>
	<b>J</b> – Gold Iridite Over Cadmium Over	<b>21</b>	<b>F</b> – Female threads	<b>H</b> – Wire Rope, Teflon Jacket	Incre- ments	<b>03</b>
		<b>25</b>				<b>04</b>
	<b>M</b> – Electroless Nickel	<b>31</b>		<b>N</b> – No Attachment		<b>05</b>
	<b>NF</b> – Cadmium, Olive Drab Over	<b>37</b>		<b>R</b> – Wire Rope, PVC Jacket		<b>06</b>
	<b>Z2</b> – Gold	<b>51</b>		<b>T</b> – Wire Rope, No Jacket		
		<b>100</b>				
<b>Sample Part Number:</b>						
<b>500-017</b>	<b>M</b>	<b>31</b>	<b>MB</b>	<b>F</b>	<b>6</b>	<b>01</b>

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

Metric dimensions (mm) are indicated in parentheses.

# Micro-D Backshells Protective Cover



Micro-D  
Accessories

**TABLE I - DIMENSIONS**

SHELL SIZE	A	B	C	D Thread	E Max	F Max
09	.775 (19.7)	.36 (9.1)	.565 (14.4)	2-56 UNC	.453 (11.5)	.930 (23.6)
15	.925 (23.5)	.36 (9.1)	.715 (18.2)	2-56 UNC	.453 (11.5)	1.080 (27.4)
21	1.075 (27.3)	.36 (9.1)	.865 (22.0)	2-56 UNC	.453 (11.5)	1.230 (31.2)
25	1.175 (29.8)	.36 (9.1)	.965 (24.5)	2-56 UNC	.453 (11.5)	1.330 (33.8)
31	1.325 (33.7)	.36 (9.1)	1.115 (28.3)	2-56 UNC	.453 (11.5)	1.480 (37.6)
37	1.475 (37.5)	.36 (9.1)	1.265 (32.1)	2-56 UNC	.453 (11.5)	1.630 (41.4)
51	1.425 (36.2)	.40 (10.2)	1.215 (30.9)	2-56 UNC	.496 (12.6)	1.580 (40.1)
100	2.160 (54.9)	.45 (11.4)	1.800 (45.7)	4-40 UNC	.539 (13.7)	2.315 (58.8)

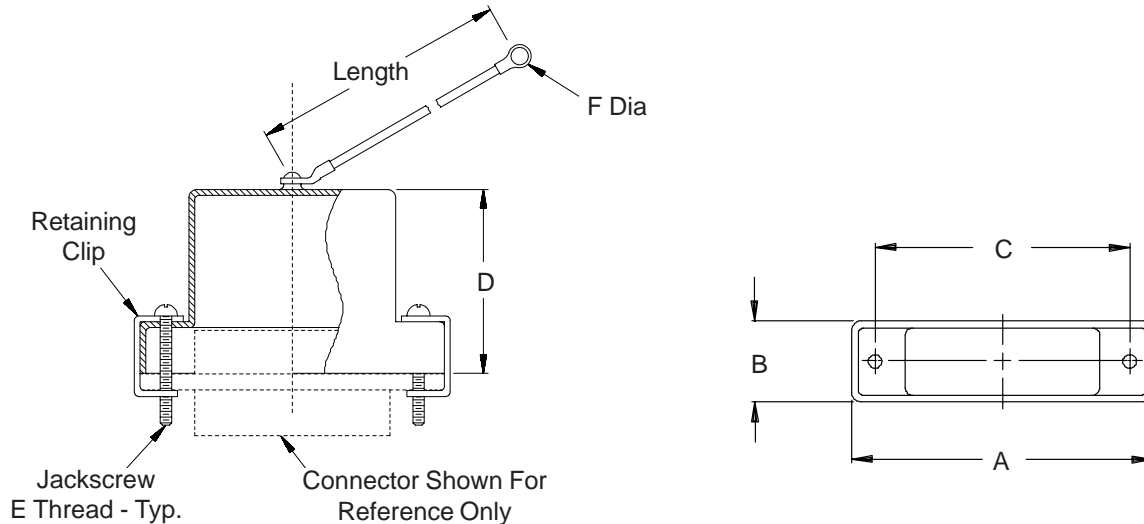
**TABLE II - DIMENSIONS**

Dash No.	G Dia
01	.140 (3.6)
02	.182 (4.6)
03	.191 (4.9)
04	.197 (5.0)
05	.167 (4.2)
06	.125 (3.2)

Metric dimensions (mm) are indicated in parentheses.



# Micro-D Backshells Shorting Backshell



**TABLE I - DIMENSIONS**

SHELL SIZE	A	B	C	D ±.003 (0.8)		E Thread
09	.775 (19.7)	.36 (9.1)	.565 (14.4)	.32	(8.1)	2-56 UNC-2
15	.925 (23.5)	.36 (9.1)	.715 (18.2)	.44	(11.2)	2-56 UNC-2
21	1.075 (27.3)	.36 (9.1)	.865 (22.0)	.56	(14.2)	2-56 UNC-2
25	1.175 (29.8)	.36 (9.1)	.965 (24.5)	.62	(15.7)	2-56 UNC-2
31	1.325 (33.7)	.36 (9.1)	1.115 (28.3)	.68	(17.3)	2-56 UNC-2
37	1.475 (37.5)	.36 (9.1)	1.265 (32.1)	.72	(18.3)	2-56 UNC-2
51	1.425 (36.2)	.40 (10.2)	1.215 (30.9)	.75	(19.1)	2-56 UNC-2
100	2.160 (54.9)	.45 (11.4)	1.800 (45.7)	.81	(20.6)	4-40 UNC-2

**TABLE II - DIMENSIONS**

Dash No.	F Dia
00	n/a
01	.140 (3.6)
02	.182 (4.6)
03	.191 (4.9)
04	.197 (5.0)
05	.167 (4.2)
06	.125 (3.2)

Metric dimensions (mm) are indicated in parentheses.

## HOW TO ORDER

Series-Basic Part Number	Shell Plating *	Shell Size (Table I)	Hardware Options *	Attachment Type	Attach. Length	Dash No. (Table II)
<b>500-016</b>	<b>C</b> – Black Anodize	<b>09</b>	<b>B</b> – (2) male fillister head	<b>F</b> – Wire Rope, Nylon Jacket	In One	<b>00</b> *
	<b>E</b> – Chem. Film	<b>15</b>			Inch	<b>01</b>
	<b>J</b> – Gold Iridite Over	<b>21</b>	<b>E</b> – (2) extended jackscrew	<b>H</b> – Wire Rope, Teflon Jacket	Increments	<b>02</b>
		<b>25</b>				<b>03</b>
		<b>31</b>	<b>H</b> – (2) male hex socket	<b>N</b> – No Attachment		<b>04</b>
	<b>M</b> – Electroless Nickel	<b>37</b>	<b>F</b> – (2) female jackpost	<b>R</b> – Wire Rope, PVC Jacket		<b>05</b>
	<b>NF</b> – Cadmium, Olive Drab Over	<b>51</b>				<b>06</b>
		<b>100</b>			<b>T</b> – Wire Rope, No Jacket	
		<b>Z2</b> – Gold				

Sample Part Number:

**500-016 M 31 B F 6 — 01**

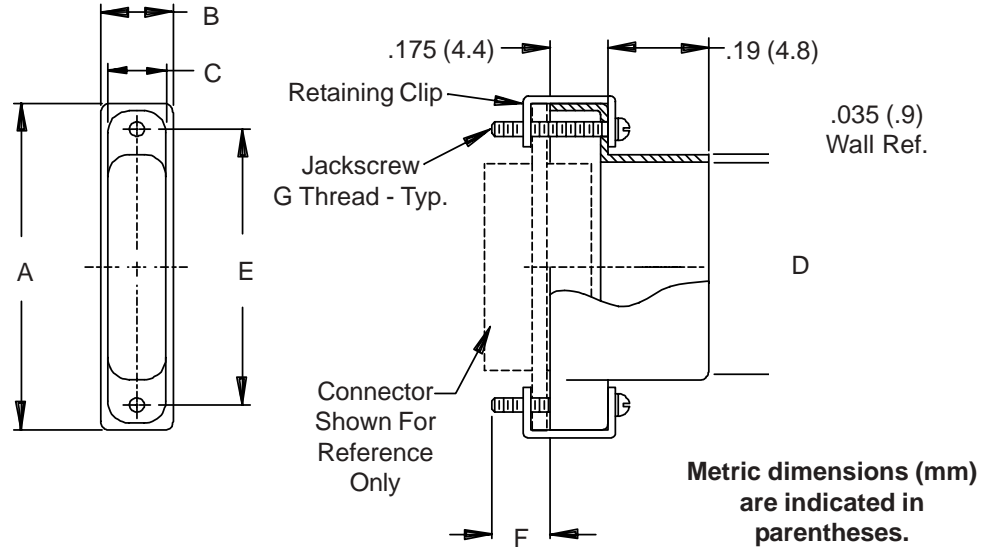
\* SEE PAGE C-2 FOR COMPLETE INFORMATION

# Micro-D Backshells Potting Shell



Micro-D  
Accessories

Potting shells are designed to be used with solder cup Micro-D connectors. The potting shell is attached to the connector and filled with encapsulating compounds such as epoxy or RTV. The potting shell is supplied with integral jackscrews and provides a convenient way to protect the exposed solder cup contacts. The low profile shell requires minimal clearance and is made of machined aluminum.



**TABLE I - DIMENSIONS**

SHELL SIZE	A	B	C	D	E	F Ref	G Thread
09	.775 (19.7)	.34 (8.6)	.26 (6.6)	.31 (7.9)	.565 (14.4)	.154 (3.9)	2-56 UNC-2
15	.925 (23.5)	.34 (8.6)	.26 (6.6)	.48 (12.2)	.715 (18.2)	.154 (3.9)	2-56 UNC-2
21	1.075 (27.3)	.34 (8.6)	.26 (6.6)	.65 (16.5)	.865 (22.0)	.154 (3.9)	2-56 UNC-2
25	1.175 (29.8)	.34 (8.6)	.26 (6.6)	.75 (19.1)	.965 (24.5)	.154 (3.9)	2-56 UNC-2
31	1.325 (33.7)	.34 (8.6)	.26 (6.6)	.88 (22.4)	1.115 (28.3)	.154 (3.9)	2-56 UNC-2
37	1.475 (37.5)	.34 (8.6)	.26 (6.6)	1.03 (26.2)	1.265 (32.1)	.154 (3.9)	2-56 UNC-2
51	1.425 (36.2)	.38 (9.7)	.30 (7.6)	.98 (24.9)	1.215 (30.9)	.154 (3.9)	2-56 UNC-2
100	2.160 (54.9)	.43 (10.9)	.36 (9.1)	1.35 (34.3)	1.800 (45.7)	.194 (4.9)	4-40 UNC-2

## HOW TO ORDER

Series	Basic Part Number	Shell Plating *	Shell Size (Table I)
507	035	C – Black Anodize E – Chem. Film J – Gold Iridite Over Cadmium Over Electroless Nickel M – Electroless Nickel NF – Cadmium, Olive Drab Over Electroless Nickel Z2 – Gold	09 15 21 25 31 37 51 100
Sample Part Number:			
507	— 035	M	21

\* SEE PAGE C-2 FOR COMPLETE INFORMATION

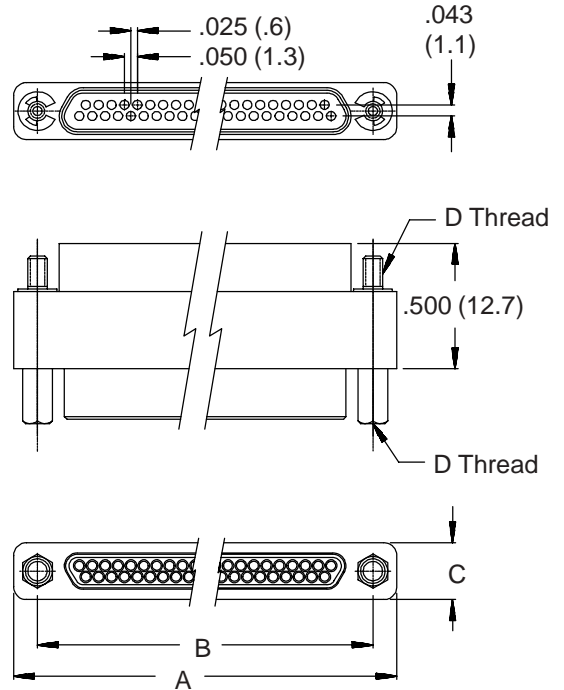


# Micro-D Sav-Con® Connector Savers Metal Shell



Micro-D Uni-Savers are ideal for applications in need of a connector saver for protection of test equipment. The unique one piece design reduces space requirements and mechanical stress.

- Small Profile
- One-Piece Aluminum Shell
- EMI-Protected
- 9 Through 100 Contacts
- Jacking Hardware Included



## HOW TO ORDER

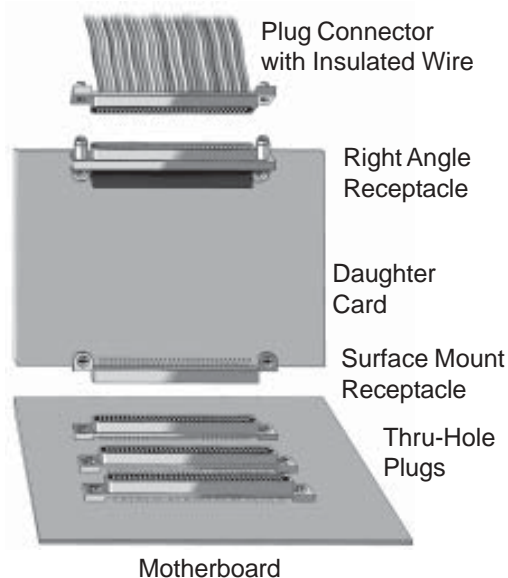
Conn. Series	Shell Plating Table III*	Insert Material Table I*	No. of Contacts	Connector Type	Hardware
<b>MWDM</b>	1 – Cadmium	L – LCP (Liquid Crystal Polymer)	<b>9</b>	<b>US</b> (Uni-Saver)	<b>P1</b> Combination Jackscrew and Jackpost  (Provided Unassembled)
	2 – Nickel		<b>15</b>		
	4 – Black Anodize		<b>21</b>		
	5 – Gold		<b>25</b>		
	6 – Chem Film		<b>31</b>		
			<b>37</b>		
			<b>51</b>		
			<b>100</b>		
<b>Sample Part Number:</b>					
<b>MWDM</b>	<b>5</b>	<b>L</b>	<b>— 25</b>	<b>US</b>	<b>P1</b>
* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION					

## DIMENSIONS

Contacts	A		B	
	± .010 (0.3)	(mm)	± .003 (0.1)	(mm)
9	.775	(19.7)	.565	(14.4)
15	.925	(23.5)	.715	(18.2)
21	1.075	(27.3)	.865	(22.0)
25	1.175	(29.8)	.965	(24.5)
31	1.325	(33.7)	1.115	(28.3)
37	1.475	(37.5)	1.265	(32.1)
51	1.425	(36.2)	1.215	(30.9)
100	2.160	(54.9)	1.800	(45.7)
Contacts	C		D	
	± .010 (0.3)	(mm)	Thread	
9	.298	(7.6)	#2-56 UNC	
15	.298	(7.6)	#2-56 UNC	
21	.298	(7.6)	#2-56 UNC	
25	.298	(7.6)	#2-56 UNC	
31	.298	(7.6)	#2-56 UNC	
37	.298	(7.6)	#2-56 UNC	
51	.341	(8.7)	#2-56 UNC	
100	.384	(9.8)	#4-40 UNC	

Metric dimensions (mm) are indicated in parentheses.

# EdgeBoard Connectors General Information/Selection Guide



## PRODUCT FEATURES

- 92, 128, and 184 Position
- Two Row, .050-inch (1.3 mm) Contact Spacing
- Rugged Aluminum Alloy Shell
- Proven "TwistPin" Contact System
- 3 Amp Current Rating
- Environmentally Sealed
- Pre-Tinned Surface Mount Leads

## Rugged, Miniaturized Performance for Motherboard/ Daughtercard Applications

### *Proven Performance for Plug-to-Board and Board-to-Board Edgeboard Applications*

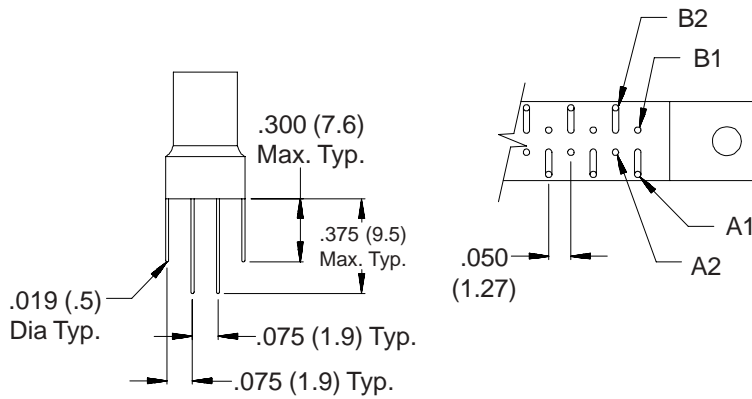
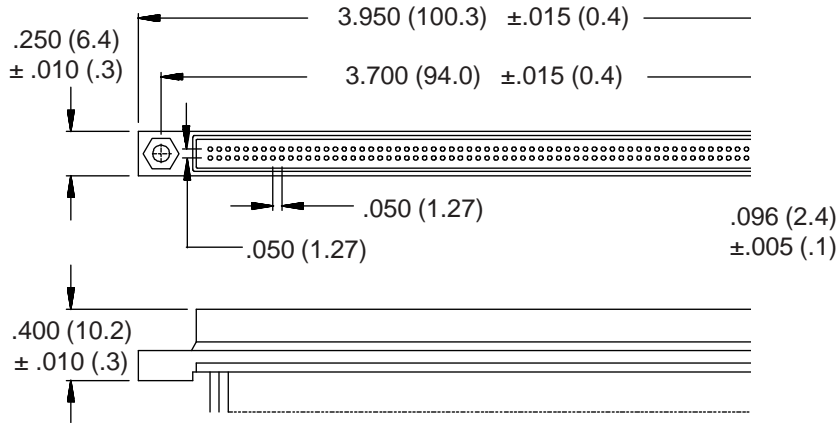
Glenair Edgeboard connectors are designed for use in motherboard/daughtercard applications requiring a rugged, high-performance miniaturized interconnect. The receptacle connector (socket contacts) features surface mount terminals for attachment to the edge of a double-sided daughtercard. The plug connector (pin contacts) features formed PC tails for thru-hole mounting to the motherboard.

Available in three sizes: 92, 128 and 184 pin, MWEB series connectors feature machined aluminum shells, potted terminations and interfacial seals. Optional keying and locking hardware is also available.

Although designed for board-to-board applications, Glenair Edgeboard connectors are also used for board-to-wire applications and can be ordered as insulated wire pigtailed.

Glenair Edgeboard connectors can be found in high-reliability avionics and satellite programs.

# EdgeBoard Connectors 128 Pin Motherboard Plug



## HOW TO ORDER

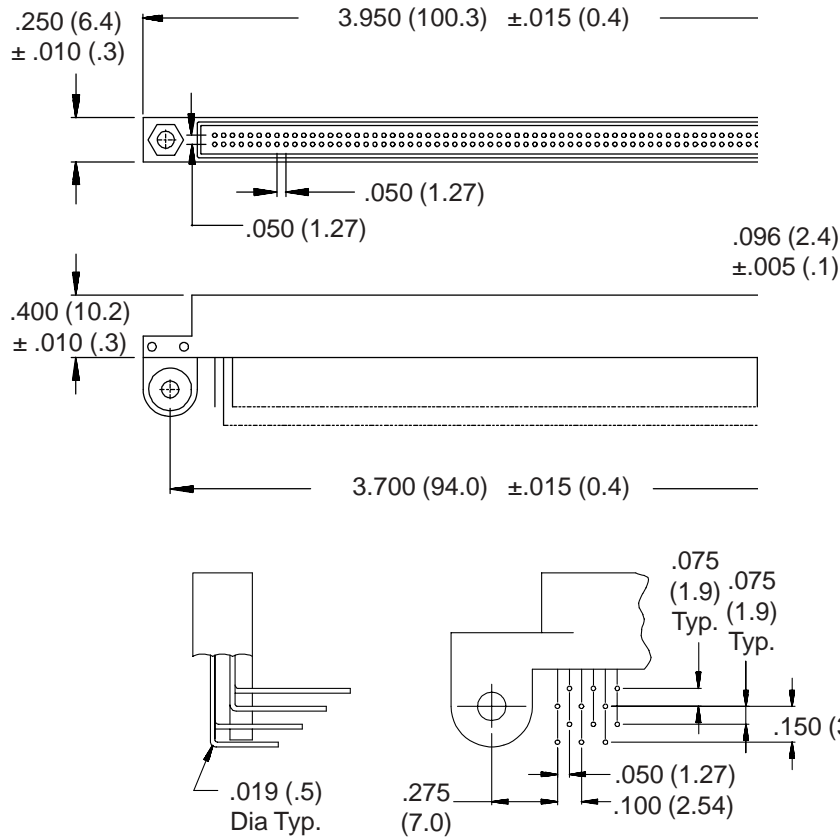
Conn. Series	Shell Plating Table III*	Insert Material Table I*	Layout	Termination	Lead Length
MWEB	2 - Nickel 4 - Black Anodize 5 - Gold	L - LCP  (Liquid Crystal Polymer)	128P	5W4 - Gold Plated Leads .018 (.5) ±.002 (.1) Dia.	.100 .375
<b>Sample Part Number:</b>					
MWEB	2	L	— 128P	5W4	— .375
* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION					

Metric dimensions (mm) are indicated in parentheses.

# EdgeBoard Connectors 128 Pin Daughtercard Receptacle



EdgeBoard  
Connectors



## HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Layout	Termination
MWEB	2 - Nickel 4 - Black Anodize 5 - Gold	L - LCP (Liquid Crystal Polymer)	128S	<b>4BS3</b> - Pre-Tinned Surface Mount Leads  <b>5BR4</b> - Right Angle Thru-Hole Leads .018 (.5) ±.002 (.1) Diameter
<b>Sample Part Number:</b>				
MWEB	2	L	— 128S	4BS3
<b>* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION</b>				

Metric dimensions (mm) are indicated in parentheses.

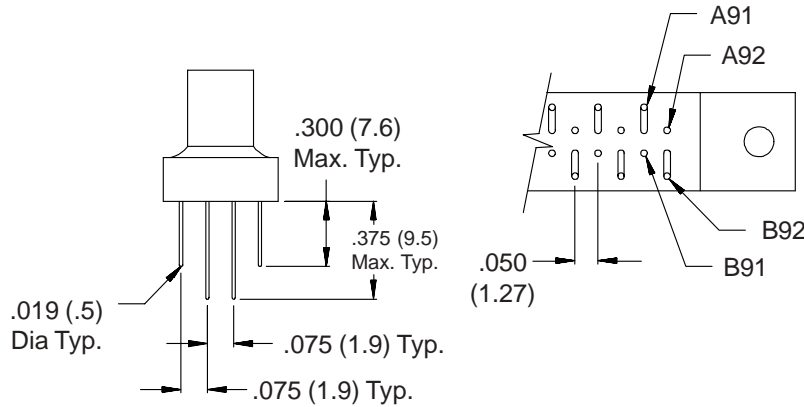
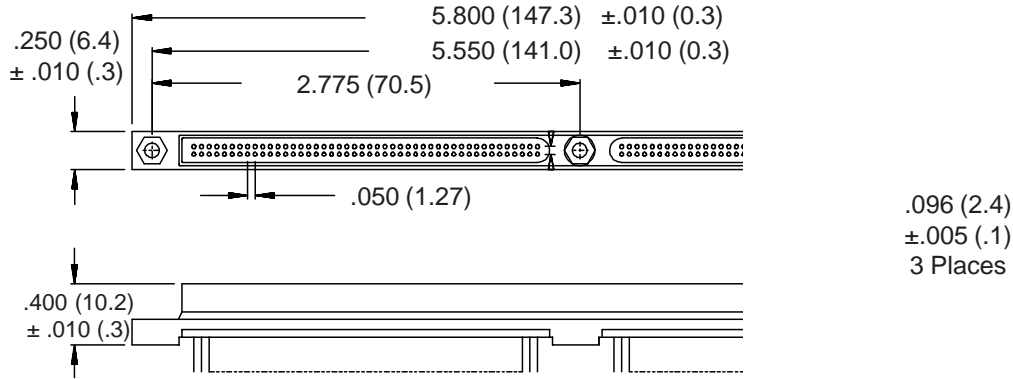
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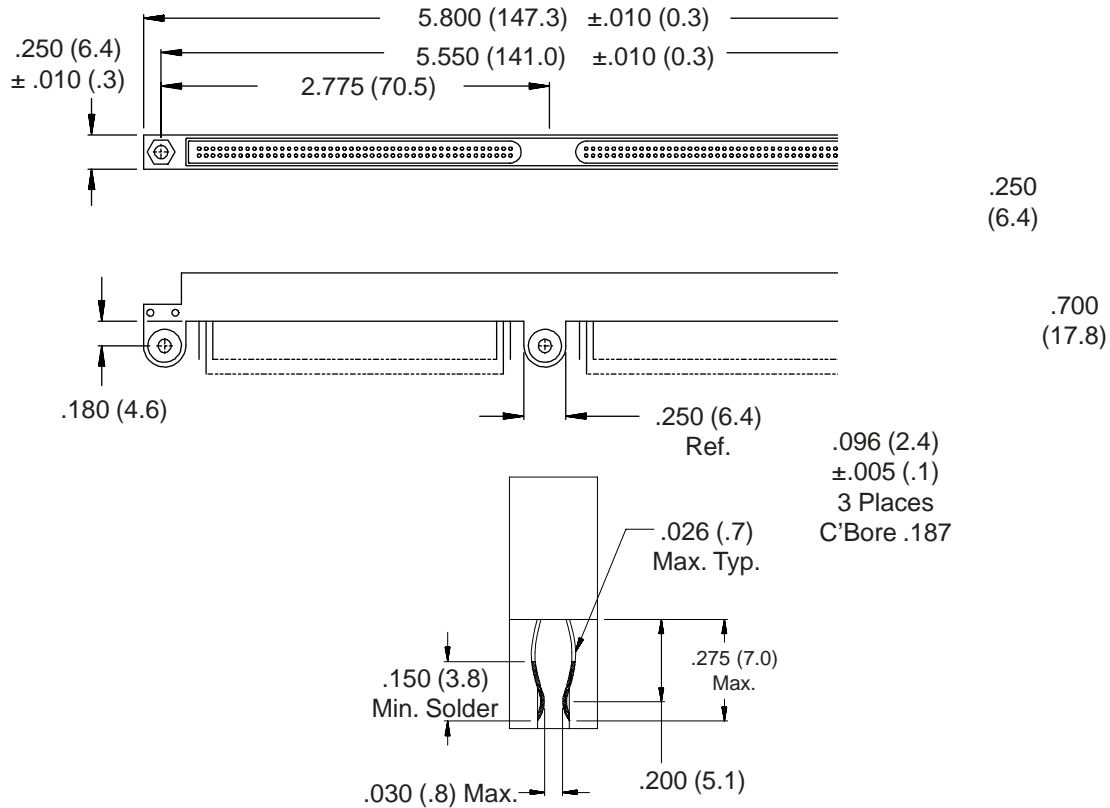


## HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Layout	Termination	Lead Length
MWEB	2 - Nickel 4 - Black Anodize 5 - Gold	L - LCP  (Liquid Crystal Polymer)	184NP	5W4 - Gold Plated Leads .018" ± .002 Dia.	.100 .375
<b>Sample Part Number:</b>					
MWEB	2	L	— 184NP	5W4	— .375
* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION					

Metric dimensions (mm) are indicated in parentheses.

# EdgeBoard Connectors 184 Pin Daughtercard Receptacle

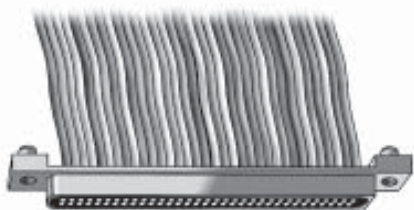


## HOW TO ORDER

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Layout	Termination
MWEB	2 - Nickel 4 - Black Anodize 5 - Gold	L - LCP  (Liquid Crystal Polymer)	184NS	<b>4BS3</b> - Pre-Tinned Surface Mount Leads (#24 AWG)  <b>5BR4</b> - Right Angle Thru-Hole Leads .018" ± .002 Dia.
<b>Sample Part Number:</b>				
MWEB	2	L	184NS	4BS3
* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION				

Metric dimensions (mm) are indicated in parentheses.

## EdgeBoard Connectors Insulated Wire Pigtails and Solder Cups



Edgeboard connectors are available with insulated Teflon® stranded wire in gages ranging from #24 AWG to #30 AWG.

### HOW TO ORDER - INSULATED WIRE PIGTAILS

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Layout	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length
MWEB	2 – Nickel 4 – Black Anodize 5 – Gold	L – LCP  (Liquid Crystal Polymer)	92 128 184N	P – Pin S – Socket	4 - 24 6 - 26 8 - 28 0 - 30	E - Std K - Mil J - Space	1 - White  2 - Yellow  7 - 10 Color Rep.	Length in 1 Inch Increments
<b>Sample Part Number:</b>								
MWEB	2	L	— 128	P	— 6	E	7	— 18

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

### HOW TO ORDER - SOLDER CUPS

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Layout	Contact Type	Termination
MWEB	2 – Nickel 4 – Black Anodize 5 – Gold	L – LCP  (Liquid Crystal Polymer)	92 128 184N	P – Pin S – Socket	S – Solder Cup
<b>Sample Part Number:</b>					
MWEB	2	L	— 128	S	S

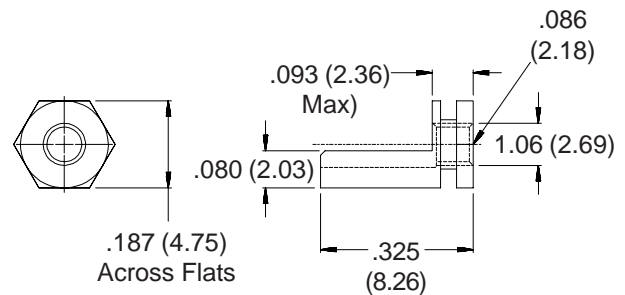
\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

## POLARIZING KEY KITS

Polarizing key kits use a “half hex” design to allow up to 36 keying combinations. Compatible with all standard MWEB series connectors, these stainless steel posts are installed with a retaining pin, supplied with the kit. No special tooling is required for installation.

Material: 303 Series Stainless Steel  
Finish: Passivated

One kit consists of two keys and four retaining pins.



Polarizing Kit Part Number 080-00-00-810

Metric dimensions (mm) are indicated in parentheses.

# If "High-Pressure" describes your interconnect application...



## ...consider Glenair's capabilities in military standard and custom hermetic connectors

**O**ur family of hermetically-sealed connector receptacles is unmatched in today's interconnect industry. Glenair offers complete in-house capabilities in compression glass sealed receptacle connectors for high-pressure/low-leakage applications in air, sea and space. Glenair is an innovator in the development of

both military standard and custom-designed hermetic connectors. Our MIL-C-38999 Series III hermetic products are DSCC approved. In fact, all our hermetic solutions are manufactured in accordance with the highest standards and test protocols. Truly, when the requirement is "High-Pressure", the choice is Glenair.



MIL-C-38999 Series III  
Hermetic Connectors



Microminiature TwistPin  
Hermetic Connectors



Hermetic Feed-Through  
Connectors



Series 80 "Mighty Mouse"  
Hermetic Connectors



Special-Purpose  
Rectangular Hermetics



Series 22 Geo-Marine®  
Connectors



1211 Air Way

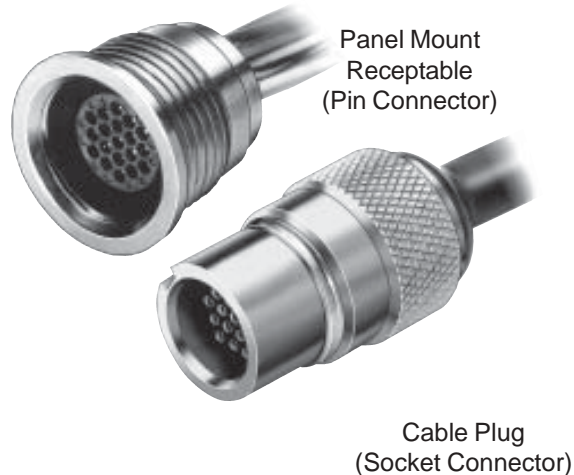
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# MicroCircular Connectors General Information/Selection Guide



## PRODUCT FEATURES

- Quick-Disconnect
- .050 Inch Contact Spacing
- Rugged Construction For Demanding Applications
- 7 and 19 Contacts
- 3 Amp Contact Current Rating
- High Temperature LCP Insulator Material
- Coupling Strength of 50 Pounds (222 N.)
- #24 Through #30 AWG Wire Accomodation

## Glenair MicroCircular Connectors: a Perfect Marriage of Size, Weight and Performance

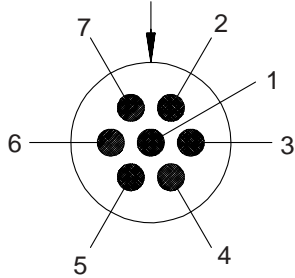
### *Ideally Suited for Medical Equipment, Battlefield Gear, Industrial Equipment, Test Equipment, Robotics and Geo-Physical Exploration*

The MWKQ series MicroCircular connector provides quick-disconnect I/O capability combined with a high performance contact system and rugged construction. These connectors are supplied as pigtail harnesses pre-terminated to insulated Teflon<sup>®</sup> wire.

Panel mount receptables can be specified with options including jam nut mounting, O-rings, and printed circuit board tails. Glenair's MicroCircular is just one part of our complete miniaturized circular connector solution which also includes our .025" spaced Nano Miniature circulars and our Series 80 "Mighty Mouse" circular connectors. Together these products present a complete solution for applications which require robust mechanical and environmental performance in a sub-miniature package. Please call our factory for complete information.

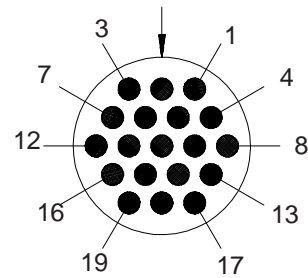
## CONTACT ARRANGEMENTS

Face View - Socket Contacts  
Master Key (Typ.)



**7 Contacts**

Face View - Socket Contacts  
Master Key (Typ.)



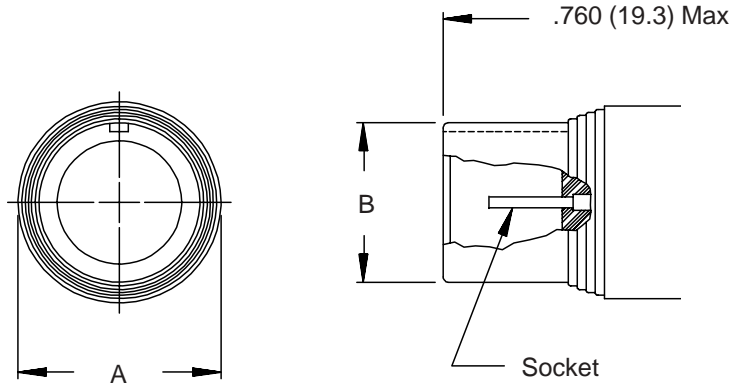
**19 Contacts**

## MATERIALS AND FINISHES

COMPONENT	MATERIAL	FINISH
Pin Contact	Beryllium Copper per ASTM-B194	50 minch Gold per ASTM-B488 Type 3 over Nickel Underplate
Socket Contact	Phosphor Bronze per ASTM 139	50 minch Gold per ASTM-B488 Type 3 over Nickel Underplate
Shell, Collar and Nut	Brass per QQ-B-626	Electroless Nickel Plated per ASTM B733-90
Spring Clip	Beryllium Copper Per ASTM-B194	Electroless Nickel Plated per ASTM B733-90
Insulator	Liquid Crystal Polymer per MIL-M-24519	
Encapsulant	Hysol Epoxy	
Wire	See Table IV, Inside Back Cover Fold Out For Standard Wire Information	

Metric dimensions (mm) are indicated in parentheses.

# MicroCircular Connectors Cable Plugs



## DIMENSIONS

Layout/ Positions	A Max	B Max
7	.385 (9.8)	.305 (7.7)
19	.515 (13.1)	.405 (10.3)

## HOW TO ORDER CABLE PLUGS

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Shell Style	Layout/ Positions	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length
MWKQ	2 - Nickel	L - LCP (Liquid Crystal Polymer)	6 - Cable Plug	7 19	S - Socket	4 - 24 6 - 26 8 - 28 0 - 30	E - Std K - Mil J - Space	1 - White 2 - Yellow 5 - Mil-STD-681 Striped 7 - 10 Color Rep.	Length in 1 Inch Increments Measured From Rear of Potting Well
<b>Sample Part Number:</b>									
MWKQ	2	L	6	— 7	S	— 6	K	5	— 24

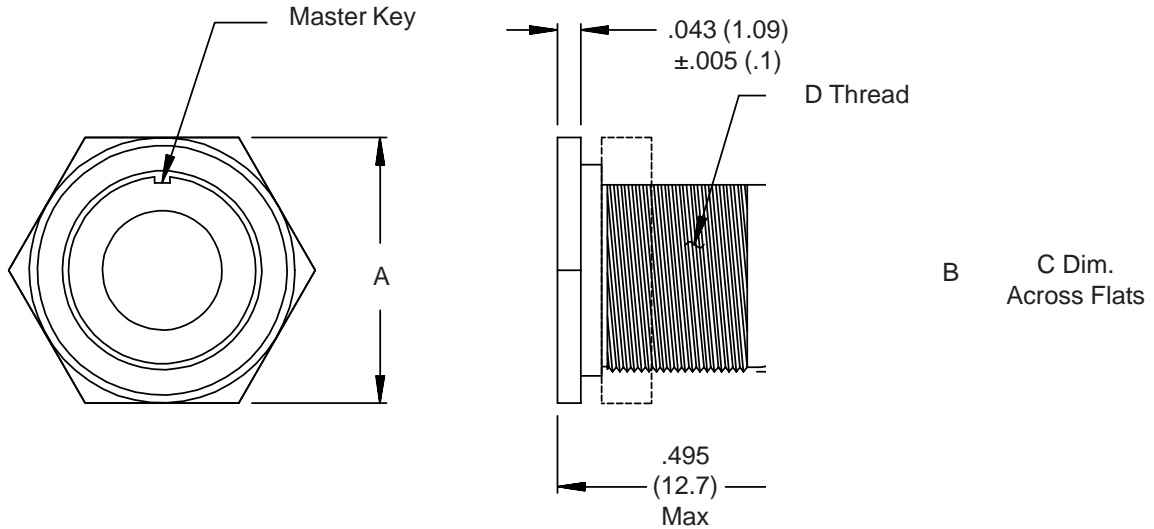
\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

Metric dimensions (mm) are indicated in parentheses.





# MicroCircular Connectors Panel Receptacles - Front Panel Mount



## DIMENSIONS AND SOLDER CUP ORDERING INFORMATION

Layout	A Max	B Max	C Max	D Thread
7 Position	.510 (13.0)	.245 (6.2)	.359 (9.1)	3/8 - 32 UNEF-2A
19 Position	.575 (14.6)	.345 (8.8)	.470 (11.9)	1/2 - 28 UNEF-2A

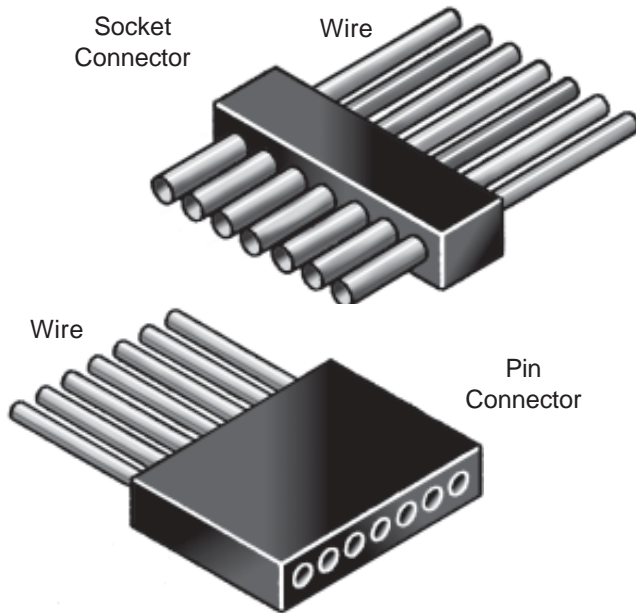
## HOW TO ORDER PANEL RECEPTACLES

Conn. Series	Shell Plating Table III*	Insert Material Table I*	Shell Style	Layout/ Positions	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length
MWKQ	2 - Nickel	L - LCP (Liquid Crystal Polymer)	7 - Front Panel Recep	7 19	P - Pin	4 - 24 6 - 26 8 - 28 0 - 30	E - Std K - Mil J - Space	1 - White 2 - Yellow 5 - Mil-STD-681 Striped 7 - 10 Color Rep.	Length in 1 Inch Increments  Measured From Rear of Potting Well
<b>Sample Part Number:</b>									
MWKQ	2	L	7	— 7	P	6	K	5	— 24

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

Metric dimensions (mm) are indicated in parentheses.

# MicroStrips General Information/Selection Guide



## PRODUCT FEATURES

- .050 Inch (1.3 mm) Contact Spacing
- High Density Single Row
- High Temperature LCP Insulator Material
- Up to 30 Positions
- 3 Amp Contact Current Rating
- #24 Through #30 AWG Wire Accomodation

## PAGE REFERENCES

Performance Specifications	IBC*
Materials and Finishes	IBC*
* Available on the Inside Back Cover Fold-Out Section	

## Glenair High-Density Board-to-Wire MicroStrip Connectors with Optional Guide Pin Polarization

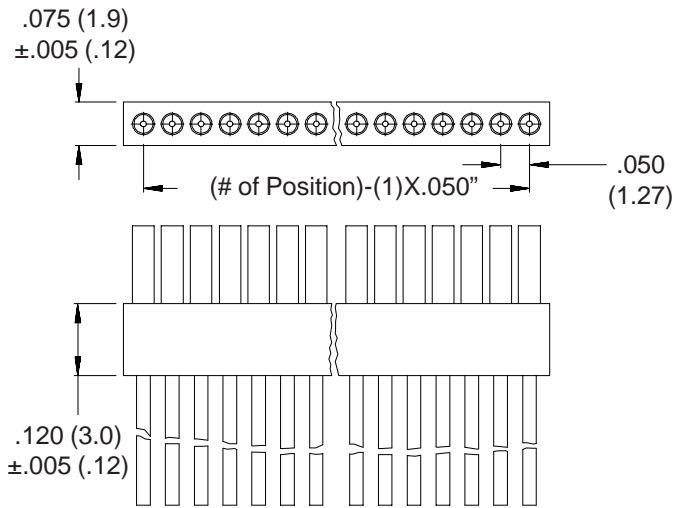
### *Ideally Suited for Medical Equipment, Avionics, Instrumentation Satellites and Other Space Applications*

The MWS microstrip series provides a very high density packaging solution for applications demanding a high performance contact system and .050" spacing.

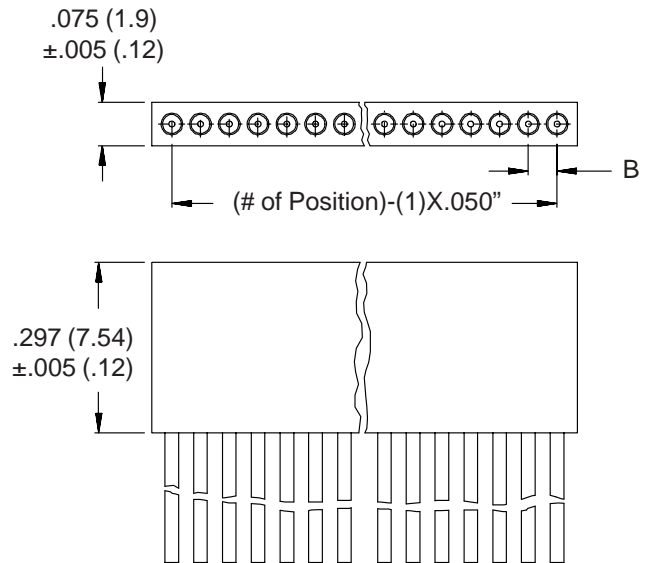
Typically used for board-to-wire I/O applications, MicroStrips are available with up to 30 contacts. A guide pin option allows polarizing.

Two termination styles are available: pre-wired pigtailed with either insulated or uninsulated stranded wire, and solder cups.

## SOCKET CONNECTOR DIMENSIONS



## PIN CONNECTOR DIMENSIONS



## HOW TO ORDER — MICROSTRIP SOLDER CUP ASSEMBLIES

Conn. Series	Insert Material	No. of Cavities	Contact Type	Termination	Guide Pin
MWS	L – LCP  (Liquid Crystal Polymer)	1 to 30  (Total number of cavities including guide pins - Consult factory if more cavities are needed)	P – Pin S – Socket	S - Solder Cup	Omit for None  P1 - Guide Pin Position 1  P2 - Guide Pin Both Ends  PX - Guide Pin Per Customer Specification
<b>Sample Part Number:</b>					
MWS	L	— 11	P	S —	P1

Metric dimensions (mm) are indicated in parentheses.

# MicroStrips Pigtail Assemblies



MicroStrip  
Connectors

## HOW TO ORDER - PIGTAIL ASSEMBLY WITH INSULATED WIRE

Conn. Series	Insert Material Table I*	No. of Cavities	Contact Type	Wire Gage (AWG)	Wire Type Table IV*	Wire Color Table IV*	Wire Length	Guide Pin
MWS	L – LCP  (Liquid Crystal Polymer)	<b>1 to 30</b>  (Total number of cavities including guide pins - Consult factory if more cavities are needed)	<b>P</b> – Pin <b>S</b> – Socket	<b>4</b> - 24 <b>6</b> - 26 <b>8</b> - 28 <b>0</b> - 30	<b>E</b> - Std <b>K</b> - Mil <b>J</b> - Space	<b>1</b> - White  <b>2</b> - Yellow  <b>5</b> - Mil-STD-681 Striped  <b>7</b> - 10 Color Rep.	Length in 1 Inch Increments	Omit for None  <b>P1</b> - Guide Pin Position 1  <b>P2</b> - Guide Pin Both Ends  <b>PX</b> - Guide Pin Per Customer Specification
<b>Sample Part Number:</b>								
MWS	L	— 16	P	— 6	E	7	— 18	P1

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

## HOW TO ORDER - PIGTAIL ASSEMBLY WITH UNINSULATED WIRE

Conn. Series	Insert Material Table I*	No. of Cavities	Contact Type	Wire Gage (AWG)	Wire Type	Wire Finish	Wire Length	Guide Pin
MWS	L – LCP  (Liquid Crystal Polymer)	<b>1 to 30</b>  (Total number of cavities including guide pins - Consult factory if more cavities are needed)	<b>P</b> – Pin <b>S</b> – Socket	<b>4</b> - 24 <b>5</b> - 25 <b>8</b> - 28	<b>C</b> - Solid Copper QQ-S-343 Type S	<b>4</b> - Gold Plated	Length in Inches  Example: .250 is 1/4 inch	Omit for None  <b>P1</b> - Guide Pin Position 1  <b>P2</b> - Guide Pin Both Ends  <b>PX</b> - Guide Pin Per Customer Specification
<b>Sample Part Number:</b>								
MWS	L	— 8	P	— 5	C	4	— .250	P1

\* SEE INSIDE BACK COVER FOLD-OUT FOR COMPLETE INFORMATION

# Product Brief Space Grade Micro-D Connectors



## Applications

Glenair's Micro-D's have been deployed on many orbital and deep space vehicles. Micro-D connectors are covered by military specification MIL-DTL-83513. This mil spec is the baseline document for space flight applications, and many orbital and deep space programs have successfully used standard M83513 connectors. However, NASA Goddard Space Flight Center has issued a supplemental specification, 311-INST-001 Revision A, that contains important screening (inspection) information and application notes for a wide range of parts, including M83513 connectors. This specification can be downloaded from <http://misspiggy.gsfc.nasa.gov/ctre/parts/inst/>. Glenair recommends that customers obtain a copy of this spec prior to ordering connectors.

## Are Micro-D's Approved for Space Applications?

Yes—military grade Micro-D connectors are “preferred parts” according to NASA's 311-INST-001 specification. NASA recommends that parts be specified per the MIL-DTL-83513 document. If the part deviates from the mil spec, the user should generate a Source Control Drawing containing the screening and qualification requirements shown in 311-INST-001, Tables 2C and 3C.

## Is Glenair Approved for Space Grade Micro-D's?

Yes—Glenair is approved for all MIL-DTL-83513 configurations, including Space Grade versions. Glenair's Micro-D connectors are approved by NASA, TRW, Hughes Space, Lockheed Martin, Orbital Sciences, and others.

## How do I order a Glenair Micro-D connector In Accordance With NASA 311-INST-001?

Glenair has assigned special modification codes to call for NASA screening. Follow the steps below to select the right modification code:

**Step 1:** Select the appropriate connector from the Glenair catalog. Note that electroless nickel shell plating and M22759/33 wire are recommended options for space flight.

**Step 2:** Choose the appropriate NASA screening level.  
Level 1: Highest reliability. “Parts shall be selected and processed to this level for missions requiring the lowest

acceptable level of risk”. Level 1 is the most expensive screening level.

Level 2: Higher reliability. “Low to moderate level of risk balanced by cost constraints and mission objectives”. Level 2 is the most typical level of screening.

Level 3: Standard reliability. “Parts shall be selected and processed to this level for missions where a moderate level of risk may be acceptable, as permitted by cost constraints.” Level 3 screening does not require any special tests or inspections. Glenair's standard inspections conform to level 3.

**Step 3:** Decide if special outgassing processing is necessary.

Non-metallic materials such as rubber, plastic, adhesives, and potting compounds can give off gases when subjected to a vacuum. The standard Glenair Micro-D connector is able to meet NASA's outgassing requirements without special processing. However, the NASA spec provides for optional outgassing processing, which requires the parts be sent to a lab for thermal vacuum outgassing. This “bakeout” assures that all volatile materials are removed.

**Step 4:** Find the ordering code from the table below and add it to the part number. This code will invoke the appropriate screening.

Screening Level	Glenair Suffix Code No Outgassing Processing	Glenair Suffix Code With Outgassing processing
1 (Highest reliability)	429B	429C
2 (High reliability)	429	429A
3 (Standard reliability)	(no code is required)	186

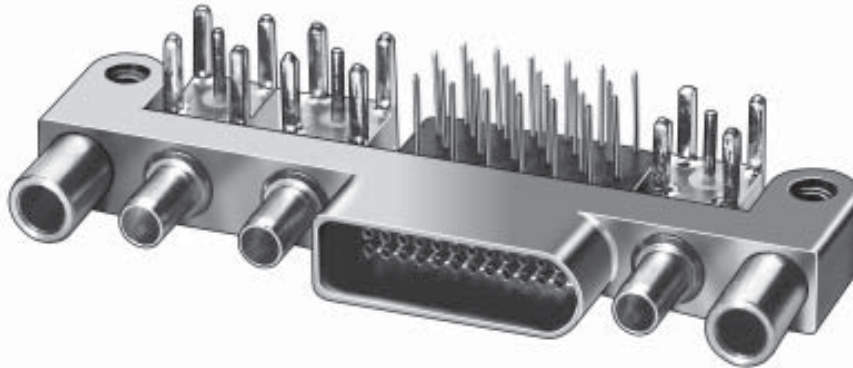
Example: part number MWDM2L-9PSB specifies a nickel-plated 9 pin Micro-D with solder cup contacts. To order this item screened to NASA Level 1, add code “429B”. Finished part number MWDM2L-9PSB-429B. Glenair will perform the correct screening, and will supply a test data sheet certifying compliance to the NASA requirement.



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[www.glenair.com](http://www.glenair.com)

North America • United Kingdom • Germany • Nordic • France • Italy • Spain

## Custom high-density interconnects and assemblies for high-reliability applications



Microminiature interconnect systems are typically highly customized, build to order products. Many customers chose our Glenair COTS Micro-D connectors because of the wide range of available options including platings, wire types and hardware. But these types of modifications only scratch the surface of the range of customizations available from Glenair's Microway Systems and UK Ltd divisions. In fact, for customers faced with unique interconnect problems, such as those encountered in high-heat or space applications, our custom engineering and design team can provide a complete range of services — from the fabrication of made to order interconnect cable assemblies, to the manufacture of unique, one-of-a-kind connectors.

At Glenair, we realize one of the biggest challenges facing any application engineer is the miniaturization of an electrical interconnect system, and that often you are faced with situations in which no standard commercial product exists.

The last thing you need is a run-around from a company with little or no in-house expertise in the design and manufacture of custom interconnect products.

At Glenair, we have over 150 years of combined micro-engineering experience in our senior staff alone. We are leaders in the innovative use of new alloys, composites and polymers, and members of the research and development bodies which are writing the new standards for micro, circular and nano connectors. So, whenever you find the range of standard products and solutions does not meet your needs, we invite you to call Glenair.

The following pages provide examples of the types and kinds of custom solutions available. But this is by no means an exhaustive list of potential solutions. Please contact the factory for more information or visit our website at [www.glenair.com](http://www.glenair.com) for the latest Glenair product development news.

**PRODUCT FEATURES**

- Moisture Proofing
- Hermetic Sealing
- Power, Fiber, Signal And Coax Integration
- Special Metal Alloys And Composite Thermoplastic Construction
- Unique Hardware, Mounting Plate And O-Ring Modifications
- Individually Keyed Shells
- Made-to-Order Assemblies

## At Glenair, the Word “Custom” Means a Bit More Than Just “Your Choice of Wire.”

Glenair excels in the rapid prototyping and development of custom microminiature connectors including solder cups, MicroStrips, back-to-back jumpers, EdgeBoards, and other Micro-D style interconnects. From initial concept to finished parts, our factory is fully self-sufficient and can produce highly reliable, rugged interconnects in both machined metal and molded plastic and polymer versions. Our expertise extends to the design of high density interconnects for both coax and rack and panel devices in virtually any layout and termination style including wire to wire, wire to board and rear and front panel mounts.

All of our custom interconnects feature our TwistPin Contact System and are designed for both reduced size and weight as well as maximum reliability. And most importantly, at Glenair we are happy to consider your limited quantity and prototype requirements. Unlike other manufacturers, Glenair is well positioned to service both low-quantity custom orders as well as high-volume production requirements.

The assembly of made-to-order interconnect harnesses is also a major strength at Glenair’s Microway Systems and UK Ltd. Divisions. From simple point-to-point to complex multiple branch harnesses, our engineers can quote price and delivery for your exact specifications faster than anyone else in the business.



### PRODUCT FEATURES

- Kovar (Alloy 42) Shells and Contacts
- Compression Glass Sealing
- Custom Weld Mount Flanges and Short Shell Designs
- Standard and Custom Contact Configurations
- PCB Terminations
- Integrated Manufacturing Including In-House Firing

## Micro Hermetics Meet Package Size Requirements in High-Pressure/Low-Leakage Applications

Our custom hermetic micros are ideally suited for applications which must solve both size and weight problems as well as pressure and leakage requirements. Our engineers will commonly produce machined prototypes to provide the fastest turnaround possible on new designs. The tooling of connector components is also possible for larger quantity applications. Since the goal of many micro connector development efforts is to achieve space savings, we have focused our micro hermetic development on producing extremely short shells and terminations; a major advantage given the size and shape constraints of many hermetic applications.

At Glenair, we approach every application as a total system, and are equally skilled in addressing hermeticity, electrical performance as well as mechanical design issues. And Glenair's complete in-house manufacturing capabilities allow us to design and build hermetic solutions faster than anyone else in the business.



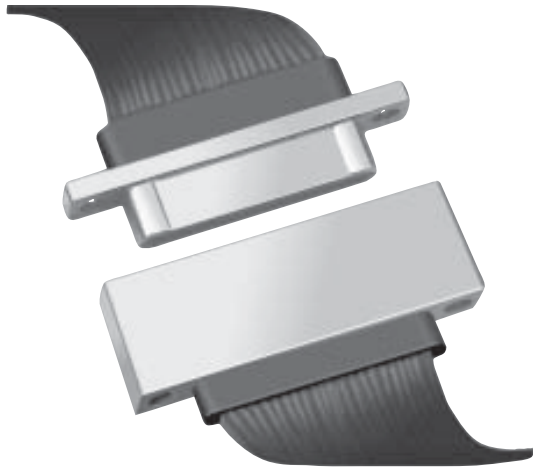
**PRODUCT FEATURES**

- Rapid Prototyping
- Metal Shell and Composite Thermoplastic Versions
- Shielding and Jacketing
- Quick Disconnects
- Threaded Couplings
- Glass Hermetic Sealing
- Custom Layouts Available
- Hybrid Contacts including Coax and Fiber

## Glenair Custom Micro Circular Connectors are Ideally Suited for Reduced Package Size Applications

Downsized electronic systems frequently do not have room for conventional circular connector systems. Size and weight limitations have led to a need for miniaturized circular interconnects which meet package-size constraints while still providing high levels of performance.

Our design engineers have the expertise to create micro circular solutions to meet the most demanding applications including battlefield gear and geophysical exploration equipment. Our expertise with shielding, jacketing and conduit systems enables us to design high-reliability cable assemblies for virtually any application. Our expertise with the design of custom panel mount micro circular receptacles enables us to provide a complete system—from the circuit board to the panel to the external cable assembly.



### PRODUCT FEATURES

- Titanium and Stainless Steel Shell Options
- Solid Gold Pin and Socket Contacts
- Custom Pin Outs and Contact Modifications
- Hermetic Sealing
- Hot Solder Dip Termination
- Surface and Board Mount (PCB) Designs

## High-Performance Materials Separate Our Nano .025 Inch Connectors From the Competition

In the absence of applicable Military Standards, it is crucial to understand the form, fit and function of the application in order to engineer an appropriate design. In the design of nano connectors, the ability to wrap virtually any housing around any interface dimension is both a major strength as well as a potential danger—especially if the quality of the housing design and the basic contact system are not equal to the challenge.

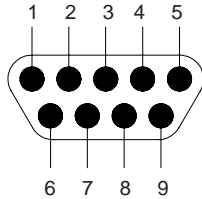
Glenair's Microway Systems' TwistPin Contact System provides superior electrical continuity under extreme conditions of shock and vibration—a clear advantage in high speed digital applications, or in any situation in which the small size of the interconnect might compromise the continuity of the system. Our expertise in nano design and development extends from applications for battlefield gear to medical diagnostic equipment and geophysical exploration.

Our advanced materials, including titanium shells and solid gold contacts, make Glenair's ultra-miniature nano connectors the most reliable in the industry.

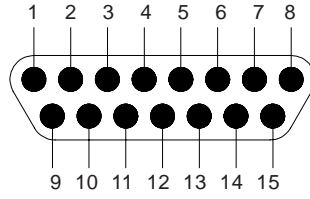
## Mating Face of Pin Connector

.050 inch Contact Spacing

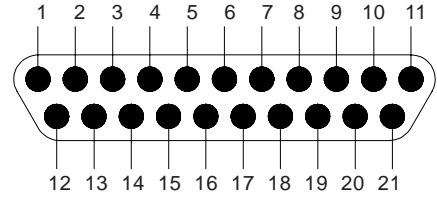
.043 inch Spacing Between Rows



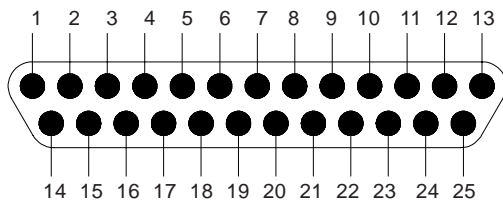
**9 Contacts**



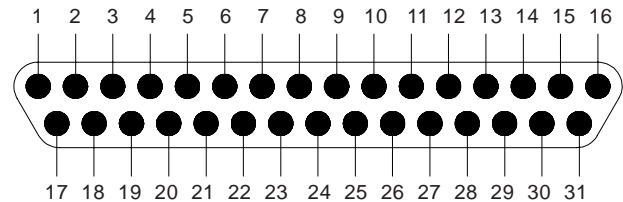
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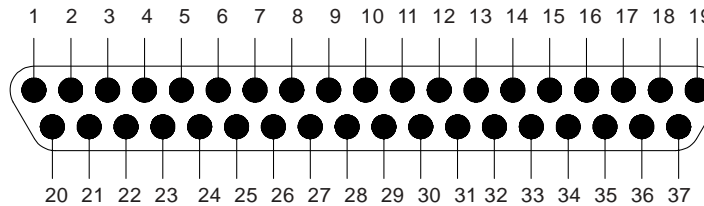
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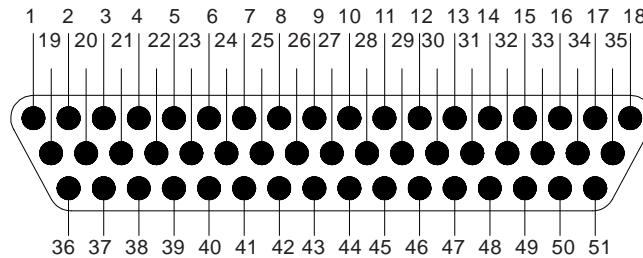
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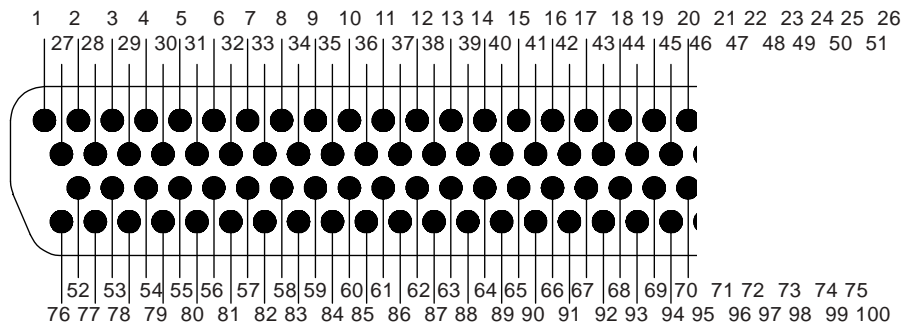
**31 Contacts**



**37 Contacts**



**51 Contacts**

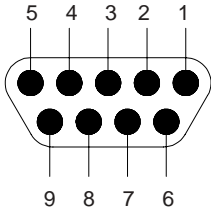


**100 Contacts**

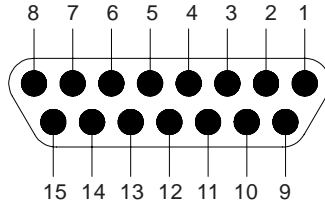
## Mating Face of Socket Connector

.050 inch Contact Spacing

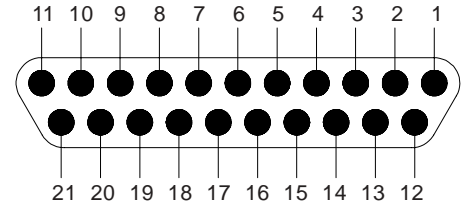
.043 inch Spacing Between Rows



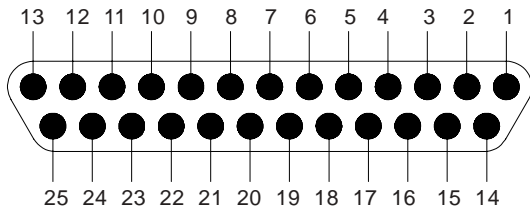
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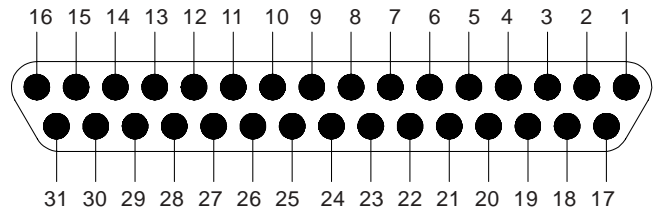
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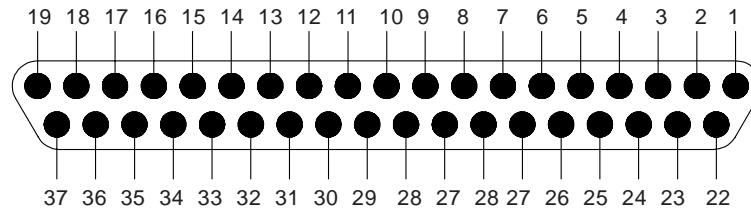
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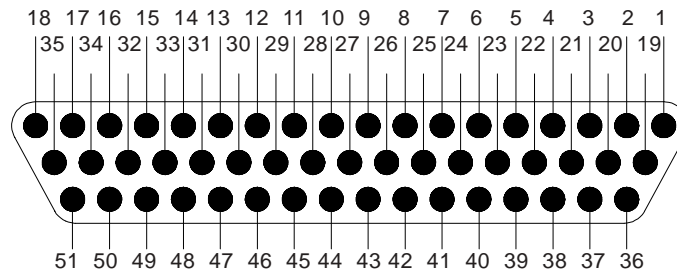
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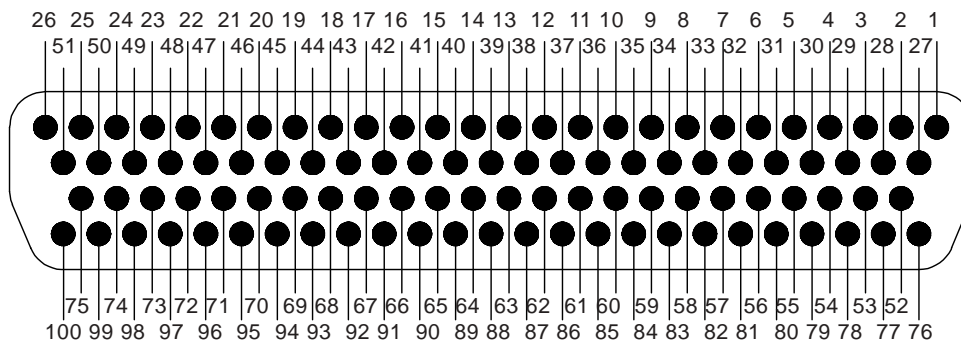
**31 Contacts**



**37 Contacts**



**51 Contacts**



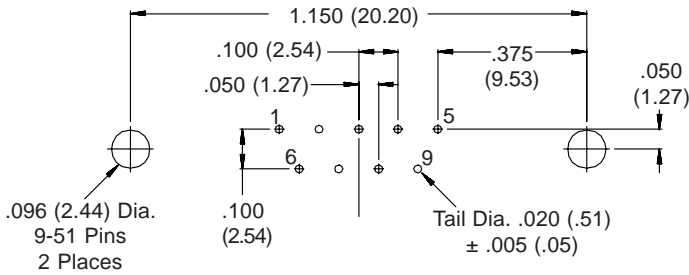
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# Printed Circuit Board Layouts

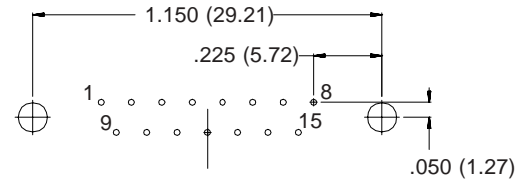
## Vertical Mount, .100 Inch Pitch

### Pin Connector (Termination Code BS)

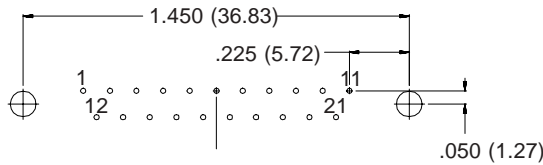
#### 9 Contacts



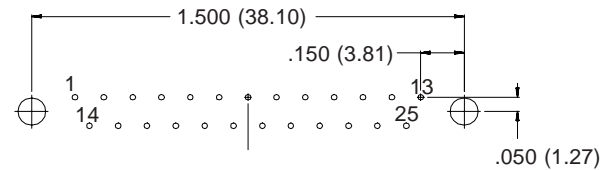
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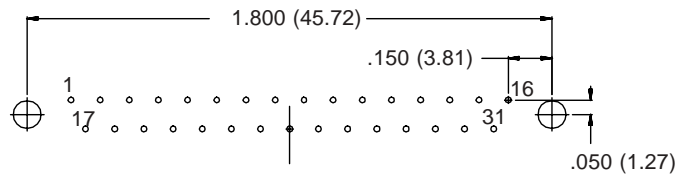
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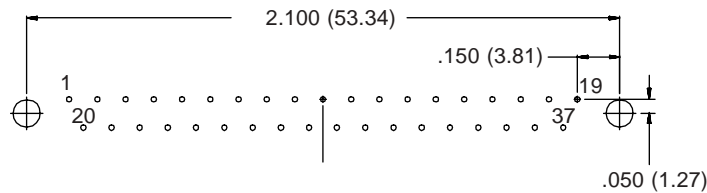
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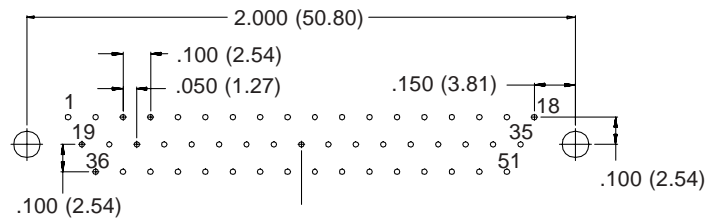
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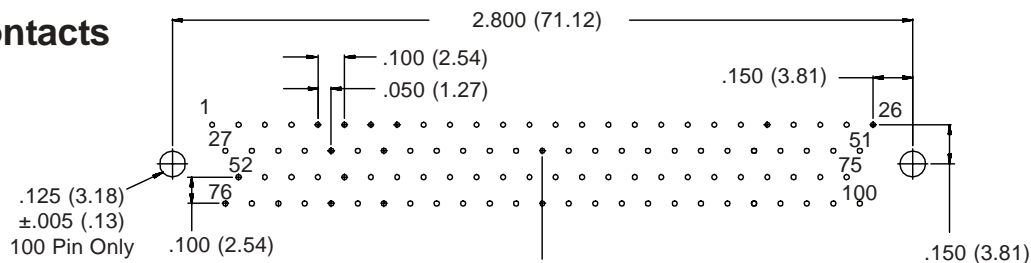
#### 37 Contacts



#### 51 Contacts



#### 100 Contacts



Metric dimensions (mm) are indicated in parentheses.

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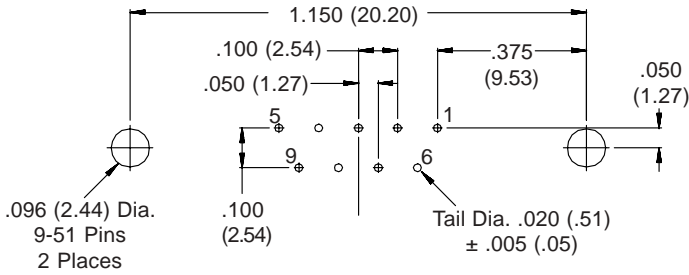
CAGE Codes 06324/0CA77

Printed in U.S.A.

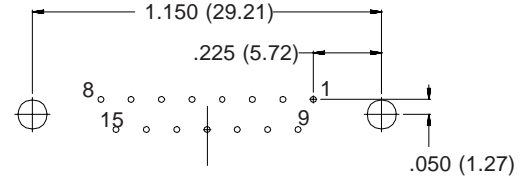
# Printed Circuit Board Layouts Vertical Mount, .100 Inch Pitch Socket Connector (Termination Code BS)



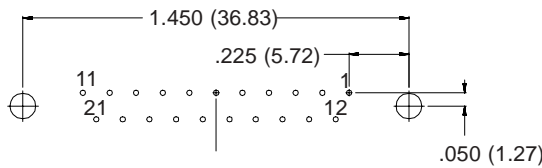
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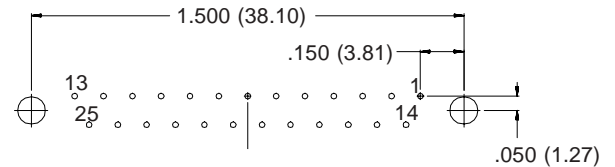
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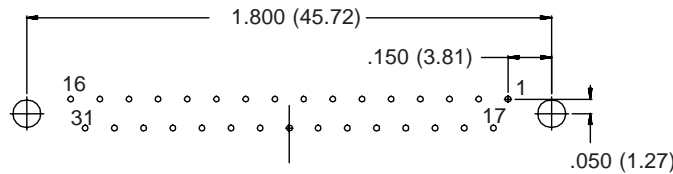
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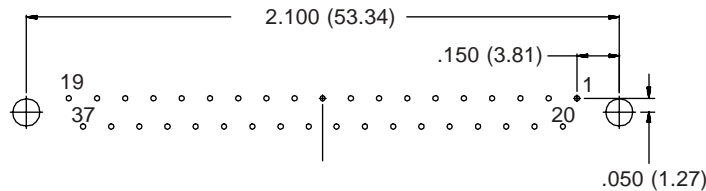
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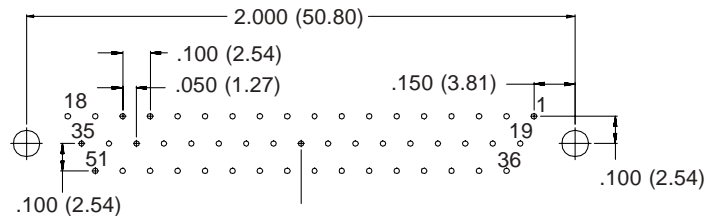
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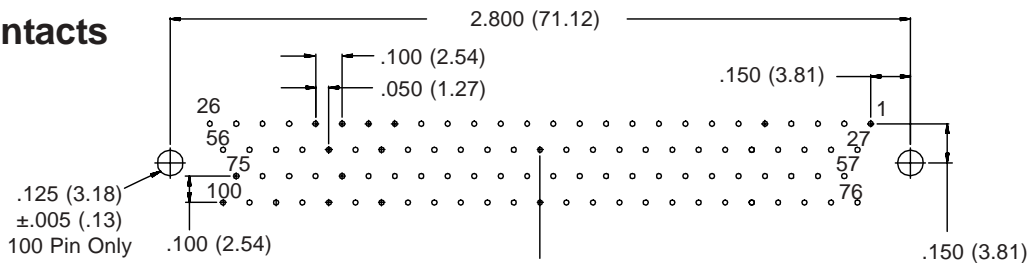
## 37 Contacts



## 51 Contacts



## 100 Contacts



Metric dimensions (mm) are indicated in parentheses.

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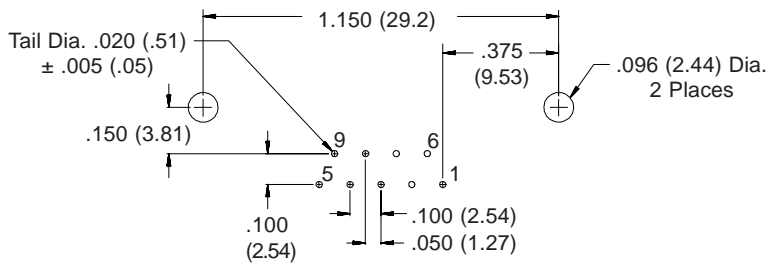
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Printed in U.S.A.

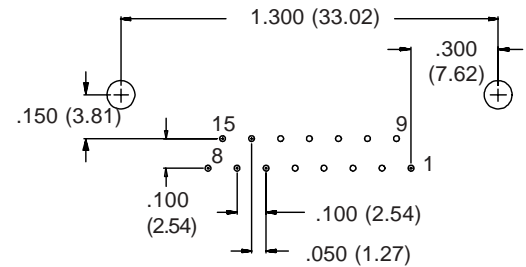
# Printed Circuit Board Layouts

## Right Angle 90°, Wide Style, .100 Inch Pitch, Pin Connector (Termination Code BR)

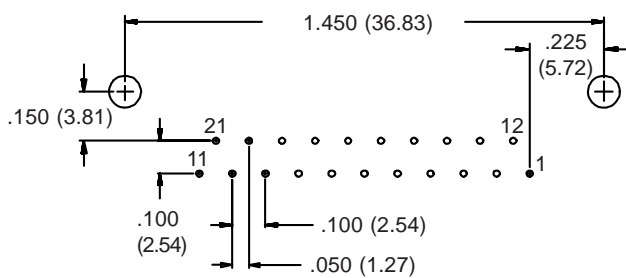
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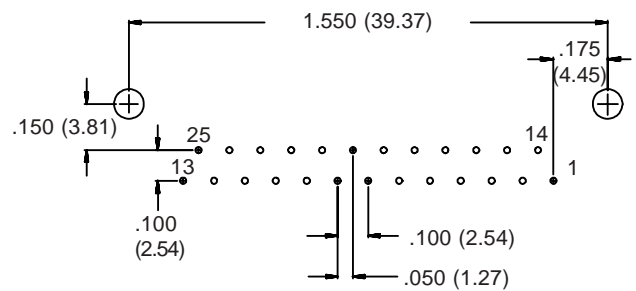
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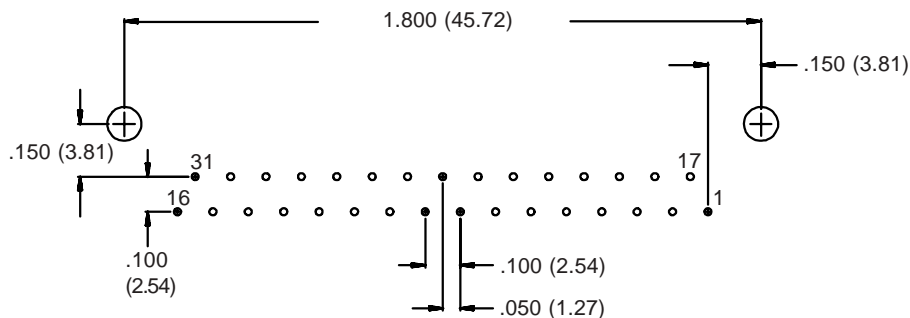
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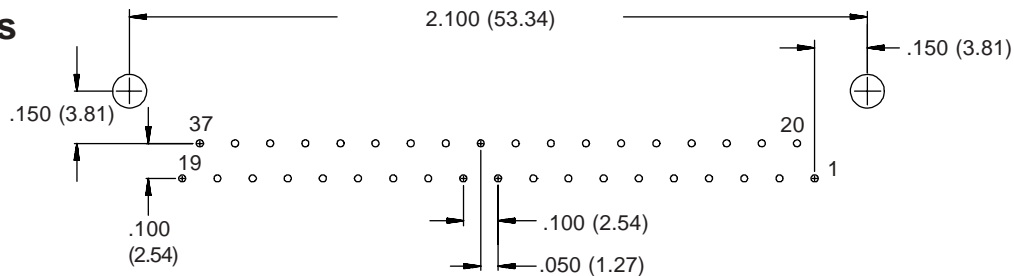
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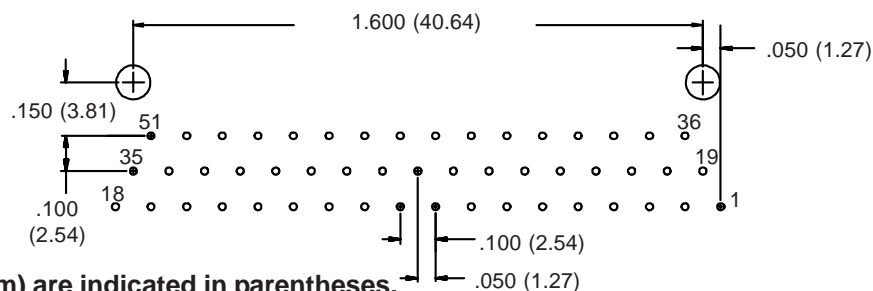
### 31 Contacts



### 37 Contacts



### 51 Contacts



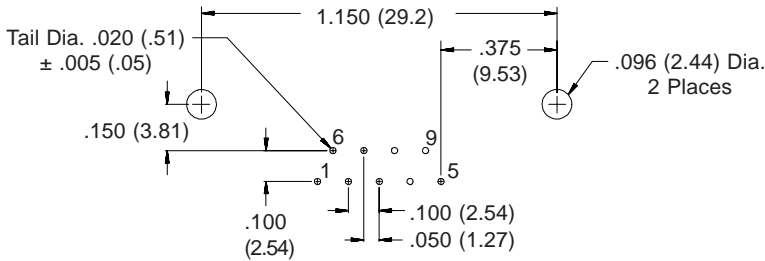
Metric dimensions (mm) are indicated in parentheses.

# Printed Circuit Board Layouts

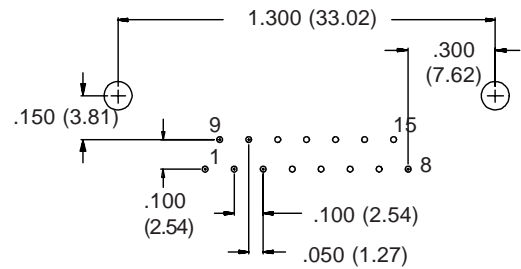
## Right Angle 90°, Wide Style, .100 Inch Pitch, Socket Connector (Termination Code BR)



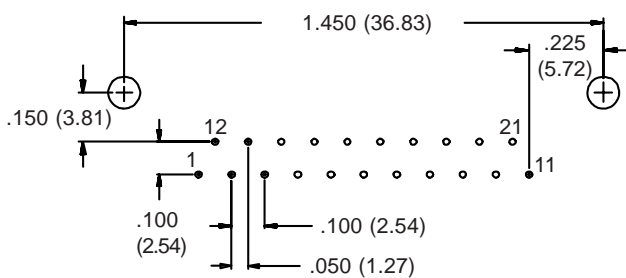
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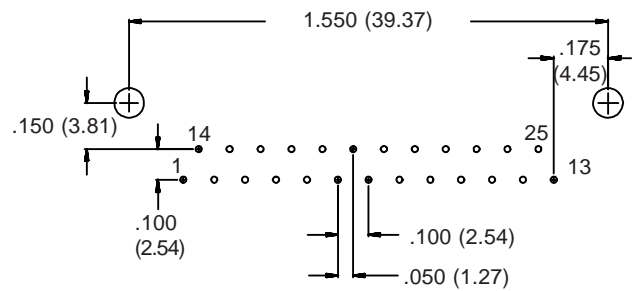
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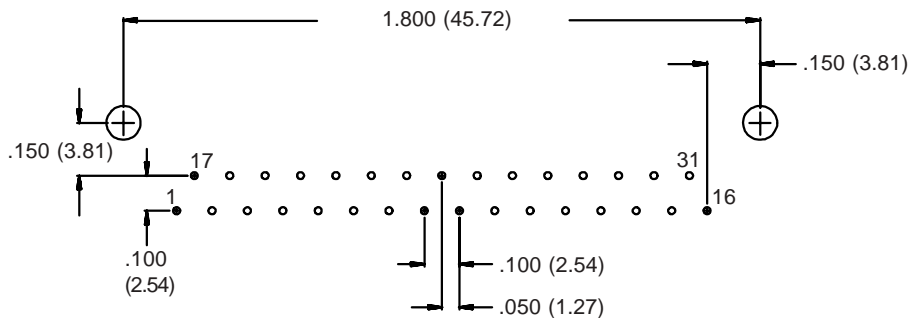
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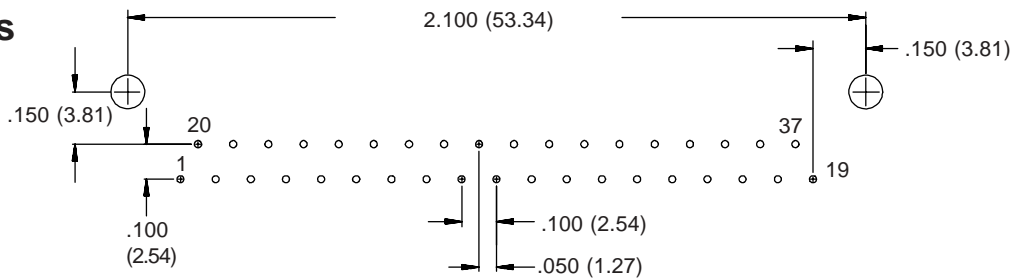
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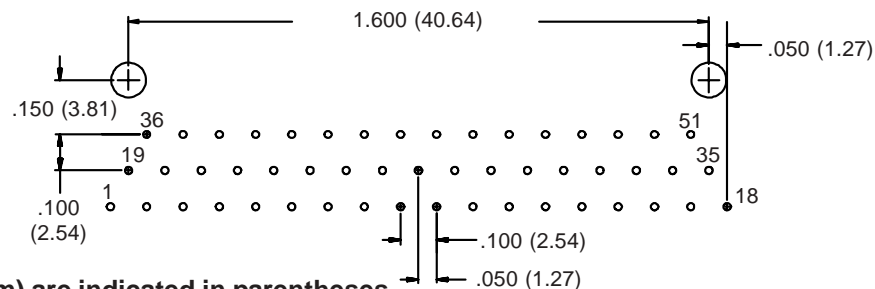
### 31 Contacts



### 37 Contacts



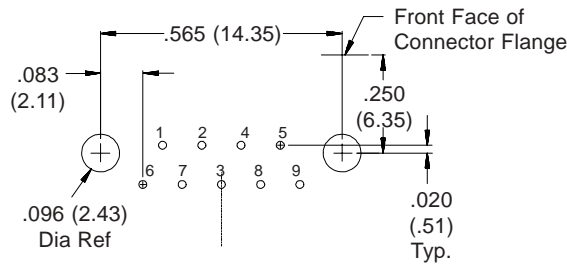
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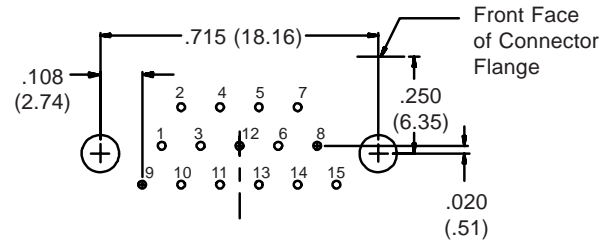
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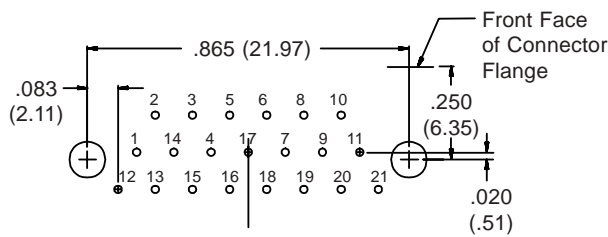
### 9 Contacts



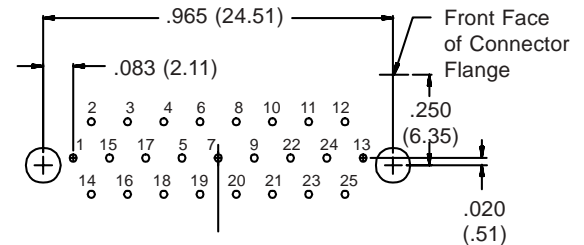
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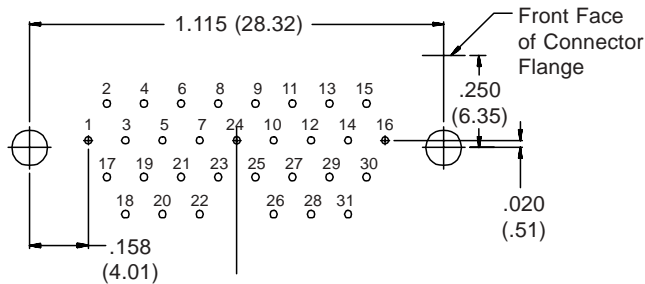
### 21 Contacts



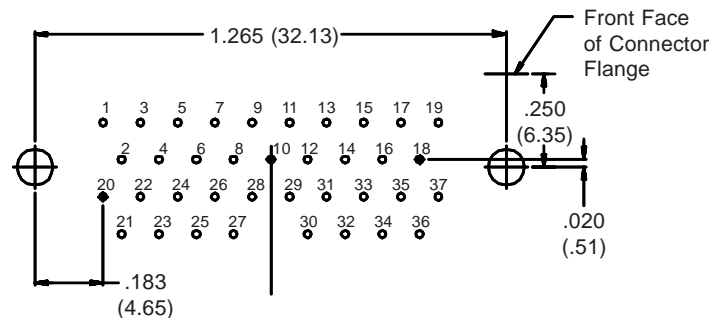
### 25 Contacts



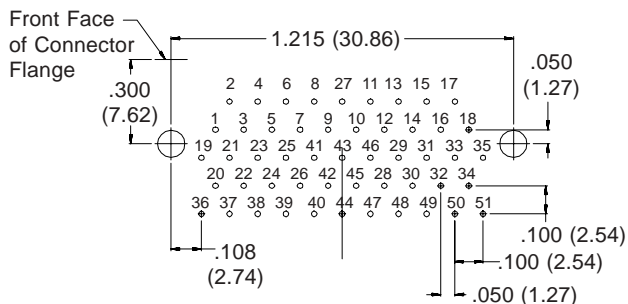
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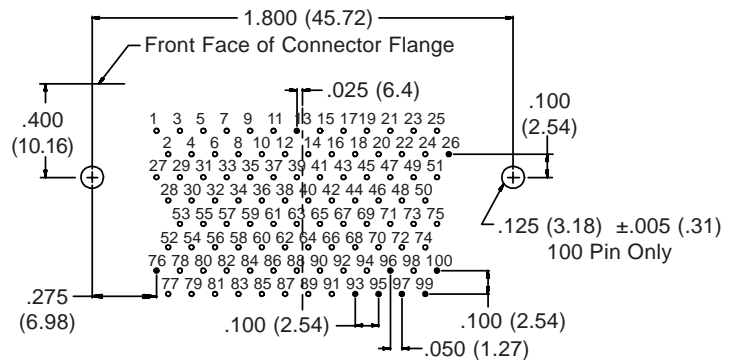
### 37 Contacts



### 51 Contacts



### 100 Contacts



Metric dimensions (mm) are indicated in parentheses.

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CAGE Codes 06324/0CA77

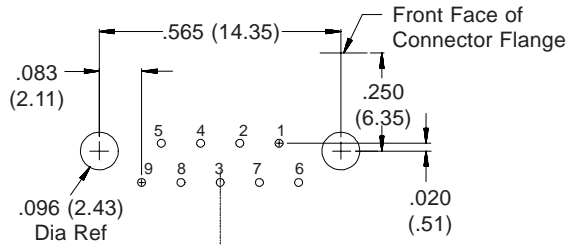
Printed in U.S.A.

# Printed Circuit Board Layouts

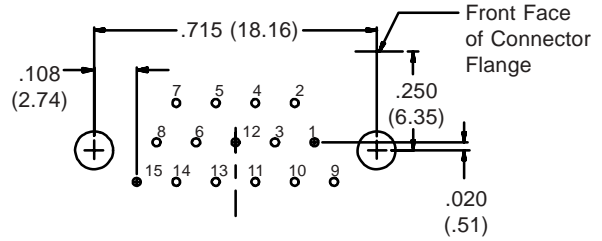
## Right Angle 90°, Narrow Style, .100 Inch Pitch, Socket Connector (Term. Code CBR)



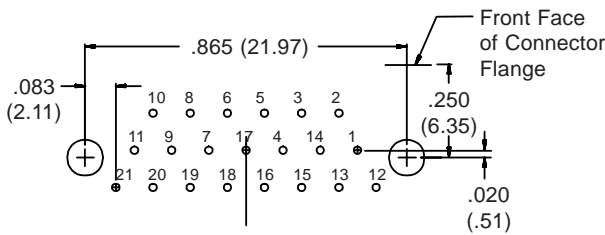
### 9 Contacts



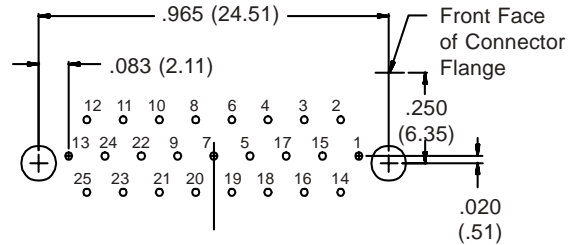
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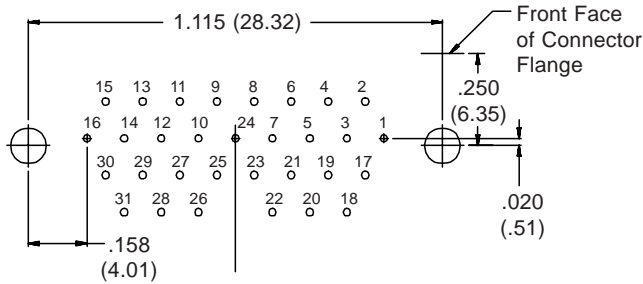
### 21 Contacts



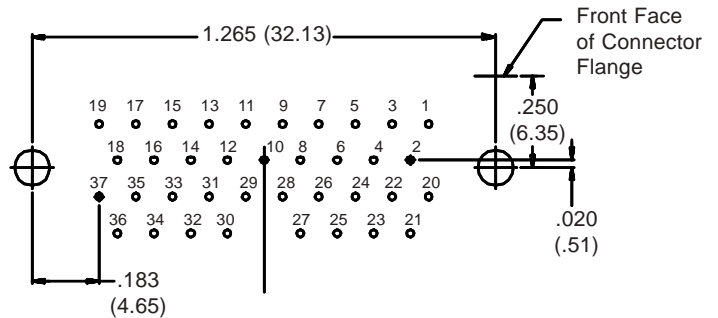
### 25 Contacts



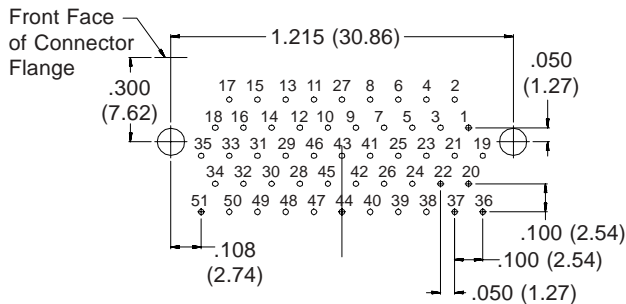
### 31 Contacts



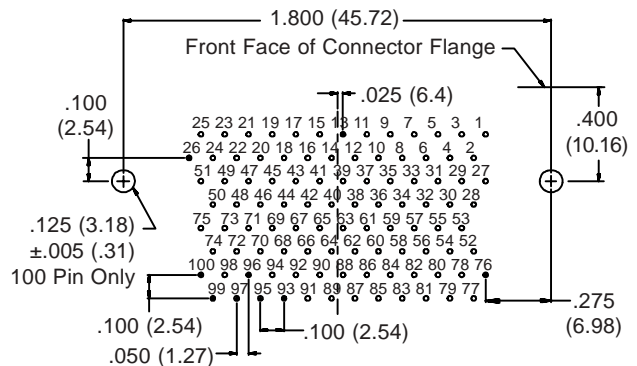
### 37 Contacts



### 51 Contacts



### 100 Contacts



Metric dimensions (mm) are indicated in parentheses.

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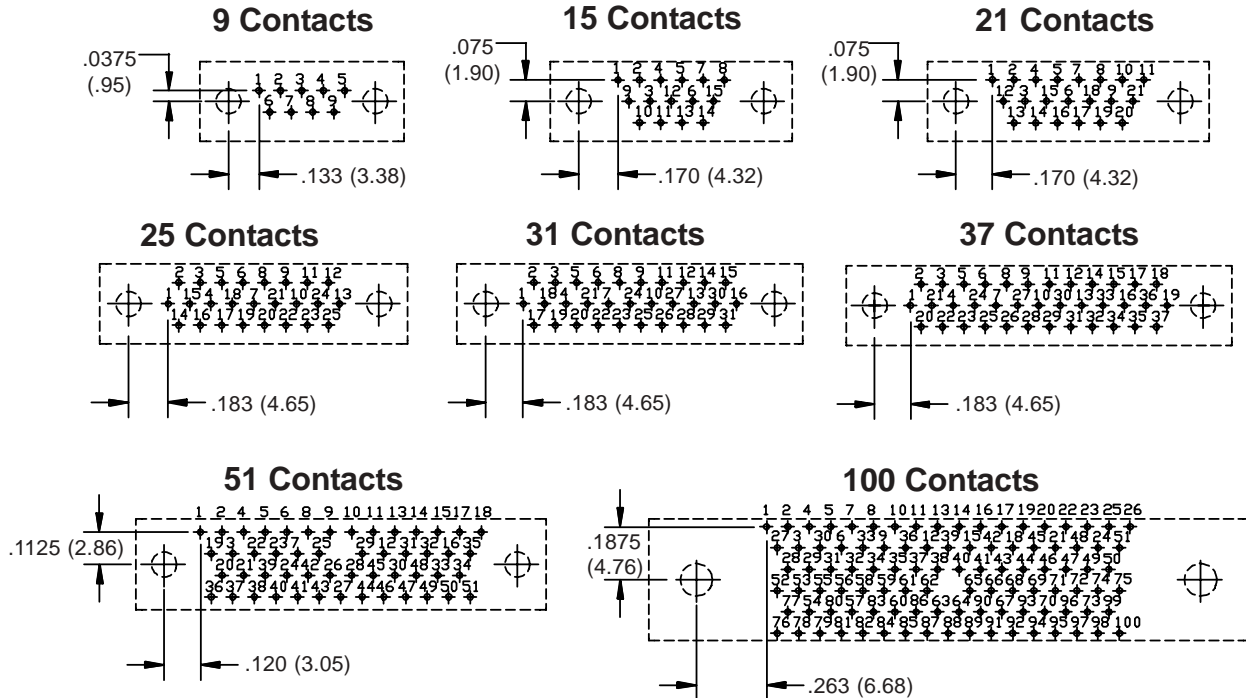
CAGE Codes 06324/0CA77

Printed in U.S.A.

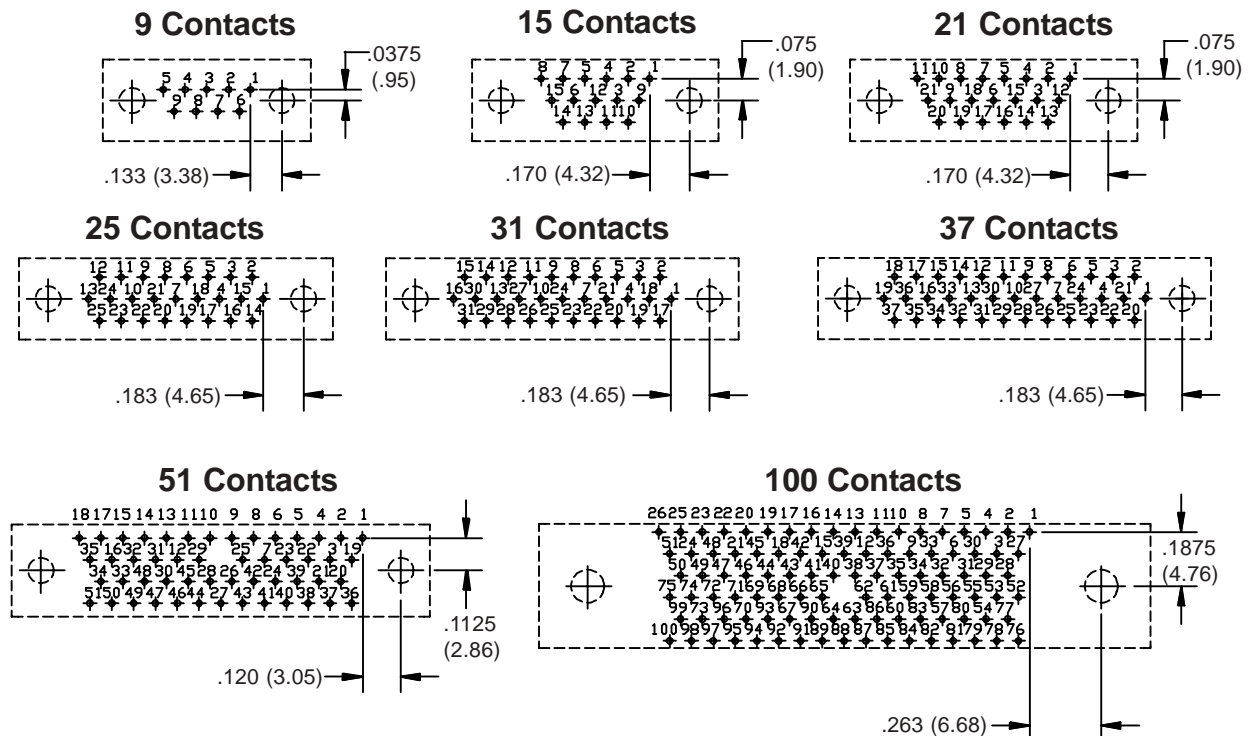
# Printed Circuit Board Layouts Straight, .075 Inch Pitch

Grid Pattern Details: Hole Pitch .0750" (1.90) • Between Rows: .0750" (1.9) • Stagger .0375" (0.95)  
Mounting Holes: Shell Size 9-51 .096" (2.44) ±.005 (.13) • Shell Size 100 .0125" (3.18) ±.005 (.13)

## PIN CONNECTORS



## SOCKET CONNECTORS



Metric dimensions (mm) are indicated in parentheses.

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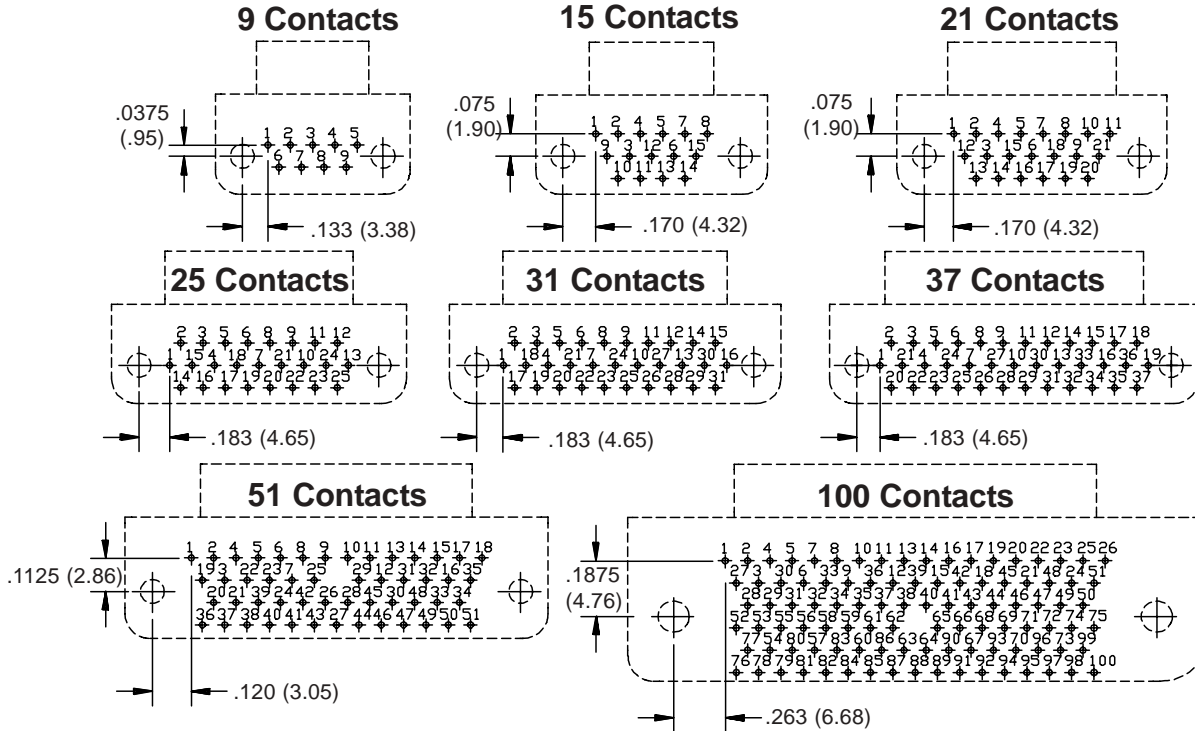
GLENAIR, INC. • 1211 AIR WAY • GLENDALE, CA 91201-2497 • 818-247-6000 • FAX 818-500-9912  
www.glenair.com E-Mail: sales@glenair.com

# Printed Circuit Board Layouts Right Angle 90°, .075 Inch Pitch

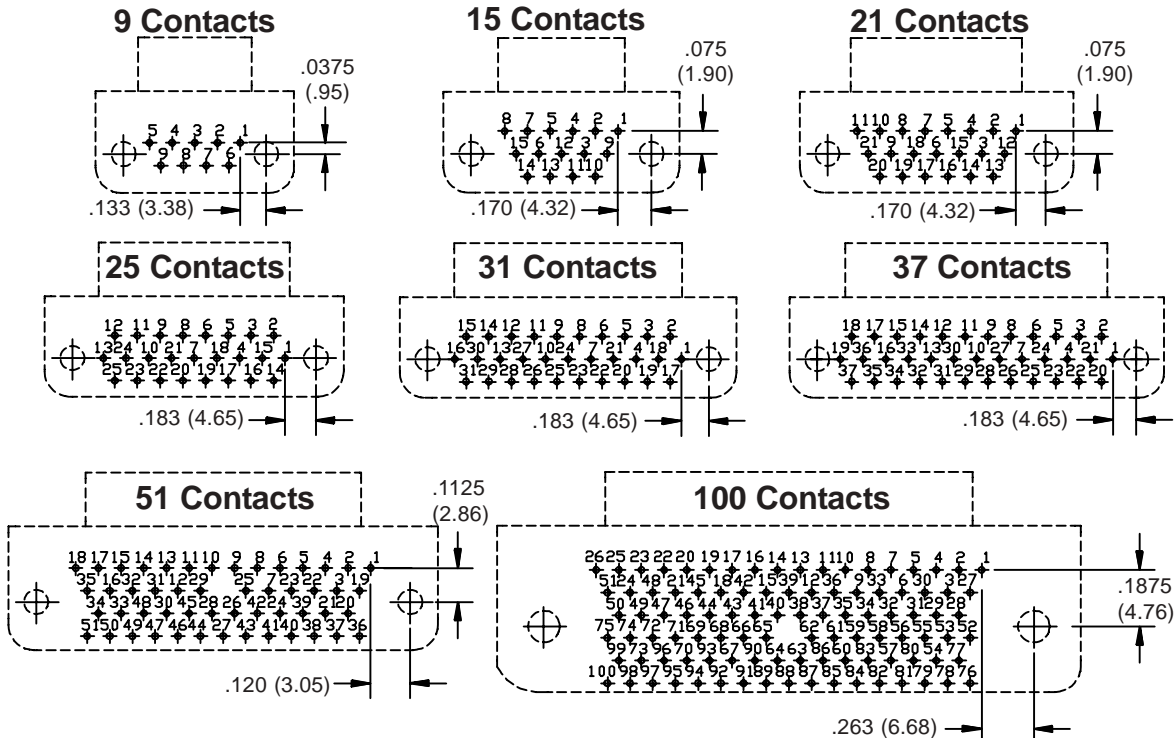


Grid Pattern Details: Hole Pitch .0750" (1.90) • Between Rows: .0750" (1.9) • Stagger .0375" (0.95)  
Mounting Holes: Shell Size 9-51 .096" (2.44) ±.005 (.13) • Shell Size 100 .0125" (3.18) ±.005 (.13)

## PIN CONNECTORS



## SOCKET CONNECTORS



Metric dimensions (mm) are indicated in parentheses.

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CAGE Codes 06324/OCA77

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# Reference Data MIL-STD-681 Wire Color Code

PIN No.	MIL-STD-681 No.	Base Color	First Stripe	Second Stripe	Third Stripe
1	0	BLK			
2	1	BRN			
3	2	RED			
4	3	ORN			
5	4	YEL			
6	5	GRN			
7	6	BLU			
8	7	VIO			
9	8	GRY			
10	9	WHT			
11	90	WHT	BLK		
12	91	WHT	BRN		
13	92	WHT	RED		
14	93	WHT	ORN		
15	94	WHT	YEL		
16	95	WHT	GRN		
17	96	WHT	BLU		
18	97	WHT	VIO		
19	98	WHT	GRY		
20	901	WHT	BLK	BRN	
21	902	WHT	BLK	RED	
22	903	WHT	BLK	ORN	
23	904	WHT	BLK	YEL	
24	905	WHT	BLK	GRN	
25	906	WHT	BLK	BLU	
26	907	WHT	BLK	VIO	
27	908	WHT	BLK	GRY	
28	912	WHT	BRN	RED	
29	913	WHT	BRN	ORN	
30	914	WHT	BRN	YEL	
31	915	WHT	BRN	GRN	
32	916	WHT	BRN	BLU	
33	917	WHT	BRN	VIO	
34	918	WHT	BRN	GRY	
35	923	WHT	RED	ORN	
36	924	WHT	RED	YEL	
37	925	WHT	RED	GRN	
38	926	WHT	RED	BLU	
39	927	WHT	RED	VIO	
40	928	WHT	RED	GRY	
41	934	WHT	ORN	YEL	
42	935	WHT	ORN	GRN	
43	936	WHT	ORN	BLU	
44	937	WHT	ORN	VIO	
45	938	WHT	ORN	GRY	
46	945	WHT	YEL	GRN	
47	946	WHT	YEL	BLU	
48	947	WHT	YEL	VIO	
49	948	WHT	YEL	GRY	
50	956	WHT	GRN	BLU	

PIN No.	MIL-STD-681 No.	Base Color	First Stripe	Second Stripe	Third Stripe
51	957	WHT	GRN	VIO	
52	958	WHT	GRN	GRY	
53	967	WHT	BLU	VIO	
54	968	WHT	BLU	GRY	
55	978	WHT	VIO	GRY	
56	9012	WHT	BLK	BRN	RED
57	9013	WHT	BLK	BRN	ORN
58	9014	WHT	BLK	BRN	YEL
59	9015	WHT	BLK	BRN	GRN
60	9016	WHT	BLK	BRN	BLU
61	9017	WHT	BLK	BRN	VIO
62	9018	WHT	BLK	BRN	GRY
63	9023	WHT	BLK	RED	ORN
64	9024	WHT	BLK	RED	YEL
65	9025	WHT	BLK	RED	GRN
66	9026	WHT	BLK	RED	BLU
67	9027	WHT	BLK	RED	VIO
68	9028	WHT	BLK	RED	GRY
69	9034	WHT	BLK	ORN	YEL
70	9035	WHT	BLK	ORN	GRN
71	9036	WHT	BLK	ORN	BLU
72	9037	WHT	BLK	ORN	VIO
73	9038	WHT	BLK	ORN	GRY
74	9045	WHT	BLK	YEL	GRN
75	9046	WHT	BLK	YEL	BLU
76	9047	WHT	BLK	YEL	VIO
77	9048	WHT	BLK	YEL	GRY
78	9056	WHT	BLK	GRN	BLU
79	9057	WHT	BLK	GRN	VIO
80	9058	WHT	BLK	GRN	GRY
81	9067	WHT	BLK	BLU	VIO
82	9068	WHT	BLK	BLU	GRY
83	9078	WHT	BLK	VIO	GRY
84	9123	WHT	BRN	RED	ORN
85	9124	WHT	BRN	RED	YEL
86	9125	WHT	BRN	RED	GRN
87	9126	WHT	BRN	RED	BLU
88	9127	WHT	BRN	RED	VIO
89	9128	WHT	BRN	RED	GRY
90	9134	WHT	BRN	ORN	YEL
91	9135	WHT	BRN	ORN	GRN
92	9136	WHT	BRN	ORN	BLU
93	9137	WHT	BRN	ORN	VIO
94	9138	WHT	BRN	ORN	GRY
95	9145	WHT	BRN	YEL	GRN
96	9146	WHT	BRN	YEL	BLU
97	9147	WHT	BRN	YEL	VIO
98	9148	WHT	BRN	YEL	GRY
99	9156	WHT	BRN	GRN	BLU
100	9157	WHT	BRN	GRN	VIO



## Reference Data

**TABLE I — STANDARD MATERIALS AND FINISHES**

COMPONENT	MATERIAL	FINISH
Pin Contact	Beryllium Copper per ASTM-B194	50 Minch Gold Per ASTM-B488 Type 3 Over Nickel Underplate
Socket Contact	Phos Bronze per ASTM 139 (See Table III)	50 minch Gold Per ASTM-B488 Type 3 Over Nickel Underplate
Metal Shell	Aluminum Alloy per ASTM B221, Alloy 6061	See Table III
Plastic Shell	Liquid Crystal Polymer per MIL-M-24519	
Insulators/Inserts	Liquid Crystal Polymer per MIL-M-24519	
Interfacial Seals	Flourosilicone Rubber per A-A-59588	
Jackscrows, Jackposts Clips and Bands	Stainless Ser. 300 per SAE-AMS-QQ-S-763	Passivate per ASTM-A967
Encapsulant, Potting Compound	Hysol Epoxy #4215 (Black)	
Terminal Blocks	Liquid Crystal Polymer per MIL-M-24519 or Epoxy	
Backshell Machined Components	Aluminum Alloy, 6061 T6	See Finishes on Backshell Pages
Backshell Die-Cast Components	Aluminum, A380 Alloy	See Finishes on Backshell Pages
Wire	See Table IV for Wire Information	

**TABLE II — CONNECTOR PERFORMANCE SPECIFICATIONS**

PROPERTY	SPECIFICATION	TEST METHOD
Current Rating	3 Amp Maximum	
Dielectric Withstanding Voltage:		
Sea Level	900 VAC	MIL-STD-1344, Method 3001
70,000 Feet	300 VAC	
Contact Resistance	8 milliohms max.	MIL-STD-202, Method 307
Low Level Contact Resistance	32 milliohms max.	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, Para. 4.5.4
Unmating Force	(0.5 ounces min) X (# of contacts)	MIL-DTL-83513, Para. 4.5.4
Contact Retention	5 pounds minimum	MIL-STD-1344, Method 2007
Operating Temperature	-55° C. to +150° C.	
Durability	500 mating cycles minimum	MIL-DTL-83513, Para. 4.5.16
Salt Spray (Corrosion)	48 hours	MIL-STD-1344, Method 1001, Condition B
Outgassing	1.0 percent Total Mass Loss (TML) 0.1 percent Total Volatile Condensable Materials (TVCM)	SP-R-0022 (NASA)
Crimp Tensile Strength:		
Wire Type M22759/11	5 pounds minimum	MIL-DTL-83513, Para. 4.5.20
Wire Type M22759/33	10 pounds minimum	
Fluid Immersion	Perchloroethelyne, 2 hours Lubricating oil (MIL-L-23649), 20 hour: Coolanol 25, 1 hour	MIL-DTL-83513, Para. 4.5.18
Shock	50 G's	MIL-STD-1344, Method 2004, Condition E
Vibration	20 G's	MIL-STD-1344, Method 2005, Condition IV

# Reference Data



**TABLE III — CONNECTOR SHELL MATERIALS AND FINISHES**

Shell Plating Code	Finish	Specification
1	Yellow Chromate over Cadmium	QQ-P-416, Type II Class 3
2	Electroless Nickel	ASTM B733-90, SC2, Type 1, Class J (MIL-C-26074)
4	Black Anodized	MIL-A-8625, Type II Class 2
5	Gold	ASTM-B488
6	Chem Film	MIL-C-5541, Class 3

**TABLE IV — STANDARD WIRING OPTIONS**

Wire Type Ordering Code	Intended Use	Industry Specification and Construction/Electrical Data	Wire Insulation Color/Stocking Information		
			Color Code	Description	Stocked Wire Gages (AWG) *
E	Commercial General Purpose	UL Style 1213 (MIL-W-16878/4 Type E) 7 Strand, Silver-Plated Copper Conductors, Extruded TFE Teflon Insulation, 600 V., 200° C., 5,000 Megohm Insulation Resistance	1	All White	24, 26, 28, 30
			2	All Yellow	24, 26, 28
			5	Mil-STD-681 Striped	--
			7	10 Color Repeat	24,26,28
K	Military General Purpose	MIL-W-22759/11 19 Strand, Silver-Plated Copper Conductors, Extruded TFE Teflon Insulation, 600 V., 200° C., 5,000 Megohm Insulation Resistance	1	All White	24, 26, 28
			2	All Yellow	24, 26, 28
			5	Mil-STD-681 Striped	26 (to 51 conductors only)
			7	10 Color Repeat	24,26,28
J	Aerospace Missiles Satellites	MIL-W-22759/33 19 Strand, Silver-Plated Copper Conductors, Extruded Tefzel Insulation, 600 V., 200° C., 5,000 Megohm Insulation Resistance	1	All White	24, 26, 28, 30
			2	All Yellow	24, 26, 28
			5	Mil-STD-681 Striped	--
			7	10 Color Repeat	24,26,28

\* Stocked wire information valid at time of catalog printing, consult factory if additional codes are needed.

B	P	L	K	M	S	M1	S1	F	R
<b>No Hardware</b> (Hardware Not Required When Ordering Backshells)	<b>Jack-post</b> Factory-Installed Removable	<b>Jack-screw</b> Factory-Installed Non-removable Allen Head	<b>Jack-screw</b> Factory-Installed Non-removable Slot Head	<b>Jack-screw</b> Factory-Installed Removable Allen Head	<b>Jack-screw</b> Factory-Installed Removable Slot Head	<b>Jack-screw</b> Factory-Installed Removable Allen Head	<b>Jack-screw</b> Factory-Installed Removable Slot Head	<b>Float Mount</b> Front Panel Mounting	<b>Float Mount</b> Rear Panel Mounting