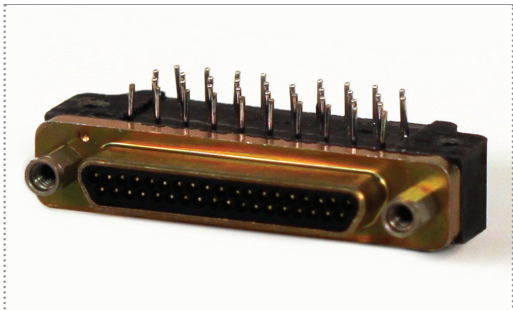


ITT Cannon MDM Series MIL-DTL-83513 Micro-D Connectors



HIGHLY-RELIABLE MINIATURE D-SUB-TYPE TWIST PIN CONNECTOR

ITT Cannon MDM series MIL-DTL-83513 micro-D connectors are small, high-density connectors used where standard d-sub connectors had typically been used, but size and weight are of concern. The MDM series is engineered with a strong yet lightweight aluminum shell and a high-reliability twist pin contact system with Pos-Aline Alignment. ITT Cannon's MDM series are excellent medical connectors and are also perfect for instrumentation and satellite system applications. Mil spec part numbers begin M83513; ITT Cannon part numbers begin MDM. For full details on ITT Cannon MDM series MIL-DTL-83513 micro-D connectors, see the product specifications below.

APPLICATIONS

- Medical Equipment
- Satellites
- Robotics
- Bar Code Scanners
- Hand Held Test Equipment
- Missiles
- Geophysical Equipment
- Commercial Avionics
- Navigation Systems

FEATURES

HIGH-STRENGTH, LIGHT-WEIGHT ALUMINUM SHELLS

These connectors use aircraft/space grade aluminum shells that are capable of withstanding the rigors of space, including ballistic launching into space and the environmental extremes of space.

EXTREMELY SMALL INTERCONNECT

Micro-D connectors are designed with contacts on .050" (1.27) centers and size 24 contacts, providing ultra-high density connectors in half the space typically needed for standard D-Subminiature connectors. These connectors are typically used where small space and lightweight are of primary concern.

UNIQUE TWIST PIN AND SOLID TUBE SOCKET

Micro-D's use ITT Industries twist pins that are constructed by welding seven wires together to form a strong rounded tip. Then, slightly twist the wires to form a birdcage before crimping them into the body of the pin contact. Micro-D's differ from standard D-Subminiature connectors in that the pin contacts are protectively housed in the insulator and the solid tube socket contacts are visibly extended from the socket insulator. This unique design protects the twist pin from damage. The pin contact bird cage gets compressed, elongates and twists inside the smaller diameter of the solid tube socket providing excellent wiping action and extremely low contact bounce, even under high vibration.

TOTAL ENVIRONMENTAL-SEALING SILICONE INTERFACIAL SEALS AND EPOXY-POTTED CONTACTS

The silicone interfacial seal prevents the entrance of environmental contaminants, humidity and moisture from entering the contact area when mated. The wire side of the connectors are potted with high quality epoxy that encapsulates the wire side of the connector and locks the contacts into the insulator, preventing any contact pullout.

PRE-WIRED CONNECTORS FOR FAST, EASY ASSEMBLY

Micro-D connectors are available in three basic styles: solder, printed circuit and the popular pre-wired connector version. This version comes in a wide variety of lengths from short .500" (12.70) solid 25 AWG wires up to 72" (3048.0) Teflon-insulated, stranded 26 AWG wires that can be trimmed down to suit your application and prevents the tedious process of having to solder many fine wires onto the tightly spaced terminals.

MATERIALS & FINISHES

Shell	Aluminum alloy per QQ-A-200/8 (6061-T6)
Plating	Yellow chromate over cadmium per QQ-P-416, Type II, Class 3 over electroless nickel underplate or for Zero cadmium and space applications, electroless nickel per MIL-C-26074, Class 3 of 4, Grade B
Contacts	Pins - outer strands BeCu alloy per QQ-C-530 Inner strands - copper alloy per QQ-W-343, Type S Sleeve - copper alloy per ASTM B75 Sockets - copper alloy per ASTM B140
Plating	Minimum 50 microinches gold per MIL-G-45204, Type II, Grade C, Class 1, over copper flash
Insulator	Liquid Crystal Polymer (LCP) A130 or C130 color black per MIL-M-24519, Type GLCP-30
Interfacial Seals	Flourosilicone elastomer per MIL-R-25988 grade or ZZ-R-765, class 3A, grade 40 (pink)
Epoxy Wire Seals	Pre-wired harnesses - Hysol EE4215/HD3561 (black) Printed circuit - Hysol MG8F-0134 (black)
Wire	25 AWG Solid copper per QQ-W-343, Type S, Plated Tin 100 microinches or gold 10 microinches MDM - 26 AWG Teflon wire 7/34 per MIL-W-16878/4, Type E Yellow or Color Coded per MIL-STD-681 System 1 M83513 - 26 AWG Teflon wire 19/38 per MIL-W-22759 White or Color Coded per MIL-STD-681 System 1 except wire number equals contact cavity number minus 1, and 10 colors repeating

ELECTRICAL DATA

Test Voltage	600 Vac at sea level 150 Vac at 70,000 feet (23410 meters)
Current Rating	3 Amps
Contact Resistance	8 milliohms maximum at 3 amps 10 milliohms maximum at 1 milliamps: MIL-STD-202 Method 307
Insulation Resistance	5000 megaohms minimum at 500 Vdc 1000 megaohms minimum after condition; MIL-STD-1344 Method 1002
Magnetic Permeability	2.0 μ (connectors less hardware)
Thermal Vacuum Outgassing	per NASA SP-R-0022 (space class only)
Total Mass Loss (TML)	1.0 percent maximum Volatile Condensable Material (VCM) 0.1 percent maximum

MECHANICAL

Operating Temperature	-55°C to +125°C (-67°F to +257°F), High Temperature: -55°C to +200°C (-67°F to + 392°F)
Sealing	Humidity
Mating Life	500 cycles minimum
Salt Spray	48 hours MIL-STD-1344 Method 1001 Condition B
Chemical Resistance	Cleaning solvents: Perchloroethylene US practical grade, 2 hours Lubricating oil aircraft turbine engine, synthetic base 20 hours Coolant (coolanol 25 or equivalent) 1 hour +/- 1 minute
Vibration	20g's MIL-STD-1344 Method 2005 Condition IV

TECH SPECS

MECHANICAL

Shock	50g's MIL-STD-1344 Method 2004 Condition C
Contact Type	Pre-wired, solder, printed circuit board (gold-plated)
Number of Circuits	9 to 100
Contact Retention	5 pounds minimum
Polarization	D-shaped shells
Approvals	MIL-DTL-83513

ACCESSORIES

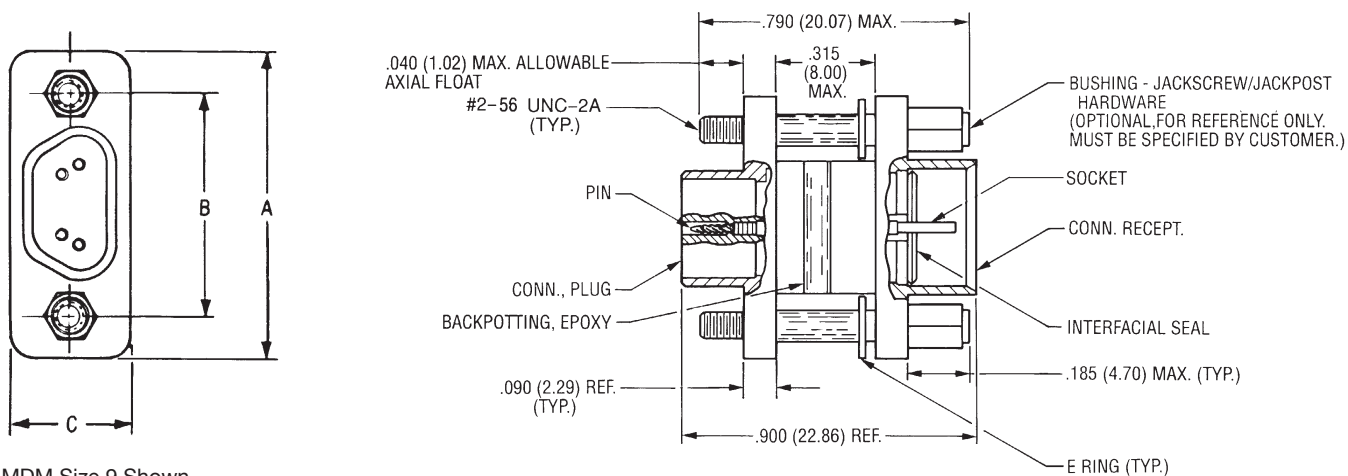
CONNECTOR SAVER

Save wear and tear on your equipment and system connectors by using the "Connector Saver."

The multi-matings and unmatings experienced by most connectors during testing and final check out can be eliminated.

Simply mate the Connector Saver to your unit and use the opposite side for your testing interface... less wear, less tear, less chance of damage. It is available in all eight standard MDM layouts. Mating hardware is available and can be ordered either separately or included with the Connector Saver.

Typical MDM style connections have a minimum mating cycle life of 500 matings. By using up to 500 Connector Savers, equipment mating life can be extended 500 times. 500 mates x 500 Connector Savers = 250,000 matings before you would need to replace/repair the original connector on the piece of equipment.



MDM Size 9 Shown

SIZE	A174 ELECTROLESS NICKEL		*HARDWARE KITS	A MAX.	B +/- .005 (0.13)	C MAX.
	WITH HARDWARE	W/O HARDWARE				
9	MDM98479-86	MDM98479-18	320-9505-014**	.785 (19.94)	.565 (14.35)	.308 (7.82)
15	MDM98479-87	MDM98479-19		.935 (23.75)	.715 (18.16)	.308 (7.82)
21	MDM98479-88	MDM98479-20		1.085 (27.56)	.865 (21.97)	.308 (7.82)
25	MDM98479-89	MDM98479-21		1.185 (30.10)	.965 (24.51)	.308 (7.82)
31	MDM98479-90	MDM98479-14		1.335 (33.91)	1.115 (28.32)	.308 (7.82)
37	MDM98479-91	MDM98479-15		1.485 (37.72)	1.265 (32.13)	.308 (7.82)
51	MDM98479-92	MDM98479-16		1.435 (36.45)	1.215 (30.86)	.351 (8.91)
100	MDM98479-93	MDM98479-17	320-9508-014***	2.170 (55.12)	1.800 (45.72)	.394 (10.01)

* Kit contains 2 bushings-jackpost/jackscrew and 2 E-rings.

** Size 9-51 - #2-56 UNC-2B Thread

*** Size 100 - #4-40 UNC-2B Thread

All dimensions in inches (millimeters in parentheses) unless otherwise stated.

CREATE PART NUMBER

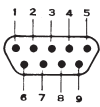
1	2	3	4	5	6
MDM	-15	P	S	K	-A174
SHELL STYLE	LAYOUT	CONTACT	TERMINATIONS	HARDWARE	MOD CODE

STEP 1: CHOOSE INSERT MATERIAL TYPE

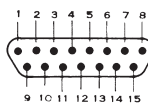
MDM OR RMDM (RoHS - A147 Plating)

Liquid Crystal Polymer*

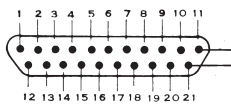
STEP 2: CHOOSE LAYOUT



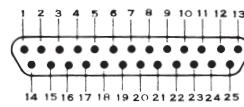
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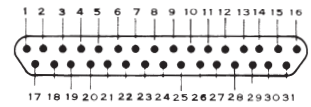
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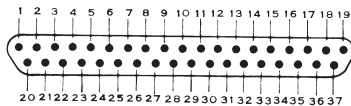
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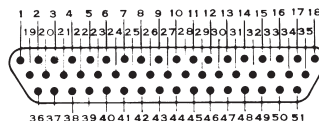
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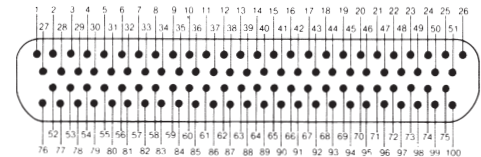
31



37



51



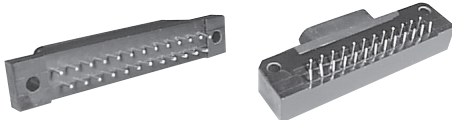
100

STEP 3: CHOOSE CONTACT TYPE

P = Pin (In plug) **S** = Socket (In receptacle)

STEP 4: CHOOSE TERMINATIONS

PCB TERMINATIONS



BS
Straight Printed
Circuit Board

BR
Right Angle
Printed Circuit
Board



CBR
Narrow Profile
Right Angle Printed
Circuit Board

SOLDER TERMINATIONS



S
Solder Cup 26
AWG Wire Max.

**WIRE TERMINATIONS **
SOLID UNINSULATED 25
AWG GOLD PLATED WIRE**

CODE	LENGTH INCHES (MM)
L61	.125 (3.18)
L56	.150 (3.81)
L57	.190 (4.83)
L39	.250 (6.35)
L58	.375 (9.52)
L1	.500 (12.70)
L14	.750 (19.05)
L2	1.000 (25.40)
L7	1.500 (38.11)
L6	2.000 (50.80)
L16	2.500 (63.50)
L10	3.000 (76.20)

**16878/4
STRANDED WIRE
TERMINATIONS ****

YELLOW	COLOR CODED	LENGTH INCHES (MM)
H020	H027	3 (76.2)
H019	H016	6 (152.4)
H026	H034	8 (203.2)
H029	H025	10 (254.0)
H028	H002	12 (304.8)
H001	H003	18 (457.2)
H038	H023	20 (508.0)
H009	H004	24 (609.6)
H010	H005	30 (762.0)
H011	H006	36 (914.4)
H013	H048	48 (1219.2)
H017	H046	72 (1828.8)
H042	H041	120 (3048.0)

* Note Previous Material was Diallyl Phthalate or Polyester.

** For wire lengths and types other than listed, please call.

Dimensions are shown in Inches (mm) unless otherwise indicated.

STEP 5: CHOOSE HARDWARE

PCB HARDWARE

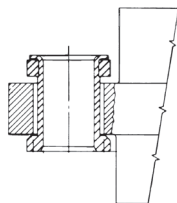


T = Threaded;
(Right angle PCB Only)
Sizes 9-51 = 2-56 thread
Size 100 = 4-40 thread

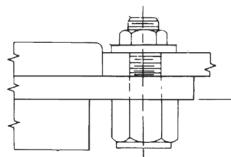
A = Large Through Hole;
Sizes 9-51 = .125
(3.18) diameter
Size 100 = .120
(3.05) diameter

B = Standard Through Hole;
9-51 contacts = .091 (2.31)
100 contacts = .120 (3.05)

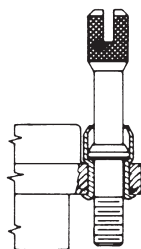
B1 = Through Hole for size 100;
.1475 (3.75) per MIL-C-83513



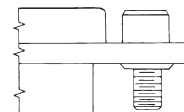
F = Float Mount



P = Jackpost



K = Jackscrew



L = Low Profile Jackscrew
(hex head)

M = Military;
➔ See page 247

STEP 6: CHOOSE MOD CODE

OMIT FOR STANDARD

(Yellow Chromate over Cadmium)



A174* = Electroless nickel (RoHS) not needed with RMDM prefix
A172 = Gold over nickel
A141 = Iridate/Iodine
A30 = Black anodized

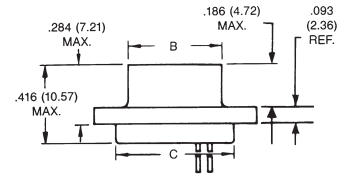
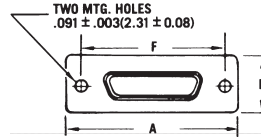
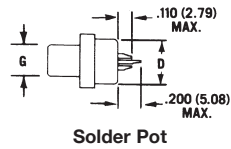
F222 = Special high-temperature version, -55°C to +200°C
(-67° F to +392°F), default plating is Yellow Chromate over Cadmium

A174-F222 = Special high-temperature version 55°C to +200°C
(-67° F to +392°F) Electroless Nickel

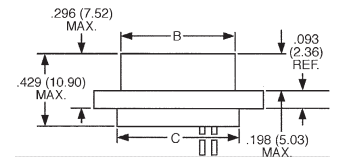
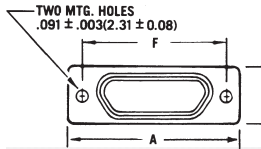
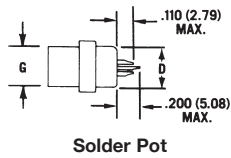
*PCB versions are not RoHS, PC tails are tin-lead plated.

DIMENSIONS

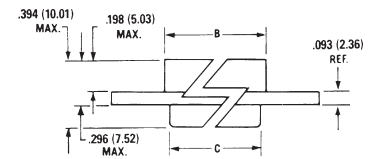
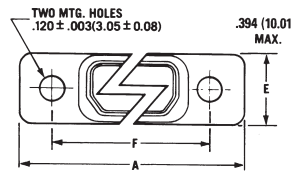
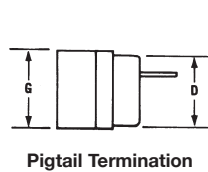
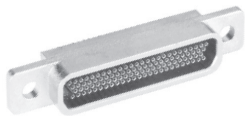
SHELL DIMENSIONS (CONFORMS TO MIL-DTL-83513)



RECEPTACLE STYLES



RECEPTACLE (MDM-100 ONLY)

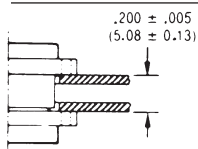


PART NUMBER BY SHELL SIZE	A MAX.	B MAX S.	C MAX.	D MAX.	E MAX.	F +/- .005 (0.13)	G MAX.	AVERAGE WEIGHTS** OZ. (GM.) +/- 5%
MDM-9P*	.785 (19.94)	.334 (8.48)	.400 (10.16)	.270 (6.86)	.308 (7.82)	.565 (14.35)	.185 (4.70)	.063 (1.79)
MDM-9S*	.785 (19.94)	.402 (10.21)	.400 (10.16)	.270 (6.86)	.308 (7.82)	.565 (14.35)	.253 (6.43)	.063 (1.79)
MDM-15P*	.935 (23.75)	.484 (12.29)	.550 (13.97)	.270 (6.86)	.308 (7.82)	.715 (18.16)	.185 (4.70)	.084 (2.39)
MDM-15S*	.935 (23.75)	.552 (13.97)	.550 (13.97)	.270 (6.86)	.308 (7.82)	.715 (18.16)	.253 (6.43)	.083 (2.37)
MDM-21P*	1.085 (27.56)	.634 (16.10)	.700 (17.78)	.270 (6.86)	.308 (7.82)	.865 (21.97)	.185 (4.70)	.105 (2.99)
MDM-21S*	1.085 (27.56)	.702 (17.83)	.700 (17.78)	.270 (6.86)	.308 (7.82)	.865 (21.97)	.253 (6.43)	.104 (2.97)
MDM-25P*	1.185 (30.10)	.734 (18.64)	.800 (20.32)	.270 (6.86)	.308 (7.82)	.965 (24.51)	.185 (4.70)	.119 (3.39)
MDM-25S*	1.185 (30.10)	.802 (20.37)	.800 (20.32)	.270 (6.86)	.308 (7.82)	.965 (24.51)	.253 (6.43)	.118 (3.36)
MDM-31P*	1.335 (33.91)	.884 (22.45)	.950 (24.13)	.270 (6.86)	.308 (7.83)	1.115 (28.32)	.185 (4.70)	.140 (3.99)
MDM-31S*	1.335 (33.91)	.952 (24.18)	.950 (24.13)	.270 (6.86)	.308 (7.83)	1.115 (28.32)	.253 (6.43)	.139 (3.96)
MDM-37P*	1.485 (37.72)	1.034 (26.26)	1.100 (27.94)	.270 (6.86)	.308 (7.82)	1.265 (32.13)	.185 (4.70)	.161 (4.59)
MDM-37S*	1.485 (37.72)	1.102 (27.99)	1.100 (27.94)	.270 (6.86)	.308 (7.82)	1.265 (32.13)	.253 (6.43)	.160 (4.56)
MDM-51P*	1.435 (36.45)	.984 (24.99)	1.050 (26.67)	.310 (7.87)	.351 (8.92)	1.215 (30.86)	.228 (5.79)	.193 (5.50)
MDM-51S*	1.435 (36.45)	1.052 (26.72)	1.050 (26.67)	.310 (7.87)	.351 (8.92)	1.215 (30.86)	.296 (7.52)	.188 (5.35)
MDM-100P*	2.170 (55.12)	1.384 (35.15)	1.442 (36.63)	.360 (9.14)	.394 (10.01)	1.800 (45.72)	.271 (6.88)	.500 (14.3)
MDM-100S*	2.170 (55.12)	1.508 (38.10)	1.442 (36.63)	.360 (9.14)	.394 (10.01)	1.800 (45.72)	.394 (10.01)	1.040 (29.5)

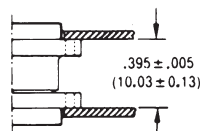
*Add lead type and length; see How to Order.

**Weight given is 1/2", insulated, solid, #25 AWG gold plated copper pigtailed
All dimensions in inches (millimeters in parentheses) unless otherwise stated.

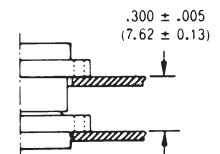
PANEL MOUNTING DIMENSIONS (SIZES 9-100)



PLUG AND RECEPTACLE REAR MOUNTED

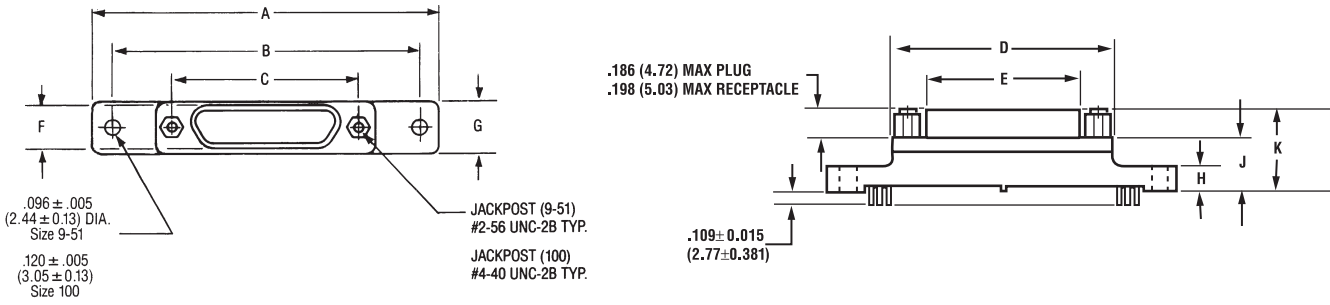


PLUG AND RECEPTACLE FRONT MOUNTED



PLUG FRONT MOUNTED RECEPTACLE REAR MOUNTED

BS (BOARD STRAIGHT) SERIES

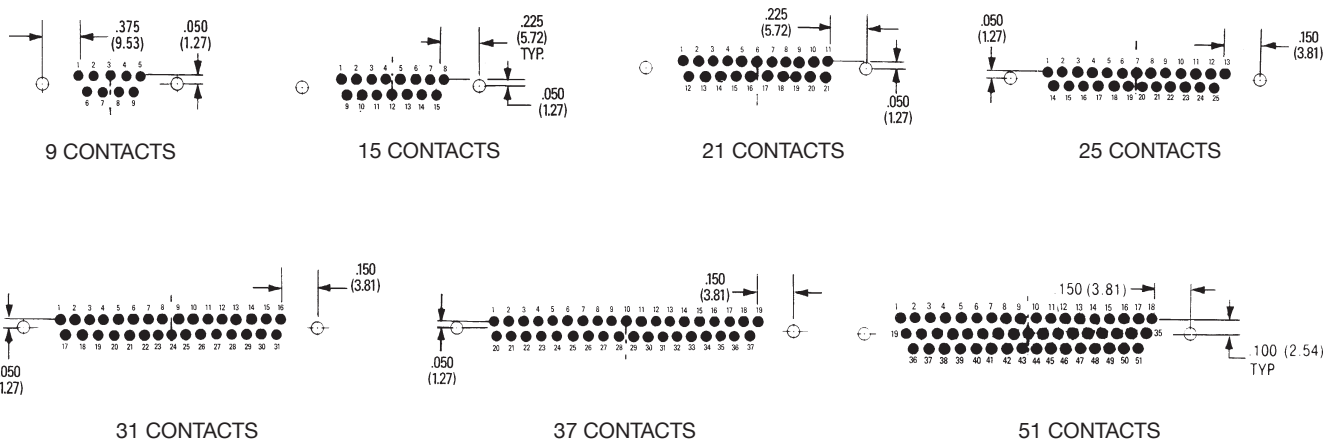


PART NUMBER BY SHELL SIZE	A MAX.	B ±.007 (.018)	C ±.005 (.013)	D MAX.	E MAX.	F ±.005 (.013)	G MAX.	H MAX.	J MAX.	K MAX.
MDM-9PBS*	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.785 (19.94)	.334 (8.48)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-9SBS*	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.785 (19.94)	.402 (10.21)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-15PBS*	1.390 (35.31)	1.150 (29.21)	.715 (18.16)	.935 (23.75)	.484 (12.29)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-15SBS*	1.390 (35.31)	1.150 (29.21)	.715 (18.16)	.935 (23.75)	.552 (13.97)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-21PBS*	1.690 (43.93)	1.450 (36.83)	.865 (21.97)	1.085 (27.56)	.634 (16.10)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-21SBS*	1.690 (43.93)	1.450 (36.83)	.865 (21.97)	1.085 (27.56)	.702 (17.83)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-25PBS*	1.740 (44.20)	1.500 (38.10)	.965 (24.51)	1.185 (30.10)	.734 (18.64)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-25SBS*	1.740 (44.20)	1.500 (38.10)	.964 (24.51)	1.185 (30.10)	.802 (20.37)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-31PBS*	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.335 (33.91)	.884 (22.45)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-31SBS*	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	1.335 (33.91)	.952 (24.18)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-37PBS*	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.485 (37.72)	1.034 (26.26)	.185 (4.70)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-37SBS*	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.485 (37.72)	1.102 (27.99)	.253 (6.43)	.308 (7.82)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-51PBS*	2.270 (67.66)	2.000 (50.80)	1.215 (30.86)	1.435 (36.45)	.984 (24.99)	.228 (5.79)	.351 (8.92)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-51SPS*	2.270 (67.66)	2.000 (50.80)	1.215 (30.86)	1.435 (36.45)	1.052 (26.72)	.296 (7.52)	.351 (8.92)	.165 (4.19)	.355 (9.02)	.555 (14.10)
MDM-100PBS*	3.070 (77.98)	2.800 (71.12)	1.800 (45.72)	2.175 (55.24)	1.384 (35.15)	.271 (6.88)	.460 (11.68)	.303 (7.70)	.550 (12.70)	.686 (17.42)
MDM-100SBS*	3.070 (77.98)	2.800 (71.12)	1.800 (45.72)	2.175 (55.24)	1.508 (38.30)	.394 (10.01)	.460 (11.68)	.303 (7.70)	.550 (12.70)	.686 (17.42)

*For jackpost, add letter "P" or "M7" for sizes 9-51, "M17" for size 100.
 All dimensions in inches (millimeters in parentheses) unless otherwise stated.
 Dimensions are subject to change.

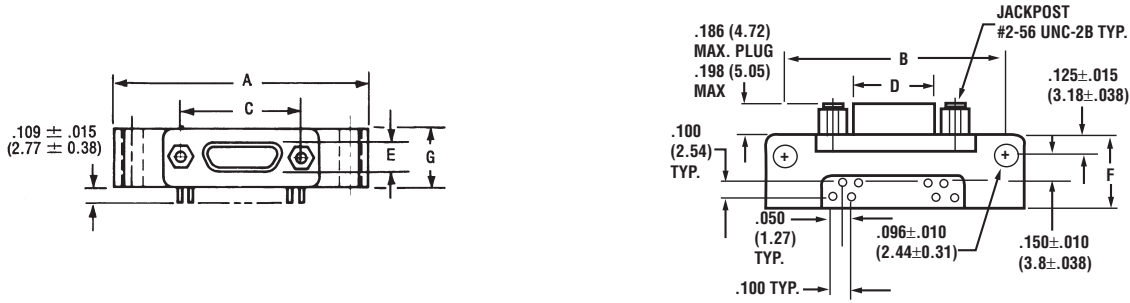
BS (BOARD STRAIGHT) PIN TERMINATION ARRANGEMENTS

View PCB Solder Side



DIMENSIONS

BR (BOARD RIGHT ANGLE) SERIES

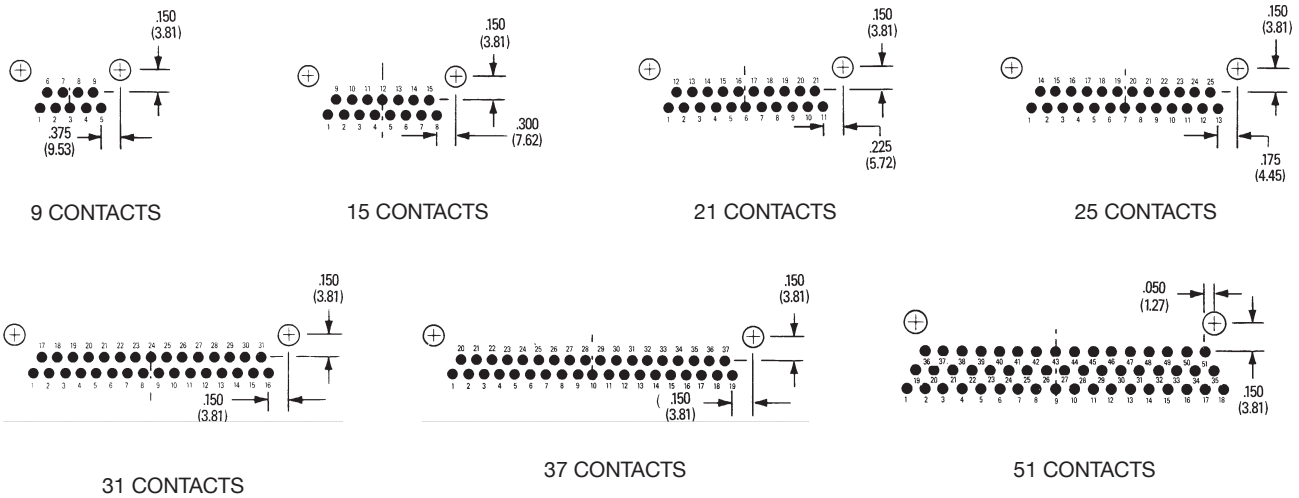


PART NUMBER BY SHELL SIZE	A MAX.	B ±.007 (.018)	C ±.005 (.013)	D MAX.	E MAX.	F MAX.	G MAX.
MDM-9PBR*	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.334 (8.48)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-9SBR*	1.390 (35.31)	1.150 (29.21)	.565 (14.35)	.402 (10.21)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-15PBR*	1.540 (39.12)	1.300 (33.02)	.715 (18.16)	.484 (12.29)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-15SBR*	1.540 (39.12)	1.300 (33.02)	.715 (18.16)	.552 (13.97)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-21PBR*	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	.634 (16.10)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-21SBR*	1.690 (42.93)	1.450 (36.83)	.865 (21.97)	.702 (17.83)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-25PBR*	1.790 (45.47)	1.550 (39.37)	.965 (24.51)	.734 (18.64)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-25SBR*	1.790 (45.47)	1.550 (39.37)	.965 (24.51)	.802 (20.37)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-31PBR*	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.884 (22.45)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-31SBR*	2.040 (51.82)	1.800 (45.72)	1.115 (28.32)	.952 (24.18)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-37PBR*	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.034 (26.26)	.185 (4.70)	.455 (11.56)	.308 (7.82)
MDM-37SBR*	2.340 (59.44)	2.100 (53.34)	1.265 (32.13)	1.102 (27.99)	.253 (6.43)	.455 (11.56)	.308 (7.82)
MDM-51PBR*	1.875 (47.63)	1.600 (40.64)	1.215 (30.86)	.984 (24.99)	.228 (7.52)	.565 (14.35)	.351 (8.92)
MDM-51SBR*	1.875 (47.63)	1.600 (40.64)	1.215 (30.86)	1.052 (26.72)	.296 (7.52)	.565 (14.35)	.351 (8.92)

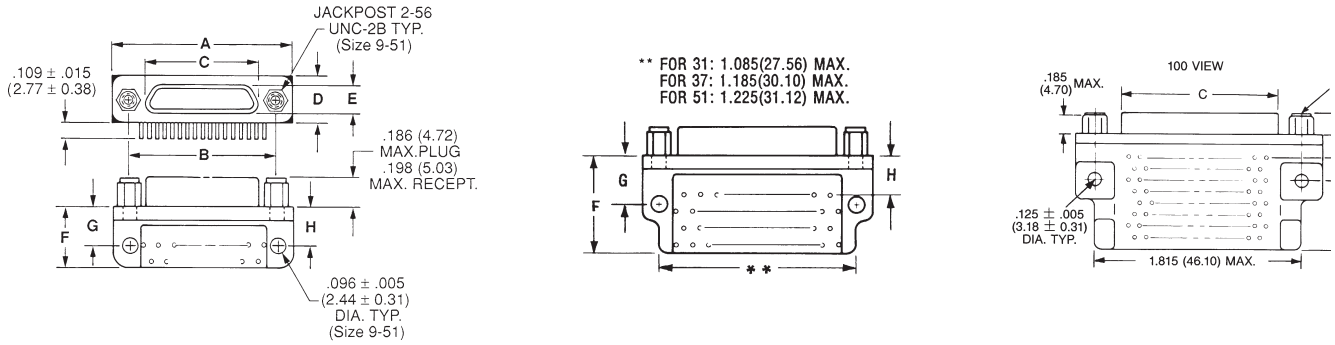
*For jackpost, add letter "P" or "M7" for sizes 9-51, "M17" for size 100.
 Dimensions are shown in inches (millimeters).
 Dimensions are subject to change.

BR (BOARD RIGHT ANGLE) PIN TERMINATION ARRANGEMENTS

View PCB Solder Side



CBR (CONDENSED BOARD RIGHT ANGLE) SERIES

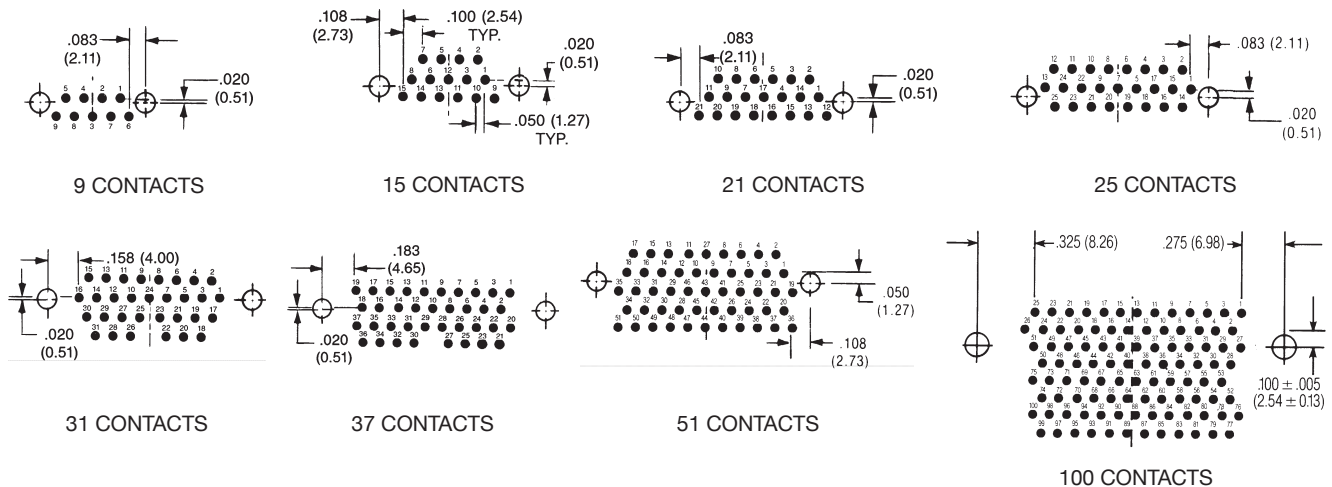


PART NUMBER BY SHELL SIZE	A MAX.	B ±.005 (.013)	C MAX.	D MAX.	E MAX.	F MAX.	G ±.010 (.025)	H ±.010 (.025)
MDM-9PCBR*	.785 (19.94)	.565 (19.94)	.334 (8.48)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.230 (5.18)
MDM-9SCBR*	.785 (19.94)	.565 (19.94)	.402 (10.21)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.230 (5.18)
MDM-15PCBR*	.935 (23.75)	.715 (18.16)	.484 (12.29)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-15SCBR*	.935 (23.75)	.715 (18.16)	.552 (13.87)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-21PCBR*	1.085 (27.56)	.865 (21.97)	.634 (16.10)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-21SCBR*	1.085 (27.56)	.865 (21.97)	.702 (17.83)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-25PCBR*	1.185 (30.10)	.965 (24.51)	.734 (18.64)	.308 (7.82)	.185 (4.70)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-25SCBR*	1.185 (30.10)	.965 (24.51)	.802 (20.37)	.308 (7.82)	.253 (6.43)	.420 (10.67)	.250 (6.35)	.130 (3.30)
MDM-31PCBR*	1.335 (33.91)	1.115 (28.32)	.884 (22.45)	.308 (7.82)	.185 (4.70)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-31SCBR*	1.335 (33.91)	1.115 (28.32)	.952 (24.18)	.308 (7.82)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-37PCBR*	1.485 (37.72)	1.265 (32.13)	1.034 (26.26)	.308 (7.82)	.185 (4.70)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-37SCBR*	1.485 (37.72)	1.265 (32.13)	1.102 (27.99)	.308 (7.82)	.253 (6.43)	.520 (13.21)	.250 (6.35)	.130 (3.30)
MDM-51PCBR*	1.435 (36.45)	1.215 (30.86)	.984 (24.99)	.351 (8.92)	.228 (5.79)	.650 (16.15)	.300 (7.62)	.150 (3.81)
MDM-51SCBR*	1.435 (36.45)	1.215 (30.86)	1.052 (26.72)	.351 (8.92)	.296 (7.52)	.650 (16.15)	.300 (7.62)	.150 (3.81)
MDM-100PCBR*	2.170 (55.12)	1.800 (45.72)	1.384 (35.15)	.394 (10.01)	.271 (6.88)	1.000 (25.40)	.400 (10.16)	.200 (5.08)
MDM-100SCBR*	2.170 (55.12)	1.800 (45.72)	1.508 (38.10)	.394 (10.01)	.394 (10.01)	1.000 (25.40)	.400 (10.16)	.200 (5.08)

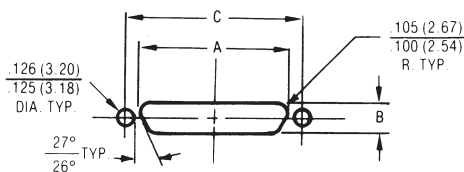
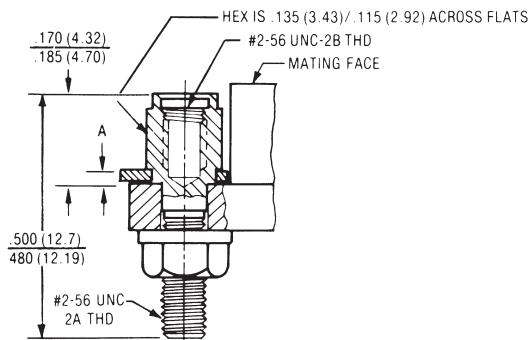
*For jackpost, add letter "P" or "M7" for sizes 9-51, "M17" for size 100.
Dimensions are shown in inches (millimeters).
Dimensions are subject to change.

CBR (CONDENSED BOARD RIGHT ANGLE) PIN TERMINATION ARRANGEMENTS

View PCB Solder Side



JACKPOST BUSHING (FOR REAR PANEL MOUNTING FOR SIZES 9-51)



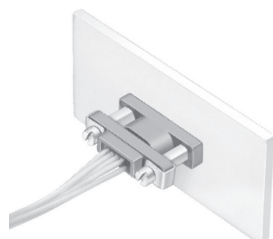
JACKPOST DIAMETER IS .124/.120 (3.15/3.05).

JACKPOST KIT NUMBER*	PANEL THICKNESS
320-9505-007	3/32 (2.4)
320-9505-006	1/16 (1.6)
320-9505-005	3/64 (1.2)
320-9505-004	1/32 (0.8)

PLUG AND RECEPTACLE PANEL CUTOUT DIMENSIONS			
SHELL SIZE	A + .004 (0.10) .000 (0.00)	B + .004 (0.10) .000 (0.00)	C ±.005 (0.13)
9	.401 (10.19)	.252 (6.40)	.565 (14.35)
15	.551 (14.00)	.252 (6.40)	.715 (18.16)
21	.701 (17.81)	.252 (6.40)	.865 (21.97)
25	.801 (20.34)	.252 (6.40)	.965 (24.51)
31	.951 (24.16)	.252 (6.40)	1.115 (28.34)
37	1.101 (27.97)	.252 (6.40)	1.265 (32.13)
51	1.051 (26.70)	.295 (7.49)	1.215 (30.86)

*A kit consists of 2 jackposts, 2 nuts, 2 washers.
All dimensions in inches (millimeters in parentheses) unless otherwise stated.

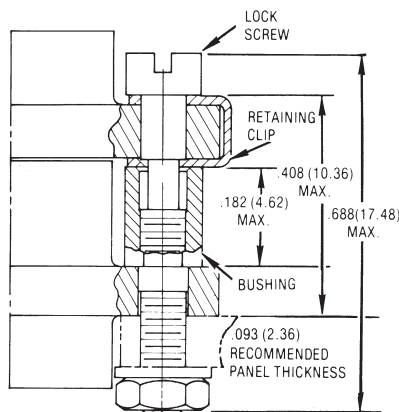
MOUNTING HARDWARE VIEWS FOR SIZES 9 - 51



SCREW LOCK ASSEMBLY

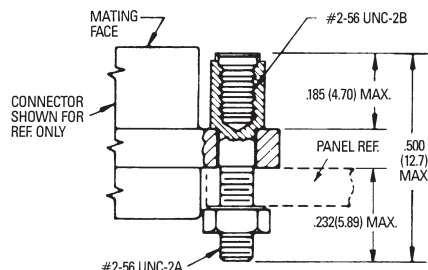
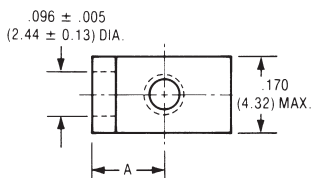


90° ANGLE MOUNTING BRACKET

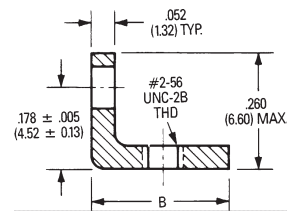


SCREW LOCK ASSEMBLY*

*NOTE: Torque value is 2.5 in/lbs max.



JACKPOST - (P)



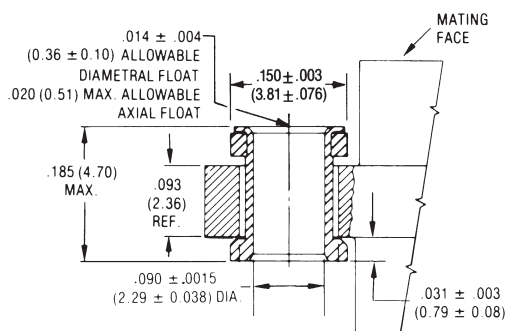
PART NUMBER	DESCRIPTION	A ±.005(±0.13)	B MAX.
322-9500-000	Screw Lock Assembly		N/A
320-9505-000	Jackpost Kit		N/A
015-9516-002	Mounting Bracket 90° MDM for 9 thru 37 Shell Sizes	.147 (3.73)	.308 (7.82)
015-9516-003	Mounting Bracket 90° MDM for 51 Shell Size	.169 (4.29)	.350 (8.89)

All dimensions in inches (millimeters in parentheses) unless otherwise stated.

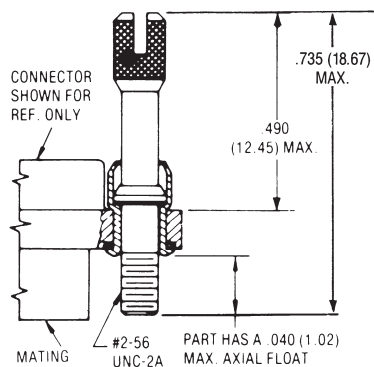
NOTES: Screw lock assembly (322-9500-000) can be used for front mounting only. Jackpost kit (320-9505-000) consists of two assemblies, shipped unassembled.

MOUNTING HARDWARE VIEWS FOR SIZES 9 - 51

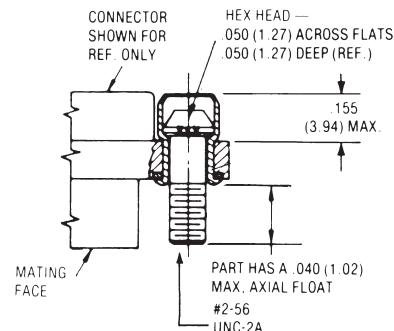
This hardware is factory-installed.



90° ANGLE MOUNTING BRACKET



JACKSCREW - (K) STANDARD



JACKSCREW - (L) LOW PROFILE

Shown here is a cutaway view of the float mount for the MDM connector. The basic shell dimensions are the same for the float mount and the screw mounting hole configurations. View shown is for standard float mount front panel mounting. Reverse mounting is available on request.

*NOTE: Torque values are as follows: Low Profile Jackscrew (L)-2.5 in/lbs. Standard Jackscrew (K)-2.5 in/lbs.

MOUNTING HARDWARE TO MILITARY SPECIFICATION (FOR SIZES 9 - 100) PER MIL-DTL-83513/05

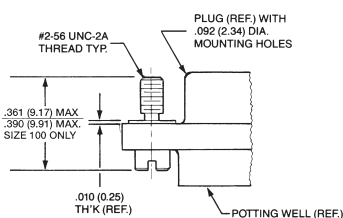


FIGURE 1. JACKSCREW:
Low profile
Slotted Head
Size 9-51
Size 100*

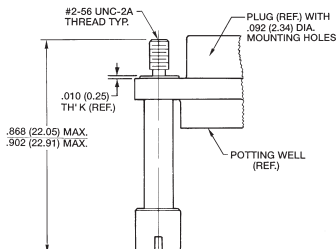


FIGURE 2. JACKSCREW:
High profile
Slotted Head
Size 9-51
Size 100*

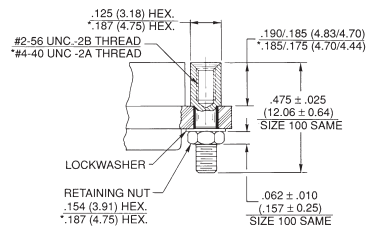
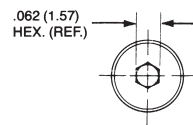


FIGURE 3. JACKSCREW:
Jackpost Assembly
Size 9-51
Size 100*



ALLEN HEAD
Optional Head Configuration
Plug and Receptacle
Low and High Profile
Size 9-51
Size 100*

DESCRIPTION	SIZE 9-51			SIZE 100*		
	MOD CODE	PART NUMBER	MIL #	MOD CODE	PART NUMBER	MIL #
Slotted Head Jackscrew Assy Low Profile (Figure 1)	M5	320-9508-025	M83513/05-05	M15	320-9508-021	M83513/05-15
Slotted Head Jackscrew Assy High Profile (Figure 2)	M6	320-9509-027	M83513/05-06	M16	320-9508-023	M83513/05-16
Allen Head Jackscrew Assy Low Profile (Figure 1)	M2	320-9508-026	M83513/05-02	M12	320-9508-022	M83513/05-12
Allen Head Jackscrew Assy High Profile (Figure 2)	M3	320-9508-028	M83513/05-03	M13	320-9508-024	M83513/05-13
Jackpost Assy (Figure 3)	M7	320-9505-033	M83513/05-07	M17	320-9505-030	M83513/05-17

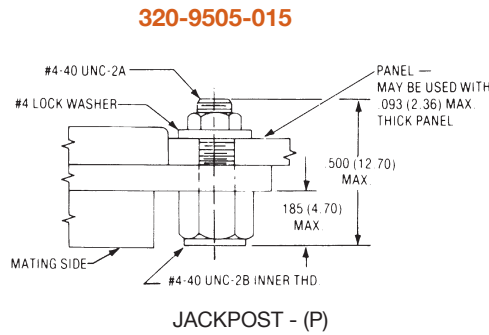
*Size 100 requires B1 size mounting holes.
To order hardware kits separately, order either by M83513/05-** or by 320-950X-XXX.
All dimensions in inches (millimeters in parentheses) unless otherwise stated.

SIZE 100 MOUNTING HARDWARE VIEWS

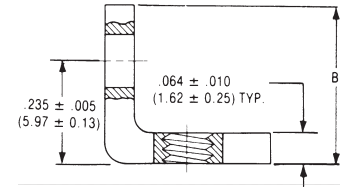
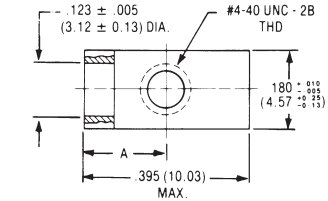
This hardware supplied unassembled.



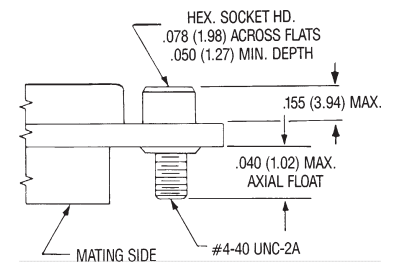
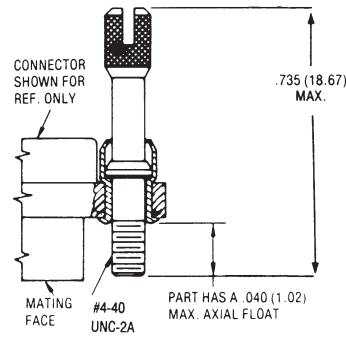
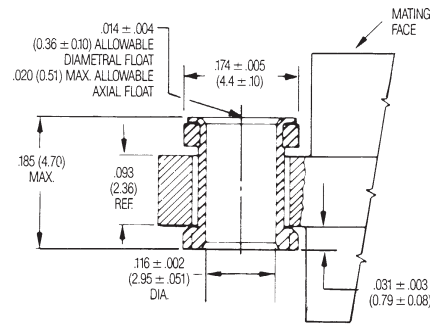
90° ANGLE MOUNTING BRACKET



015-9528-000



PRE-INSTALLED HARDWARE

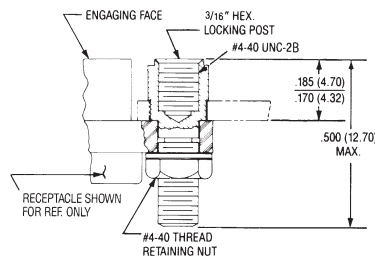


*NOTE: Torque values are as follows: Low Profile Jackscrew (L)-4.0 in/lbs. Standard Jackscrew (K)-4.0 in/lbs.

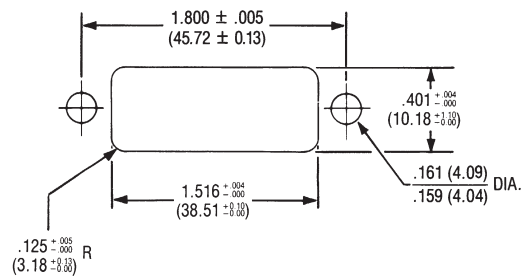
JACKPOST BUSHING FOR REAR PANEL MOUNTING

JACKPOST KIT NUMBER*	PANEL THICKNESS
320-9505-013	3/32 (2.4)
320-9505-012	1/16 (1.6)
320-9505-010	1/32 (0.8)
320-9505-011	3/64 (1.2)

*2 jackposts, 2 nuts, 2 washers



Dimensions for Rear Panel Mounting



Dimensions are shown in Inches (mm) unless otherwise indicated.

PANEL CUTOUTS

9-51 SHELL SIZES

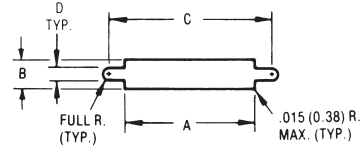


FIGURE 1
FRONT MOUNTING

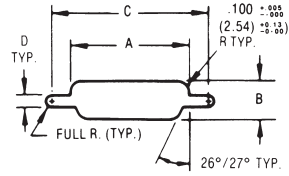


FIGURE 2
REAR MOUNTING

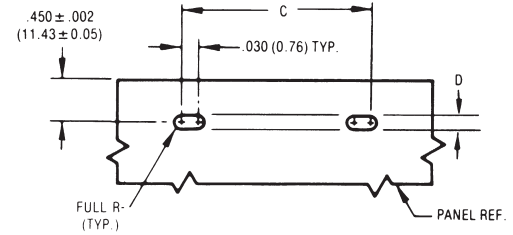


FIGURE 3
EDGEBOARD MOUNTING

NOTES:

1. Front mounting (Figure 1) and rear mounting (Figure 2) accommodates #2-56 screws.

2. Front mounting is preferred. However, when rear mounting is necessary, use Figure 2 dimensions when jackscrews are used.

SHELL SIZE	CUTOUT FIGURE	A +.004 (0.10) -.000 (0.00)	B +.004 (0.10) -.000 (0.00)	C +.005 (0.13) -.000 (0.00)	D +.005 (0.13) -.000 (0.00)
9	1	.408 (10.36)	.271 (6.88)	.570 (14.48)	.089 (2.26)
	2	.401 (10.19)	.252 (6.40)	.570 (14.48)	.089 (2.26)
	3	-	-	.570 (14.48)	.089 (2.26)
15	1	.558 (14.17)	.271 (6.88)	.720 (18.29)	.089 (2.26)
	2	.551 (14.00)	.252 (6.40)	.720 (18.29)	.089 (2.26)
	3	-	-	.720 (18.29)	.089 (2.26)
21	1	.708 (17.98)	.271 (6.88)	.870 (22.10)	.089 (2.26)
	2	.701 (17.81)	.252 (6.40)	.870 (22.10)	.089 (2.26)
	3	-	-	.870 (22.10)	.089 (2.26)
25	1	.808 (20.52)	.271 (6.88)	.970 (24.64)	.089 (2.26)
	2	.801 (20.34)	.252 (6.40)	.970 (24.64)	.089 (2.26)
	3	-	-	.970 (24.64)	.089 (2.26)
31	1	.958 (24.33)	.271 (6.88)	1.120 (28.45)	.089 (2.26)
	2	.951 (24.16)	.252 (6.40)	1.120 (28.45)	.089 (2.26)
	3	-	-	1.120 (28.45)	.089 (2.26)
37	1	1.108 (28.14)	.271 (6.88)	1.270 (32.26)	.089 (2.26)
	2	1.101 (27.97)	.252 (6.40)	1.270 (32.26)	.089 (2.26)
	3	-	-	1.270 (32.26)	.089 (2.26)
51	1	1.058 (26.87)	.315 (8.00)	1.220 (30.99)	.089 (2.26)
	2	1.051 (26.70)	.295 (7.49)	1.220 (30.99)	.089 (2.26)
	3	-	-	1.220 (30.99)	.089 (2.26)

Dimensions are shown in Inches (mm) unless otherwise indicated.

SHELL SIZE 100

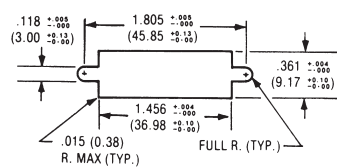


FIGURE 5
FRONT MOUNTING

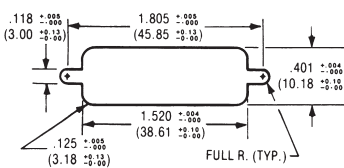
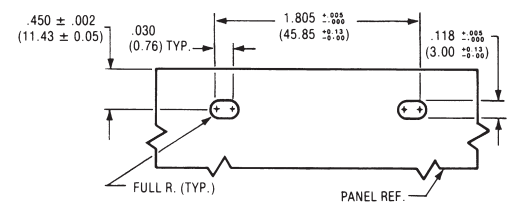


FIGURE 6
REAR MOUNTING



EDGEBOARD MOUNTING

FOR 100 SHELL SIZE

NOTES:

1. Front mounting (Figure 5) and rear mounting (Figure 6) accommodates #4-40 screws.
2. Front mounting is preferred. However, when rear mounting is necessary, use Figure 6 dimensions.

HOW TO ORDER

HOW TO SELECT CONNECTOR PART

EXAMPLE:

M83513/

Same Number
for Plug or
Receptacles

25-A01

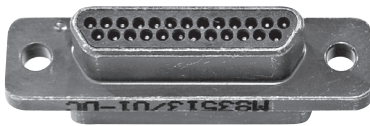
Leads: Example
.109 Straight
Printed Circuit
Tails

C = Cadmium
**N = Electroless
Nickel**

□

N = No Jackpost
**P = Jackpost
Installed**

PLUGS

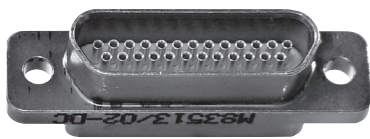


Example: M83513/01-

M83513/	PRE-WIRED LEADS											
NUMBER OF CIRCUITS	STANDARD 26 AWG STRANDED TFE M22759/11						HIGH PERFORMANCE AEROSPACE 26 AWG STRANDED ETFE M22759/33 (ELECTROLESS NICKEL PLATED ONLY)					
	WHITE			COLOR CODED			WHITE			COLOR CODED		
	18"	36"	72"	18"	36"	72"	18"	36"	72"	18"	36"	72"
9	03-A01*	03-A02*	03-A13*	03-A03*	03-A04*	03-A14*	03-A09N	03-A10N	03-A15N	03-A11N	03-A12N	03-A16N
15	03-B01*	03-B02*	03-B13*	03-B03*	03-B04*	03-B14*	03-B09N	03-B10N	03-B15N	03-B11N	03-B12N	03-B16N
21	03-C01*	03-C02*	03-C13*	03-C03*	03-C04*	03-C14*	03-C09N	03-C10N	03-C15N	03-C11N	03-C12N	03-C16N
25	03-D01*	03-D02*	03-D13*	03-D03*	03-D04*	03-D14*	03-D09N	03-D10N	03-D15N	03-D11N	03-D12N	03-D16N
31	03-E01*	03-E02*	03-E13*	03-E03*	03-E04*	03-E14*	03-E09N	03-E10N	03-E15N	03-E11N	03-E12N	03-E16N
37	03-F01*	03-F02*	03-F13*	03-F03*	03-F04*	03-F14*	03-F09N	03-F10N	03-F15N	03-F11N	03-F12N	03-F16N
51	03-G01*	03-G02*	03-G13*	03-G03*	03-G04*	03-G14*	03-G09N	03-G10N	03-G15N	03-G11N	03-G12N	03-G16N
100	03-H01*	03-H02*	03-H13*	03-H03*	03-H04*	03-H14*	03-H09N	03-H10N	03-H15N	03-H11N	03-H12N	03-H16N

Bold part numbers are in stock; choose for fast delivery.

RECEPTACLES



Example: M83513/02-

M83513/	PRE-WIRED LEADS											
NUMBER OF CIRCUITS	STANDARD 26 AWG STRANDED TFE M22759/11						HIGH PERFORMANCE AEROSPACE 26 AWG STRANDED ETFE M22759/33 (ELECTROLESS NICKEL PLATED ONLY)					
	WHITE			COLOR CODED			WHITE			COLOR CODED		
	18"	36"	72"	18"	36"	72"	18"	36"	72"	18"	36"	72"
9	04-A01*	04-A02*	04-A13*	04-A03*	04-A04*	04-A14*	04-A09N	04-A10N	04-A15N	04-A11N	04-A12N	04-A16N
15	04-B01*	04-B02*	04-B13*	04-B03*	04-B04*	04-B14*	04-B09N	04-B10N	04-B15N	04-B11N	04-B12N	04-B16N
21	04-C01*	04-C02*	04-C13*	04-C03*	04-C04*	04-C14*	04-C09N	04-C10N	04-C15N	04-C11N	04-C12N	04-C16N
25	04-D01*	04-D02*	04-D13*	04-D03*	04-D04*	04-D14*	04-D09N	04-D10N	04-D15N	04-D11N	04-D12N	04-D16N
31	04-E01*	04-E02*	04-E13*	04-E03*	04-E04*	04-E14*	04-E09N	04-E10N	04-E15N	04-E11N	04-E12N	04-E16N
37	04-F01*	04-F02*	04-F13*	04-F03*	04-F04*	04-F14*	04-F09N	04-F10N	04-F15N	04-F11N	04-F12N	04-F16N
51	04-G01*	04-G02*	04-G13*	04-G03*	04-G04*	04-G14*	04-G09N	04-G10N	04-G15N	04-G11N	04-G12N	04-G16N
100	04-H01*	04-H02*	04-H13*	04-H03*	04-H04*	04-H14*	04-H09N	04-H10N	04-H15N	04-H11N	04-H12N	04-H16N

Bold part numbers are in stock; choose for fast delivery.

HOW TO SELECT HARDWARE PART #

HARDWARE

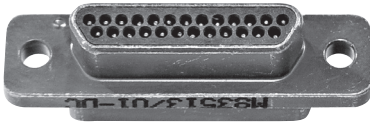
EXAMPLE:

M83513/05- 05

Low Profile Slotted
Jackscrew with a
Connector Size of 9-51

M83513/05-	SLOTTED JACKSCREW		ALLEN HEAD JACKSCREW		JACKPOST
	CONNECTOR SIZE	LOW PROFILE	HIGH PROFILE	LOW PROFILE	
9-51	05	06	02	03	07
100	15	16	12	13	17

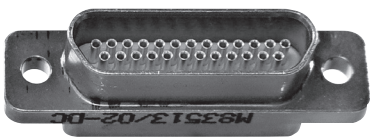
PLUGS



Example: M83513/01-

M83513/ NUMBER OF CIRCUITS	PRE-WIRED LEADS				SOLDER	STRAIGHT PRINTED CIRCUIT TAILS			RIGHT ANGLE PRINTED CIRCUIT TAILS					
	25 AWG SOLID 1/2" UNINSULATED"		25 AWG SOLID 1" UNINSULATED"			LENGTH IN INCHES			CONDENSED FOOTPRINT LENGTH IN INCHES			WIDE FOOTPRINT LENGTH IN INCHES		
	TINNED LEADS	GOLD LEADS	TINNED LEADS	GOLD LEADS		0.109 (2.77)	0.140 (3.56)	0.172 (4.37)	0.109 (2.77)	0.140 (3.56)	0.172 (4.37)	0.109 (2.77)	0.140 (3.56)	0.172 (4.37)
9	03-A07*	03-A05*	03-A08*	03-A06*	01-A*	22-A01†	22-A02†	22-A03†	10-A01†	10-A02†	10-A03†	16-A01†	16-A02†	16-A03†
15	03-B07*	03-B05*	03-B08*	03-B06*	01-B*	22-B01†	22-B02†	22-B03†	10-B01†	10-B02†	10-B03†	16-B01†	16-B02†	16-B03†
21	03-C07*	03-C05*	03-C08*	03-C06*	01-C*	22-C01†	22-C02†	22-C03†	10-C01†	10-C02†	10-C03†	16-C01†	16-C02†	16-C03†
25	03-D07*	03-D05*	03-D08*	03-D06*	01-D*	22-D01†	22-D02†	22-D03†	10-D01†	10-D02†	10-D03†	16-D01†	16-D02†	16-D03†
31	03-E07*	03-E05*	03-E08*	03-E06*	01-E*	22-E01†	22-E02†	22-E03†	10-E01†	10-E02†	10-E03†	16-E01†	16-E02†	16-E03†
37	03-F07*	03-F05*	03-F08*	03-F06*	01-F*	22-F01†	22-F02†	22-F03†	10-F01†	10-F02†	10-F03†	16-F01†	16-F02†	16-F03†
51	03-G07*	03-G05*	03-G08*	03-G06*	01-G*	23-G01†	23-G02†	23-G03†	11-G01†	11-G02†	11-G03†	17-G01†	17-G02†	17-G03†
100	03-H07*	03-H05*	03-H08*	03-H06*	01-H*	24-H01†	24-H02†	24-H03†	12-H01†	12-H02†	12-H03†	18-H01†	18-H02†	18-H03†

RECEPTACLES



Example: M83513/02-

M83513/ NUMBER OF CIRCUITS	PRE-WIRED LEADS				SOLDER	STRAIGHT PRINTED CIRCUIT TAILS			RIGHT ANGLE PRINTED CIRCUIT TAILS					
	25- AWG SOLID 1/2" UNINSULATED"		25- AWG SOLID 1" UNINSULATED"			LENGTH IN INCHES			CONDENSED FOOTPRINT LENGTH IN INCHES			WIDE FOOTPRINT LENGTH IN INCHES		
	TINNED LEADS	GOLD LEADS	TINNED LEADS	GOLD LEADS		0.109 (2.77)	0.14-0 (3.56)	0.172 (4.37)	0.109 (2.77)	0.14-0 (3.56)	0.172 (4.37)	0.109 (2.77)	0.14-0 (3.56)	0.172 (4.37)
9	04-A07*	04-A05*	04-A08*	04-A06*	02-A*	25-A01†	25-A02†	25-A03†	13-A01†	13-A02†	13-A03†	19-A01†	19-A02†	19-A03†
15-	04-B07*	04-B05*	04-B08*	04-B06*	02-B*	25-B01†	25-B02†	25-B03†	13-B01†	13-B02†	13-B03†	19-B01†	19-B02†	19-B03†
21-	04-C07*	04-C05*	04-C08*	04-C06*	02-C*	25-C01†	25-C02†	25-C03†	13-C01†	13-C02†	13-C03†	19-C01†	19-C02†	19-C03†
25-	04-D07*	04-D05*	04-D08*	04-D06*	02-D*	25-D01†	25-D02†	25-D03†	13-D01†	13-D02†	13-D03†	19-D01†	19-D02†	19-D03†
31	04-E07*	04-E05*	04-E08*	04-E06*	02-E*	25-E01†	25-E02†	25-E03†	13-E01†	13-E02†	13-E03†	19-E01†	19-E02†	19-E03†
37	04-F07*	04-F05*	04-F08*	04-F06*	02-F*	25-F01†	25-F02†	25-F03†	13-F01†	13-F02†	13-F03†	19-F01†	19-F02†	19-F03†
51	04-G07*	04-G05*	04-G08*	04-G06*	02-G*	26-G01†	26-G02†	26-G03†	14-G01†	14-G02†	14-G03†	20-G01†	20-G02†	20-G03†
100	04-H07*	04-H05*	04-H08*	04-H06*	02-H*	27-H01†	27-H02†	27-H03†	15-H01†	15-H02†	15-H03†	21-H01†	21-H02†	21-H03†

* C = Cadmium
N = Electroless Nickel
† N = No Jackpost
P = Jackpost Installed