

# Custom Back Shells

## Custom Back Shell Systems

ITT has designed numerous back shell solutions for micro miniature interconnects for many harsh environment applications. Although ITT does not offer a standard back shell portfolio today, we can design and manufacture a range of back fittings for our MDM connector products depending on the customer requirements. Utilizing one of our partnership relationships, one of our UK based micro product groups of ITT can provide can provide custom designs utilizing proven banded systems in which the braid is captivated over a chimney style outlet. These types of back shell systems are available in

different material finishes and sizes and can be provided with special process termination methods. In addition, ITT has developed a method of riveting the back fitting to the shell within the jacking area. This option guarantees 360 degree shielding effectiveness even when jackscrews or jacking posts are not being used.

Where a conduit system is preferred such as for test box environments in field locations, back fittings and a fully screened weatherproof convoluted trunking can be provided

In addition to the above ITT can provide special back potting style termination systems for environmental protection and strain relief. These types of a back shell style system are typically filled with epoxy or other encapsulating materials to provide a robust and effective back shell system.

## Sealing Gaskets

We have received requests for gasket materials to seal the MDM connectors into various enclosures. We recommend that you consider wider flanged connectors together with a low cost conductive gasket to provide an adequate surface area. This combination will give you IP-66 sealing with good EMC compliance. The following dimensions for gaskets and flange dimensions are regarded as the minimum that you should consider.

Conductive elastomers generally offer a superior shielding performance when compared with alternatives as in table below.

Gasket Type	Neoprene (wire impregnated)	Silicone (wire impregnated)	Silicone (oriented wire)	Neoprene (fabric wrap)	Metallic finger stock	Metallic fibres	Conductive silicone rubber
Shielding performance	S	S	G	G	G	G	G
Temperature range	S	G	G	S	G	G	G
IP sealing	P	P	S	S	P	P	G
Compression force	G	G	G	G	G	S	S
Compression range	S	S	S	G	G	P	S
Surface texture	P	P	G	P	G	P	S
Compression set	S	S	S	S	G	P	G
Re-usability	S	S	S	S	G	P	G

\* Neoprene is a trademark of Dupont P = Poor S = Satisfactory G = Good

Conductive rubber gaskets can be loaded with many different metallic fillers but the choice of material is dependent upon a number of factors such as level of conductivity, shielding effectiveness, galvanic compatibility and cost.

Galvanic Corrosion can occur when two dissimilar metals are in contact with one another in the presence of an electrolyte. The type of gasket material has to be assessed because of the use of metallic fillers. Many applications are dry indoor environments where corrosion is not a major concern. However, for external use, particularly marine, it is recommended that consideration be given to compatibility. The table on the next page is a summary.

Enclosure Material	Silver/Nickel	Silver/Copper	Silver/aluminum	Inert aluminum	Silver/Glass	Silver	Nickel/Graphite	Nickel
aluminum alloys	X	X		▲	X	X		
Magnesium alloys	X	X			X	X		
Stainless steel	▲	▲	▲	▲	▲	▲	▲	▲
Copper alloys	▲	▲	▲	▲	▲	▲	▲	▲
Cadmium plating	X	X			X	X		
Tin plating		X		▲			▲	▲
Nickel plating	▲			▲	▲	▲	▲	▲
Chromium plating	▲	▲	▲	▲	▲	▲	▲	▲
Silver plating	▲	▲	▲	▲	▲	▲	▲	▲
Zinc & galvanise plating	X	X			X	X		
Titanium	▲	▲	▲	▲	▲	▲	▲	▲

▲ = good = Satisfactory X = Not recommended

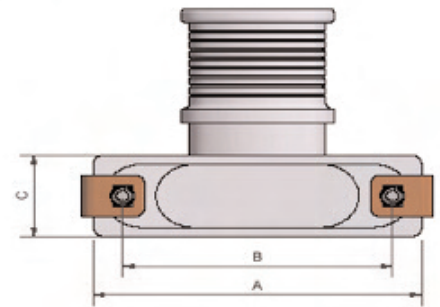
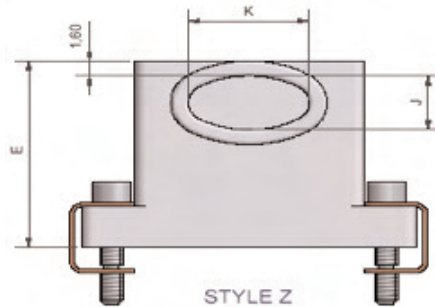
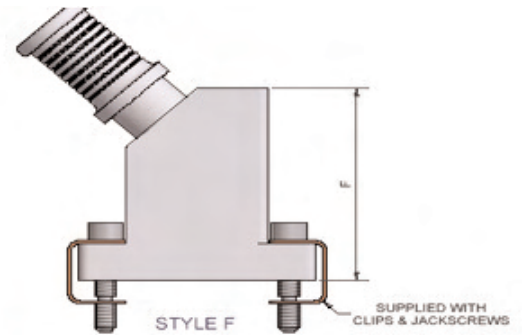
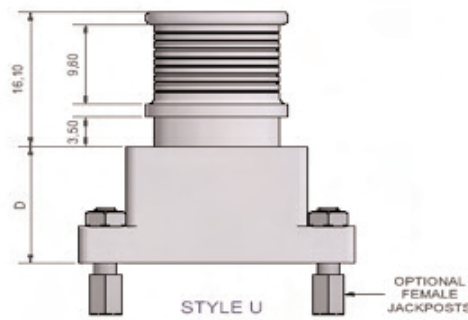
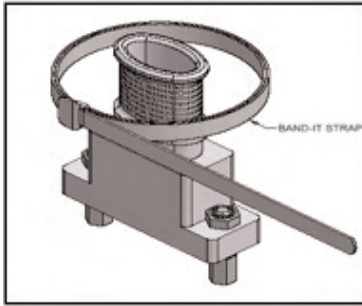


Dimensions shown in inches (mm)  
Specifications and dimensions subject to change

Microminiature

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Micro Metal Backshell for MDM Connectors



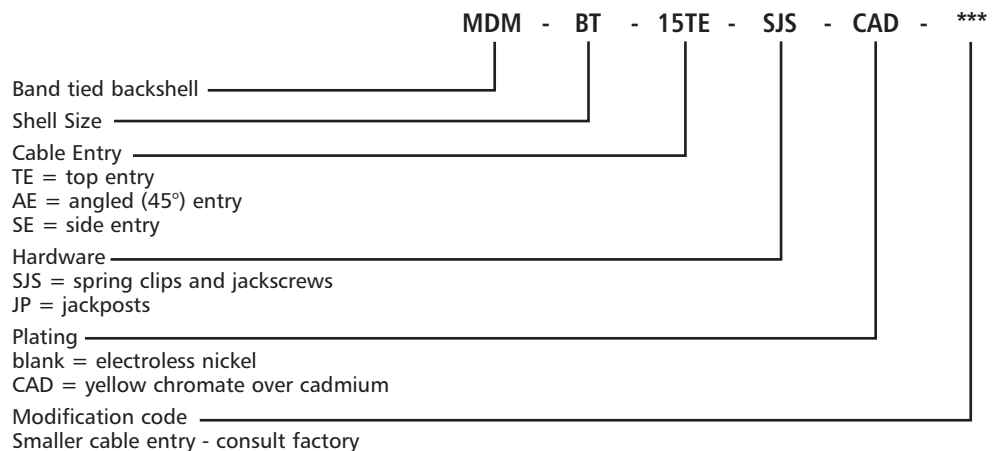
Shielded Metal Backshell

A single piece, machined aluminum shell for ITT Cannon MDM connectors. Cable braid can be fixed to the shell with the band-it strap (supplied with the backshell) to give a shielded termination. Stainless steel mounting hardware, either jackposts or low profile jack screws, comes with the backshell.

Shell Size	Styles TE & SE						Style AE			
	A	B	C	D	E	F	J	K	J	K
9	0.776 (19.7)	0.565 (14.4)	0.354 (9.0)	0.394 (10.0)	0.591 (15.0)	0.827 (21.0)	0.228 (5.8)	0.276 (7.0)	0.189 (4.8)	0.189 (4.8)
15	0.921 (23.4)	0.715 (18.2)	0.354 (9.0)	0.472 (12.0)	0.650 (16.5)	0.906 (23.0)	0.228 (5.8)	0.425 (10.8)	0.189 (4.8)	0.189 (4.8)
21	1.075 (27.3)	0.865 (22.0)	0.354 (9.0)	0.551 (14.0)	0.709 (18.0)	0.984 (25.0)	0.228 (5.8)	0.425 (10.8)	0.228 (5.8)	0.276 (7.0)
25	1.175 (29.9)	0.965 (24.5)	0.354 (9.0)	0.630 (16.0)	0.787 (20.0)	1.063 (27.0)	0.228 (5.8)	0.598 (15.2)	0.228 (5.8)	0.425 (10.8)
31	1.327 (33.7)	1.115 (28.3)	0.354 (9.0)	0.669 (17.0)	0.827 (21.0)	1.102 (28.0)	0.228 (5.8)	0.598 (15.2)	0.228 (5.8)	0.425 (10.8)
37	1.476 (37.5)	1.265 (32.1)	0.354 (9.0)	0.709 (18.0)	0.866 (22.0)	1.142 (29.0)	0.228 (5.8)	0.791 (20.1)	0.228 (5.8)	0.598 (15.2)
51	1.421 (36.1)	1.215 (30.9)	0.394 (10.0)	0.748 (19.0)	0.906 (23.0)	1.181 (30.0)	0.268 (6.8)	0.898 (22.8)	0.268 (6.8)	0.697 (17.7)
100	2.165 (55.0)	1.800 (45.7)	0.433 (11.0)	0.827 (21.0)	0.984 (25.0)	1.496 (38.0)	0.307 (7.8)	1.024 (26.0)	0.307 (7.8)	1.024 (26.0)

Materials and Finishes

Backshell Material: Aluminum  
 Backshell Finish: Electroless Nickel or Yellow Chromate over Cadmium  
 Hardware Material: Stainless Steel



Dimensions shown in inches (mm)  
 Specifications and dimensions subject to change