

CINCH MIL/AERO  
**Circulars**



## MD Series



**cinch**  
CONNECTIVITY SOLUTIONS  
a bel group

[belfuse.com/cinch](https://belfuse.com/cinch)

# About Bel

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Bel is a publicly traded company that has been operated by the same family for over 65 years. Our history of organic growth and acquisitions have broadened our product portfolio. This has established Bel as a world leader with a diverse offering of power, protection and interconnect products. We design and manufacture these products which are primarily used in the networking, telecommunications, computing, military, aerospace, transportation and broadcasting industries. Bel's portfolio of products also finds application in the automotive, medical and consumer electronics markets.

# About Cinch Mil/Aero Circulars

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Cinch Mil/Aero Circulars connectors and custom connectors available with hermetic sealing in any circular connector configuration. These glass-sealed packages are used mostly in critical components and assemblies for aerospace use, where leakage must be prevented even under extreme changes in temperature, pressure, and humidity.

Cinch's MD Connectors deliver highly reliable performance equal to MIL-DTL-38999. Key Markets are military, aerospace, and down-hole applications. The MD is offered at a reduced size and weight.

# Table of Contents

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## MD801 Series

Introduction	3
Insert Arrangement	4
Shell Keying	4

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## Dual-Start ACME Thread with Crimp Contacts

Ordering Information	5
Plugs	6
In-Line Receptacles	7
Square Flange Receptacles	8
Jam Nut Receptacles	9

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## Dual-Start ACME Thread with PC Tail or Solder Cups

Insert Arrangement	10
Shell Keying	10
Ordering Information	11
Receptacles with PC Tail	12

## Introduction



The MD 801 Series connector features a Dual-Start ACME thread for protection against cross mating and vibration. Designed for military and aerospace, the shells can be ordered in aluminum or stainless steel, with several options for finishes. The connectors are available as plugs or receptacles with standard crimp or PC Tail contacts, for board mount applications. Available in shell sizes 5 through 13 with multiple insert arrangement configurations.

- Miniature 38999 Plug with Solder or Crimp Contacts
- Miniature 38999 Jam Nut or Box Mount Receptacle with Solder, Crimp or PC Tail Contacts
- Standard or Specialty Platings Available

## Features

- Full Performance in Extreme Environments
- Available in Crimp, Solder and PC Tail Terminations
- Shell Styles Include Jam Nut Receptacle, Square Flange Receptacle and In-Line Plugs
- Available in 6, 7, 8, 9, 10, 13 Shell Sizes
- Contact Arrangements Range from 1 to 130 Contacts

MD Connectors, Tools and Sealing Plugs						MD Crimp Tools	
Contact Size	Wire Size Range	Pin Contacts	Sockets	Sealing Plugs	Insertion Removal Tool	Crimp Tool Mil Spec	Positioner Mil Spec or Daniels
23	#22-#28	806-0060-210	857-0060-210	None	None	M22520/1-01	K1461
20	#20-#24	M39029/58-363	M39029/57-357			M22520/2-01	M22520/1-04
16	#16-#20	M39029/58-364	M39029/57-358			M22520/1-01	M22520/1-04
12	#12-#14	M39029/58-365	M39029/57-359			M22520/1-01	M22520/1-04

## Specifications

<b>Current Rating</b>	#23-5 A
<b>Dielectric Withstanding Voltage</b>	#23-750 VAC
<b>Insulation Resistance</b>	5000 MΩ minimum
<b>Operating Temperature</b>	-65° C. to +175° C
<b>Shock</b>	300 g
<b>Vibration</b>	37 g
<b>Shielding Effectiveness</b>	55dB min from 100MHz – 1000MHz
<b>Durability</b>	2000 mating cycles
<b>IP Rating</b>	IP67 Mated

## Insert Arrangement

Figure 1



5-3 Arrangement  
3 Contacts  
#23 Size Contacts



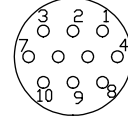
6-4 Arrangement  
4 Contacts  
#23 Size Contacts



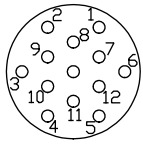
6-6 Arrangement  
6 Contacts  
#23 Size Contacts



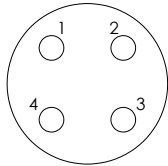
6-7 Arrangement  
7 Contacts  
#23 Size Contacts



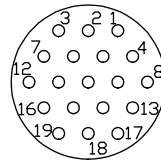
7-10 Arrangement  
10 Contacts  
#23 Size Contacts



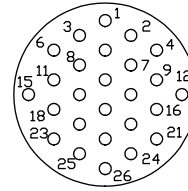
8-13 Arrangement  
13 Contacts  
#23 Size Contacts



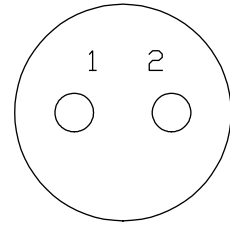
9-4 Arrangement  
4 Contacts  
#16 Size Contacts



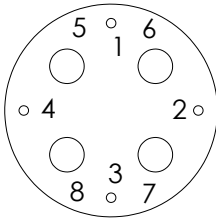
9-19 Arrangement  
19 Contacts  
#23 Size Contacts



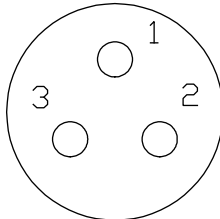
10-26 Arrangement  
26 Contacts  
#23 Size Contacts



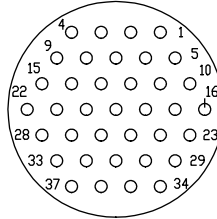
13-2 Arrangement  
2 Contacts  
#12 Size Contacts



13-205 Arrangement  
4-#12 Contacts  
4-#23 contacts



13-3 Arrangement  
3 Contacts  
#12 Size Contacts



13-37 Arrangement  
37 Contacts  
#23 Size Contacts

## Shell Keying

Table 2 - Plug Shell Keying

Position	A°	B°	C°	D°	E°	F°
A	150°	75°	95°	140°	75°	95°
B	210°	210°	230°	275°	275°	210°

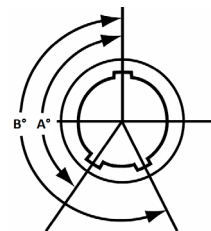
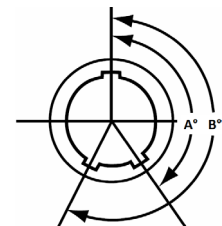
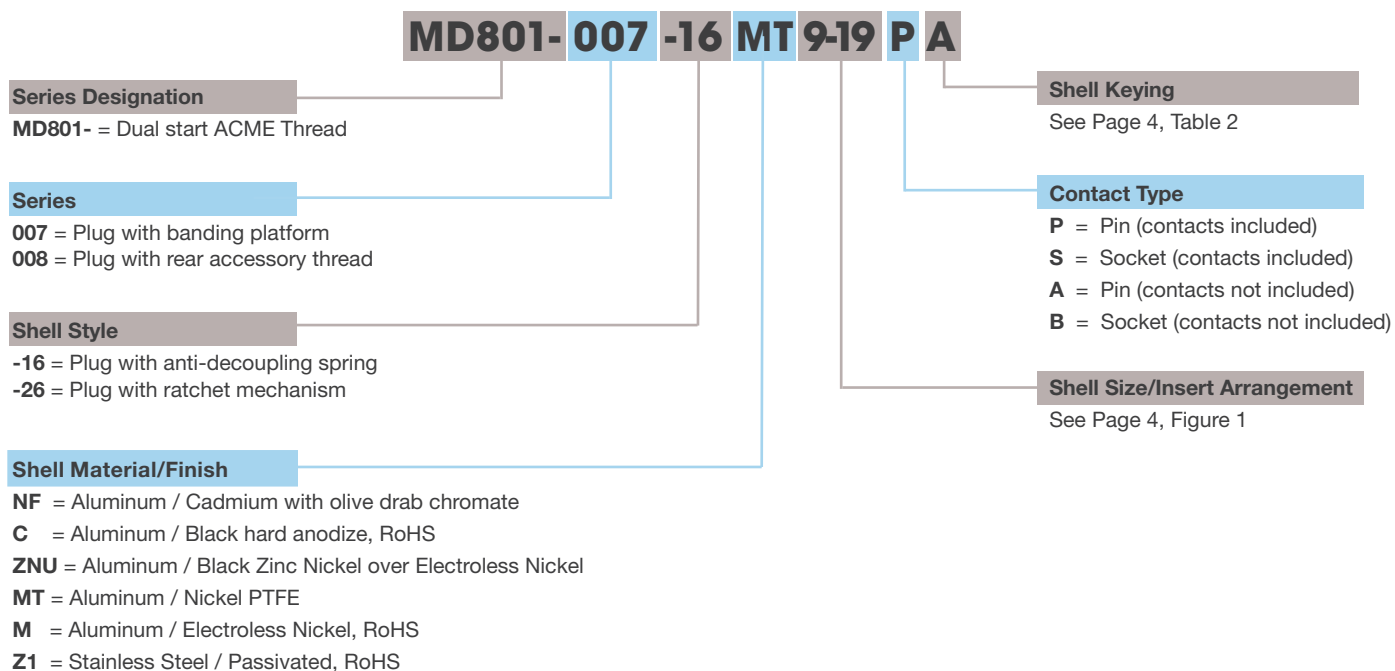


Table 3 - Receptacle Shell Keying

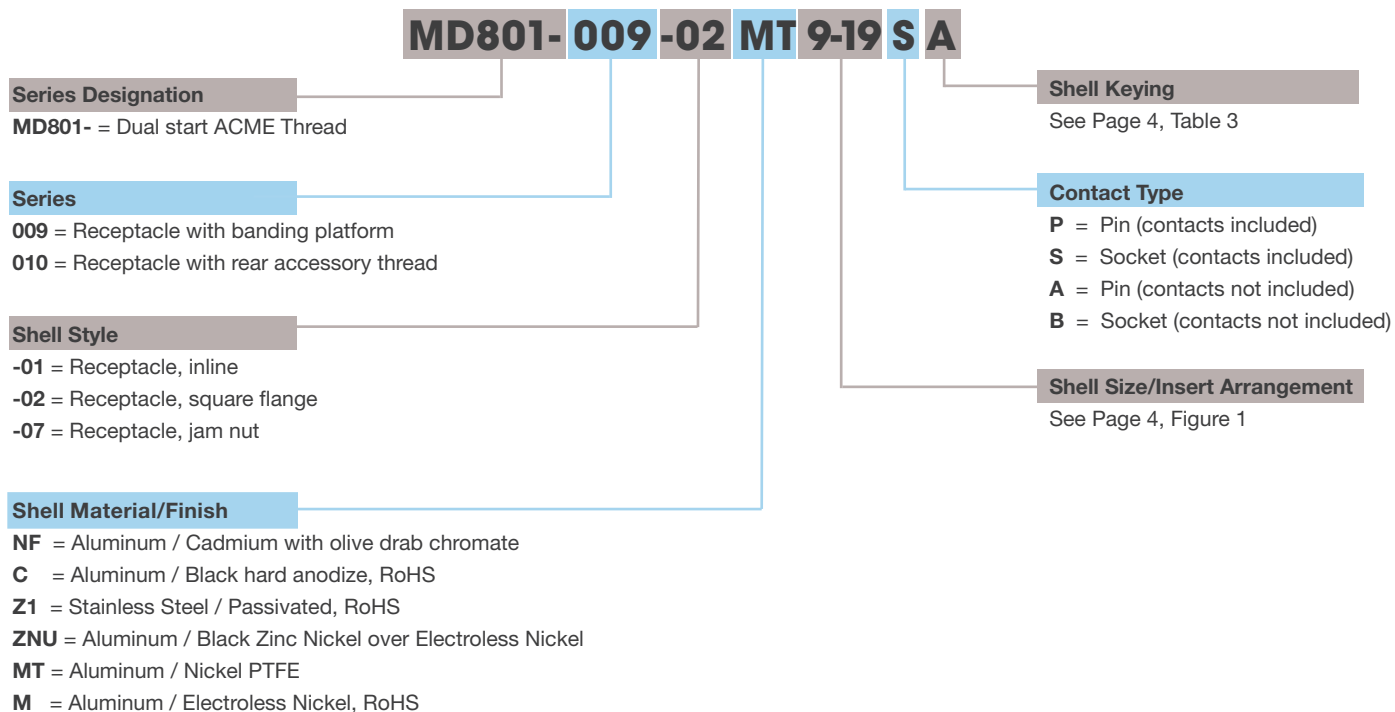
Position	A°	B°	C°	D°	E°	F°
A	150°	75°	95°	140°	75°	95°
B	210°	210°	230°	275°	275°	210°



## Plug Ordering Information



## Receptacle Ordering Information



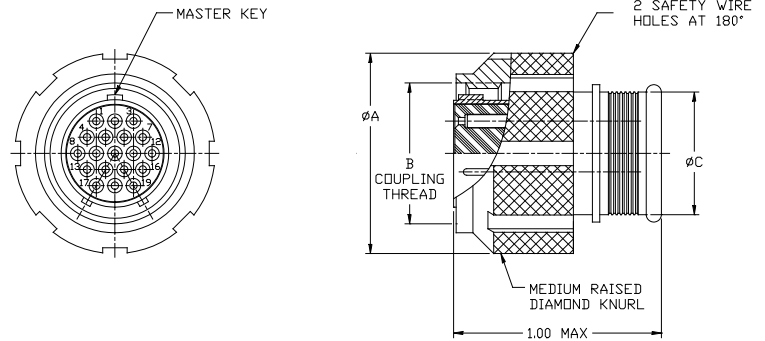
# Dual-Start ACME Thread with Crimp Contacts

## Plugs



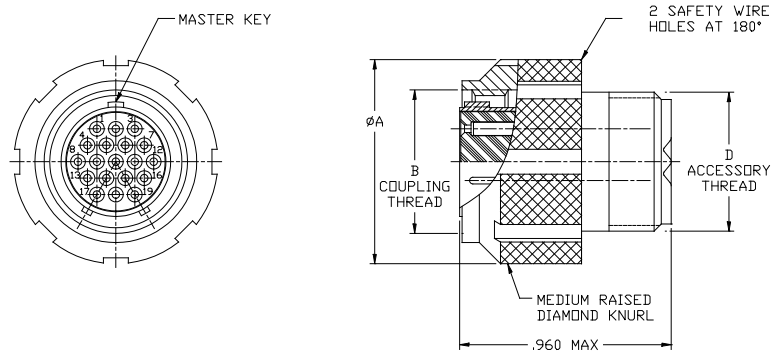
### MD801-007, Plug with Banding Platform

MD801-007-XXXXX-XXX



### MD801-008, Plug with Rear Accessory Thread

MD801-007-XXXXX-XXX



### Dimensions

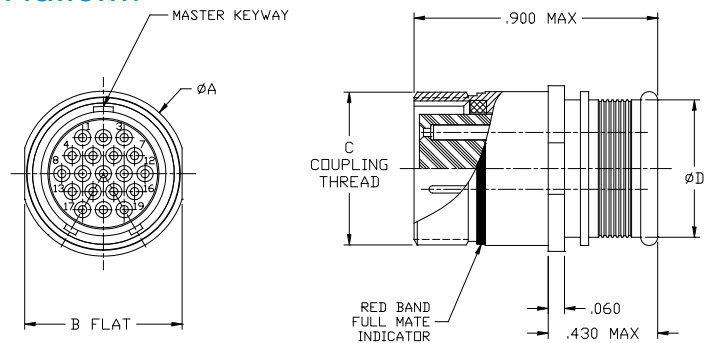
Shell Size	ØA		ØB	ØC	D
	Style 16	Style 26	Thread		Thread
5	0.54 (13.72)	0.65 (16.51)	0.3125-0.05P-0.1L-DS-2B	0.245 (6.22)	0.2500-32 UNEF-2A
6	0.60 (15.24)	0.69 (17.53)	0.3750-0.05P-0.1L-DS-2B	0.290 (7.37)	0.3125-32 UNEF-2A
7	0.69 (17.53)	0.79 (20.07)	0.4375-0.05P-0.1L-DS-2B	0.390 (9.91)	0.4375-28 UNEF-2A
8	0.75 (19.05)	0.83 (21.08)	0.5000-0.05P-0.1L-DS-2B	0.445 (11.30)	0.5000-28 UNEF-2A
9	0.81 (20.57)	0.92 (23.37)	0.5625-0.05P-0.1L-DS-2B	0.500 (12.70)	0.5625-24 UNEF-2A
10	0.88 (22.35)	0.98 (24.89)	0.6250-0.05P-0.1L-DS-2B	0.560 (14.22)	0.6250-24 UNEF-2A
13	1.05 (26.67)	1.10 (27.94)	0.81250-.1P-0.2L-DS-2B	0.650 (16.51)	0.6875-24 UNEF-2A

## In-Line Receptacles



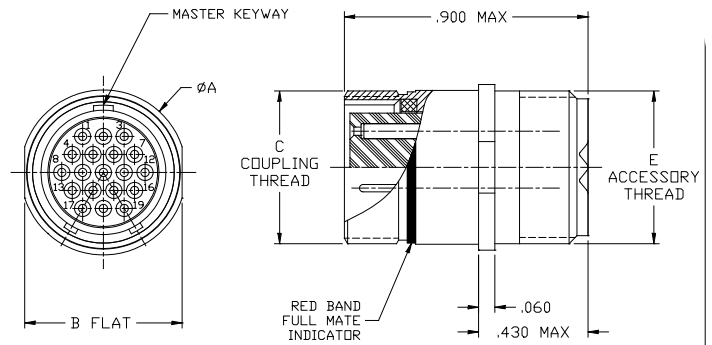
### MD801-009, In-Line Receptacle with Banding Platform

MD801-009-01XXX-XXX



### MD801-010, In-Line Receptacle with Rear Accessory Thread

MD801-010-01XXX-XXX



### Dimensions

Shell Size	ØA	B Flat	Thread	ØD	E Thread
5	0.355 (9.02)	0.325 (8.25)	0.3125-0.05P-0.1L-DS-2B	0.245 (6.22)	0.2500-32 UNEF-2A
6	0.415 (10.54)	0.385 (9.78)	0.3750-0.05P-0.1L-DS-2B	0.290 (7.37)	0.3125-32 UNEF-2A
7	0.480 (12.19)	0.445 (11.30)	0.4375-0.05P-0.1L-DS-2B	0.390 (9.91)	0.4375-28 UNEF-2A
8	0.540 (13.72)	0.510 (12.95)	0.5000-0.05P-0.1L-DS-2B	0.445 (11.30)	0.5000-28 UNEF-2A
9	0.605 (15.37)	0.575 (14.60)	0.5625-0.05P-0.1L-DS-2B	0.500 (12.70)	0.5625-24 UNEF-2A
10	0.665 (16.89)	0.635 (16.13)	0.6250-0.05P-0.1L-DS-2B	0.560 (14.22)	0.6250-24 UNEF-2A
13	0.855 (21.72)	0.825 (20.96)	0.81250-.1P-0.2L-DS-2B	0.650 (16.51)	0.6875-24 UNEF-2A

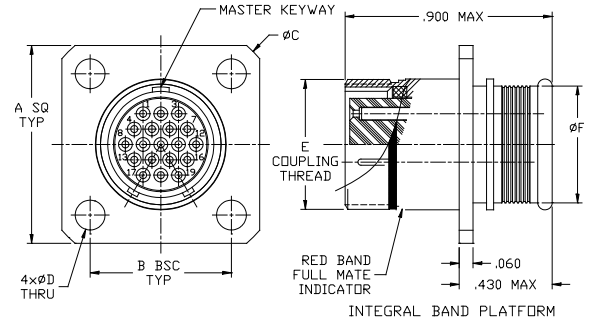
# Dual-Start ACME Thread with Crimp Contacts

## Square Flange Receptacles



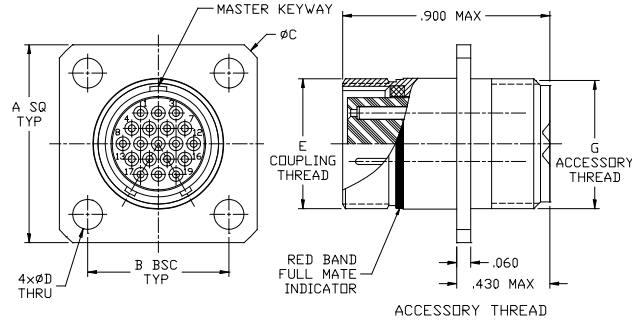
### MD801-009, Square Flange Receptacle with Banding Platform

MD801-009-02XXX-XXX



### MD801-010, Square Flange Receptacle with Rear Accessory Thread

MD801-010-02XXX-XXX

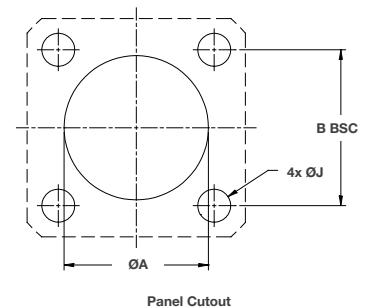


### Dimensions

Shell Size	A	B	ØC	ØD	ØE	E	ØF	G
	SQ	BSC						
5	0.530 (13.46)	0.363 (9.22)	0.680 (17.27)	0.096 (2.44)	0.091 (2.31)	0.3125-0.05P-0.1L-DS-2A	0.245 (6.22)	0.2500-32 UNEF-2A
6	0.590 (14.99)	0.423 (10.74)	0.750 (19.05)	0.096 (2.44)	0.091 (2.31)	0.3750-0.05P-0.1L-DS-2A	0.290 (7.37)	0.3125-32 UNEF-2A
7	0.6550 (16.51)	0.483 (12.27)	0.850 (21.59)	0.096 (2.44)	0.091 (2.31)	0.4375-0.05P-0.1L-DS-2A	0.390 (9.91)	0.4375-28 UNEF-2A
8	0.712 (18.08)	0.545 (13.84)	0.938 (23.83)	0.096 (2.44)	0.091 (2.31)	0.5000-0.05P-0.1L-DS-2A	0.445 (11.30)	0.5000-28 UNEF-2A
9	0.850 (21.59)	0.607 (15.42)	1.125 (28.58)	0.130 (3.30)	0.126 (3.20)	0.525-0.05P-0.1L-DS-2S	0.500 (12.70)	0.5625-24 UNEF-2A
10	0.890 (22.61)	0.670 (17.02)	1.188 (30.18)	0.130 (3.30)	0.126 (3.20)	0.625-0.05P-0.1L-DS-2S	0.560 (14.22)	0.625-24 UNEF-2A
13	1.030 (26.16)	0.812 (20.62)	1.375 (34.92)	0.130 (3.30)	0.126 (3.20)	0.8125-0.1P-0.2L-DS-2A	0.650 (16.51)	0.6875-24 UNEF-2A

Table 4 - Panel Cutout

Shell Size	ØA	B	ØC	
	±0.005 (0.13)	BSC		
5	0.328 (8.33)	0.328 (8.33)	0.096 (2.44)	0.091 (2.31)
6	0.390 (8.33)	0.328 (8.33)	0.096 (2.44)	0.091 (2.31)
7	0.453 (11.51)	0.328 (8.33)	0.096 (2.44)	0.091 (2.31)
8	0.515 (13.08)	0.328 (8.33)	0.096 (2.44)	0.091 (2.31)
9	0.57 (14.68)	0.328 (8.33)	0.130 (3.30)	0.126 (3.20)
10	0.640 (16.26)	0.328 (8.33)	0.130 (3.30)	0.126 (3.20)
13	0.828 (21.03)	0.328 (8.33)	0.130 (3.30)	0.126 (3.20)

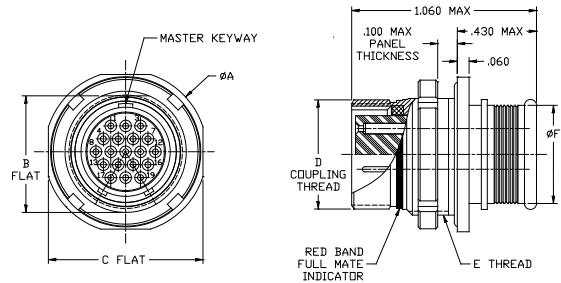




## Jam Nut Receptacles

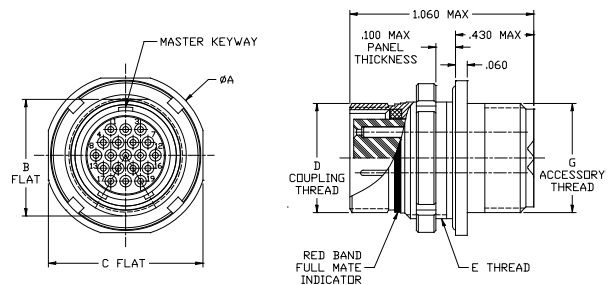
### MD801-009, Jam Nut Receptacle with Banding Platform

MD801-009-07XXX-XXX



### MD801-010, Jam Nut Receptacle with Rear Accessory Thread

MD801-010-07XXX-XXX

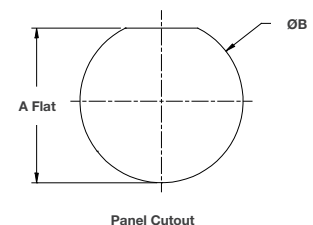


### Dimensions

Shell Size	ØA	B Flat	C Flat	D Thread	E Thread	ØF	G Thread
5	0.54 (13.72)	0.65 (16.51)	0.545 (13.84)	0.3125-0.05P-0.1L-DS-2B	0.375-28 UNEF-2A	0.245 (6.22)	0.250-32 UNEF-2A
6	0.635 (16.13)	0.69 (17.53)	0.595 (15.11)	0.3750-0.05P-0.1L-DS-2B	0.4375-28 UNEF-2A	0.290 (7.37)	0.3125-32 UNEF-2A
7	0.755 (19.18)	0.79 (20.07)	0.73 (18.36)	0.4375-0.05P-0.1L-DS-2B	0.5625-32 UNEF-2A	0.390 (9.91)	0.4375-28 UNEF-2A
8	0.755 (19.18)	0.83 (21.08)	0.73 (18.36)	0.5000-0.05P-0.1L-DS-2B	0.5625-32 UNEF-2A	0.445 (11.30)	0.5000-28 UNEF-2A
9	0.830 (21.08)	0.92 (23.37)	0.790 (20.07)	0.5625-0.05P-0.1L-DS-2B	0.625-28 UNEF-2A	0.500 (12.70)	0.5625-24 UNEF-2A
10	0.890 (22.61)	0.98 (24.89)	0.855 (21.72)	0.6250-0.05P-0.1L-DS-2B	0.6875-28 UNEF-2A	0.560 (14.22)	0.6250-24 UNEF-2A
13	1.078 (27.38)	1.10 (27.94)	1.044 (26.52)	0.81250-.1P-0.2L-DS-2B	0.875-28 UNEF-2A	0.650 (16.51)	0.6875-24 UNEF-2A

Table 5 - Panel Cutout

Shell Size	A Flat ±0.002 (0.05)	ØC ±0.002 (0.13) ±0.000 (0.00)
5	0.356 (9.04)	0.380 (9.65)
6	0.416 (10.57)	0.443 (11.25)
7	0.542 (13.77)	0.567 (14.40)
8	0.542 (13.77)	0.567 (14.40)
9	0.602 (15.29)	0.630 (16.00)
10	0.664 (16.87)	0.693 (17.60)
13	0.851 (21.62)	0.880 (22.35)



# Dual-Start ACME Thread with PC Tails

## Receptacle Ordering Information

**MD801- 011 -02 MT 9-19 S A**

### Series Designation

**MD801-** = Dual start ACME Thread

### Series

**011** = Receptacle for PC tail or solder cup contacts

**033** = Receptacle for PC tail or solder cup contacts, water immersion

### Shell Style

**-02** = Receptacle, square flange

**-07** = Receptacle, jam nut

**-12** = Receptacle, square flange, rear panel mount with non-locking clinch nuts

**-22** = Receptacle, square flange, rear panel mount with locking clinch nuts

### Shell Material/Finish

**NF** = Aluminum / Cadmium with olive drab chromate

**C** = Aluminum / Black hard anodize, RoHS

**Z1** = Stainless Steel / Passivated, RoHS

**ZNU** = Aluminum / Black Zinc Nickel over Electroless Nickel

**MT** = Aluminum / Nickel PTFE

**M** = Aluminum / Electroless Nickel, RoHS

### Shell Keying

See Table 3 (Receptacle)

### Contact Type

**P** = Pin, PC Tail

**S** = Socket, PC Tail

**E** = Pin, Solder Cup

**F** = Socket, Solder Cup

### Shell Size/Insert Arrangement

See Page 10, Figure 1

## Dimensions

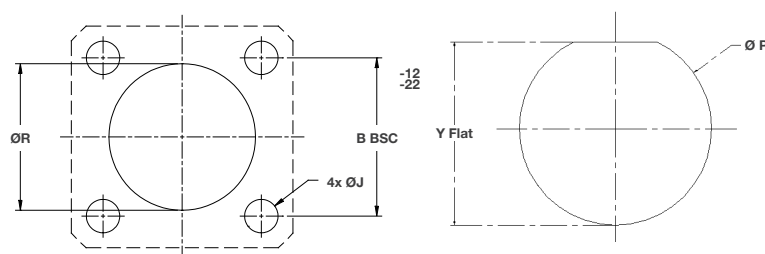
Shell Size	A Sq	B Bsc	ØC	ØD	E Flat	F Flat	J Holes	K Thread	L Thread	ØM	ØT
5	0.530 (13.46)	0.363 (9.22)	0.680 (17.27)	0.575 (14.60)	0.545 (13.84)	0.350 (8.89)		0.3125-0.05P-0.1L2A	0.375-28 UNEF-2A	0.244 (6.20)	0.175 (4.44)
6	0.590 (14.99)	0.423 (1.74)	0.750 (19.05)	0.635 (16.13)	0.595 (15.11)	0.410 (1.41)	0.096 (2.44) 0.91 (2.31)	0.375-0.05P-0.1L2A	0.4375-28 UNEF-2A	0.330 (8.38)	0.238 (6.05)
7	0.650 (16.51)	0.483 (12.27)	0.850 (21.59)	0.755 (19.18)	0.723 (18.36)	0.536 (13.61)		0.4375-0.05P-0.1L2A	0.5625-32 UNEF-2A	0.432 (10.97)	0.327 (8.31)
8	0.712 (18.08)	0.545 (13.84)	0.938 (23.83)	0.755 (19.18)	0.723 (18.36)	0.536 (13.61)		0.5000-0.05P-0.1L2A	0.5625-32 UNEF-2A	0.493 (12.52)	0.388 (9.86)
9	0.850 (21.59)	0.607 (15.42)	1.125 (28.58)	0.830 (22.61)	0.790 (2.07)	0.506 (15.14)		0.5625-0.05p-0.1L2A	0.6250-28 UNEF-2A	0.551 (14.00)	0.446 (11.33)
10	0.890 (22.61)	0.607 (15.42)	1.188 (3.18)	0.890 (22.61)	0.855 (21.72)	0.658 (16.71)	0.130 (3.30) 0.126 (3.11)	0.6250-0.05p-0.1L2A	0.6875-28 UNEF-2A	0.620 (15.75)	0.516 (13.11)
13	1.030 (26.16)	0.812 (2.62)	1.375 (34.92)	1.078 (27.38)	1.044 (26.52)	0.845 (21.46)		0.812-1P-0.2L2A	0.8750-28 UNEF-2A	0.703 (17.86)	0.599 (15.21)

## Dimensions (continued)

Shell Size	A Flat ±0.002 (0.05)	ØC ±0.002 (0.13) ±0.000 (0.00)	N Flat ±0.002 (0.05)	Ø P +0.005 (+0.13) -0.000 (-0.00)	Ø R ±0.005 (0.13)	Ø U	V Sq	W Clinch Nuts	X
5	0.356 (9.04)	0.380 (9.65)	0.356 (9.04)	0.380 (9.65)	0.328 (8.33)	0.774 (19.66)	0.623 (15.82)		
6	0.416 (10.57)	0.443 (11.25)	0.416 (10.57)	0.443 (11.25)	0.390 (9.91)	0.860 (21.84)	0.683 (17.35)	2-56	0.030 (0.76)
7	0.542 (13.77)	0.567 (14.40)	0.542 (13.77)	0.567 (14.40)	0.453 (11.51)	0.944 (23.98)	0.743 (18.87)		
8	0.542 (13.77)	0.567 (14.40)	0.542 (13.77)	0.567 (14.40)	0.515 (13.08)	1.032 (26.21)	0.805 (20.45)		
9	0.602 (15.29)	0.630 (16.00)	0.602 (15.29)	0.630 (16.00)	0.578 (14.68)	1.180 (29.97)	0.927 (23.55)		
10	0.664 (16.87)	0.693 (17.60)	0.666 (16.92)	0.693 (17.60)	0.640 (16.26)	1.268 (32.21)	0.990 (25.15)	4-40	0.060 (1.52)
13	0.851 (21.62)	0.880 (22.35)	0.851 (21.62)	0.880 (22.35)	0.828 (21.03)	1.470 (37.34)	1.132 (28.75)		

Table 6 - PC Tail Diameter

Contact Size	ØS
#23	Ø 0.018/0.022
#20	Ø 0.028/0.024
#16	Ø 0.060/0.064
#12	Ø 0.092/0.096



Recommended Panel Cutouts

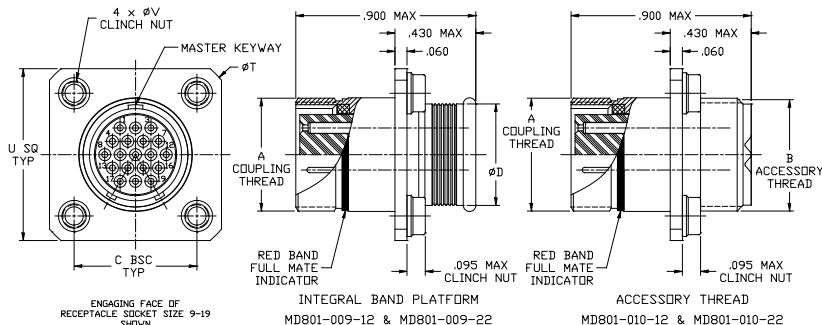
## Receptacles



### MD801-011-02/MD801-033-02 Square Flange Receptacle

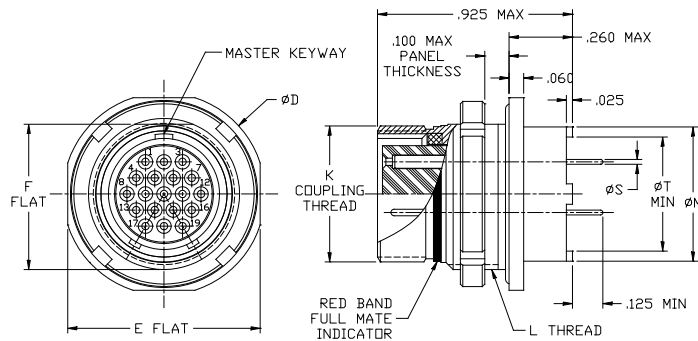
MD801-011-02XXX-XXX

MD801-033-02XXX-XXX



### MD801-011-07/MD801-033-07 Jam Nut Receptacle

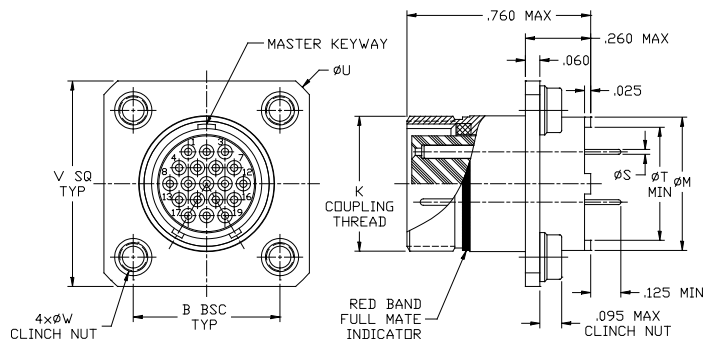
MD801-011-02XXX-XXX



### MD801-011/MD801-033 Square Flange Receptacle

MD801-011-02XXX-12XX

MD801-011-02XXX-22XX

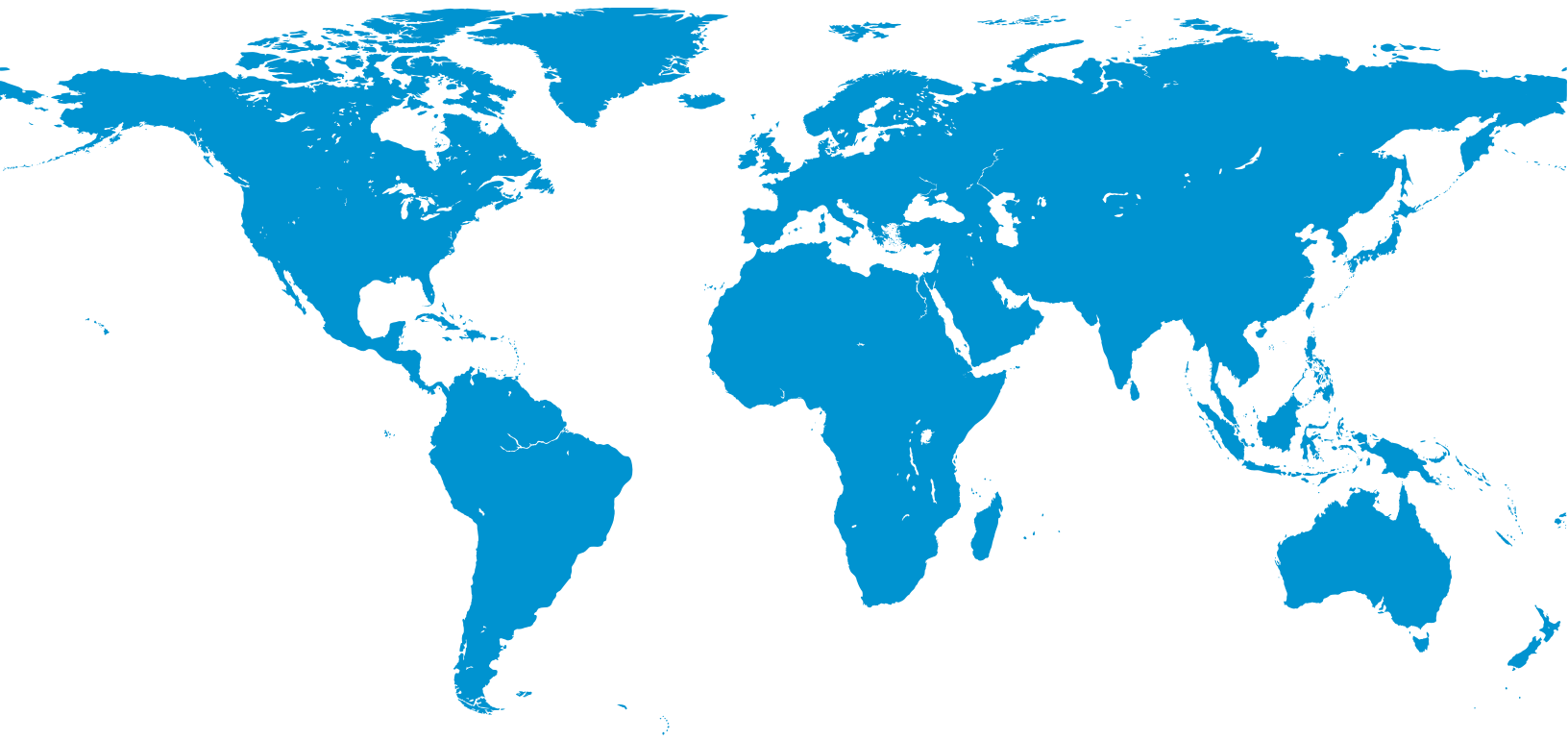




## About Cinch Connectivity Solutions

For over 100 years, Cinch Connectivity Solutions has manufactured high-quality and reliable high-performance connectors and cable assemblies. Cinch is recognized as a world class connectivity supplier of RF, fiber optic, hybrid, microwave components, circular, d-subminiatures, modular rectangular, electronic enclosures and cable assemblies.

Cinch provides innovative solutions to the military, commercial aerospace, networking, telecommunication, test and measurement, oil and gas and other harsh environment industries.



### For more information, please contact us:

North America  
+1 507.833.8822  
ccsorders@us.cinch.com

Asia-Pacific  
+86 21 5442 7668  
ccs.asia.sales@as.cinch.com

Europe, Middle East  
+44 (0) 1245 342060  
CinchConnectivity@eu.cinch.com



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