



MILITARY & DEFENSE EDITION

TB Series
MIL-DTL-38999 Series IV
BACKSHELLS & ACCESSORIES

- EMI/RFI Environmental Backshells
- Covers, Gaskets, Mounting Plates
- Shrink Boots & Adapters

TB

About Us

MILNEC INTERCONNECT SYSTEMS is a leader in the design, manufacture, and supply of high-performance cylindrical interconnect systems. From research stations in the Antarctic to spacecraft on the plains of Mars, our high-reliability connector systems conquer the most demanding environments. Milnec is a supplier to leading companies in 24 countries in the following industries:

- Military & Defense
- Aerospace & Space
- Railway & Mass Transit
- Industrial & Heavy Equipment
- Alternative Energy, Nuclear, Oil & Gas



Logistics Solutions for Global Applications

Global logistics and support means we deliver products on time every time to any destination. To support your immediate requirements, we have extensive inventories, making most systems readily available for today's compressed design and production schedules. On average, custom connector solutions made to your exact configuration ship within seven days from the time of order placement.

- Worldwide shipping (restricted to NATO countries only)
- Web access to inventory, prices, & delivery information
- A large stock of popular parts for greater availability
- Competitive pricing and short lead times
- Impeccable customer service & technical support

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U.S. Military Cage Code: 6STX5

NAICS Code: 423690

High Reliability—Simplified

Just because your interconnect problem is complicated does not mean acquiring the solution has to be. Milnec connector systems and our "all-in-one" kits provide engineers the most complete and professional connector solutions with ease and technical clarity.

- Complete, high-reliability solutions
- Simple to understand technical data & configurations
- Online part builder tools, drawings, & documentation
- Field installable & serviceable



Performance With Environmental Responsibility

RoHS compliant products are available to support environmental responsibility and legislative conformity. Through simple modification codes, Milnec provides a wide variety of material options to easily provide customers with fully compliant and eco-friendly connector components.

- RoHS compliant materials & finishes
- Simple material modification codes
- Lead-free solder contacts



Highest Manufacturing Quality

We invest in the finest equipment and modern production processes to ensure that our connectors will exceed your quality and performance expectations. Our production processes include advanced computer numerical control machining, cosmetic and metal finishing, heat treatment, and stainless steel passivation.

- Traceability on 100% of the parts
- Quick production lead times
- Quantity support from R&D to production
- "Just-in-time" delivery, kitting, & special packaging
- Rapid tooling & prototyping for custom designs



Features & Benefits

TB Series • MIL-DTL-38999 Series IV Style Accessories

MIL-DTL-38999 Series IV Type Conenctors

The TB Series of connectors is based on the MIL-DTL-38999 Series IV specification and is fully compatible with all military and commercial derivatives. The series features a host of advanced interconnect features. Most pronounced is the breech-lok coupling system. It provides D38999 Series IV type connectors with simple, quick disconnect operation by distributing the coupling load over solid metal lands on the shell. Internal drive threads ensure that contacts and interfacial seals engage completely. With the modern breech-lok coupling system, engineers can be certain of a secure connection during shock, vibration, or heavy rear accessory loads that exceed those specified for most threaded connectors.



Breech-Lok Coupling System
The MIL-DTL-38999 Series IV type TB Series features an advanced breech-lok coupling system that outperforms typical threaded connectors.

Get Complete IP67 Rated Waterproofing

Reliability is everything when interconnect systems are subjected to the rigors of a harsh environment. Dirt, dust, moisture, and water are all hazards that must be withstood. Get complete environmental protection rated to IP67 for your D38999 Series IV connectors with matching backshells that also provide EMI/RFI protection for shielded applications.

- Strain relief cable clamps
- EMI/environmental backshells
- Shrink boots & adapters
- EMI banding backshells



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Increased EMI Shielding Effectiveness

With today's advanced electronic designs, EMI/RFI shielding is often a priority for engineers. The MIL-DTL-38999 Series IV TB Series offers excellent shielding with grounding fingers that operate on an uninterrupted cylindrical surface for 360 degree protection. When using a conductive finish, grounding occurs before contact engagement. By adding a Milnec EMI environmental backshell or banding backshell, designers can be confident of their sheilded interconnect solution.

Space-Grade Connectors & Accessories

Whether it be for high-altitude aircraft or for satellites circling the globe, the TB Series offers interconnect solutions for these advanced applications through the use of space-grade aluminum components and thermoplastic composite that meet NASA and European Space Agency (ESA) specifications.

- Outgassed per NASA specifications ATSM E-595 and EEE-INST-002
- Space-grade aluminum or composite available



D38999 Connectors Evolved

MIL-DTL-38999 Series IV style TB Series connectors have taken all the features and benefits from previous series and improved upon them for an unbeatable interconnect solution. Breech-lock coupling offers superior shock and vibration resistance. Standard grounding fingers inside the connector shell provide a 360 degree shield from EMI/RFI interference. The grounding fingers engage before contacts for radiation and HERO protection. Milnec's TB Series is the future of connectors.

360 Degree EMI Protection
D38999 Series IV type TB Series connectors offer unrivaled EMI protection through mate-first grounding fingers.



Wide Selection of Protective Accessories

To give your connectors true IP67 environmental protection, they should be used in conjunction with matching sealing accessories. The TB Series offers a wide selection of protective accessories for mission-critical applications, including EMI/RFI environmental backshells and strain reliefs.

- Mounting brackets and sealing screws
- Protective covers with gaskets
- Stowage receptacles
- Mounting gaskets



Features & Benefits

Plug

- Straight w/ RFI grounding fingers

Receptacles

- Wall mount
- Jam nut
- Box mount
- Cable mount
- Thru-bulkhead

Backshells

- Strain relief
- EMI/RFI environmental
- Shrink boots with EMI/RFI banding

Contacts

- Crimp power
- Thermocouple
- Coax & twinax
- PC tail & fiber optic

Inserts

- Heat & fluid resistant
- 51 insert combinations
- Up to 10 alternate key positions

Accessories

- Protective cover with wire rope
- Stowage receptacle
- Mounting gasket
- Mounting bracket with sealing screws

Material

- Aluminum
- Stainless steel
- Composite

Finishes

- Olive drab cadmium
- Electroless nickel
- RoHS compliant finishes available

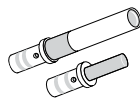
Coupling

- Breech-lok coupling
- 1/4 turn, quick-disconnect
- Secure during shock & vibration

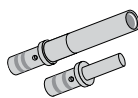
Component Overview

TB Series • MIL-DTL-38999 Series IV Style Accessories

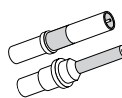
Contacts



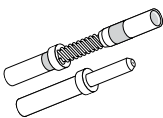
Power
p. S-9



Thermocouple
p. S-9

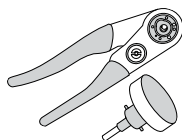


Coax & Twinax
p. S-10

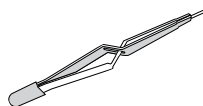


Fiber Optic
p. S-11

Tools



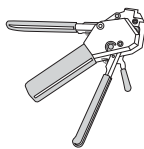
Crimper & Positioner
p. S-9



Insertion/Extraction
p. S-9



Heat Gun
p. S-46

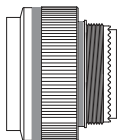


Banding Tool
p. S-47

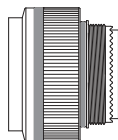


Band
p. S-47

Plugs

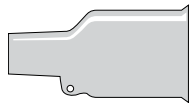


EMI Plug
p. S-20



Non-EMI Plug
p. S-20

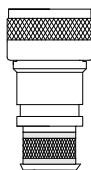
Backshells



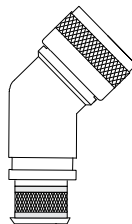
Shrink Boots
Straight
p. S-38



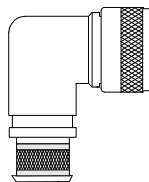
90°
p. S-39



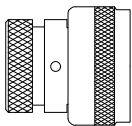
EMI/RFI Banding Boot Adapters
Straight
p. S-41



45°
p. S-41



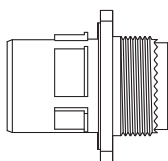
90°
p. S-41



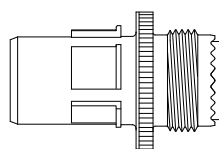
Boot Adapter
p. S-40

TB

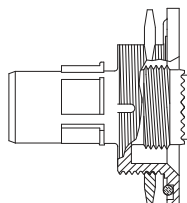
Receptacles



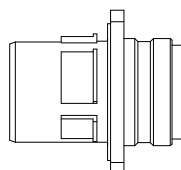
Wall Mount
p. S-21



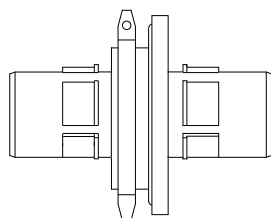
Cable Mount
p. S-23



Jam Nut
p. S-22

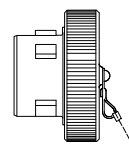


Box Mount
p. S-24

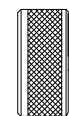


Thru-Bulkhead
p. S-25

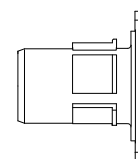
Covers



Plug Cover
p. S-42

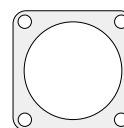


Receptacle Cover
p. S-42

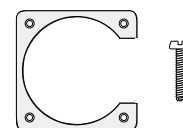


Stowage Receptacle
p. S-43

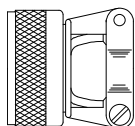
Mounting



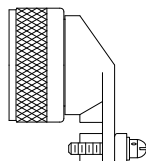
Gasket
p. S-44



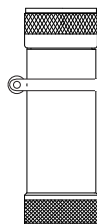
Bracket & Screws
p. S-45



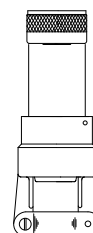
Strain Relief
Straight
p. S-26



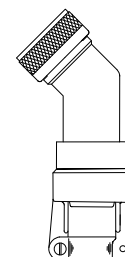
90°
p. S-26



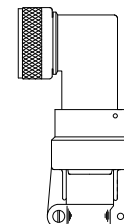
Shorting Cap
p. S-36



Straight
p. S-28



45°
p. S-32



90°
p. S-34

Series Specifications

TB Series • MIL-DTL-38999 Series IV Style Accessories

Performance Specifications

Built to meet or exceed MIL-DTL-38999 specifications
Guaranteed fully compatible and interchangeable with respect to physical and performance characteristics with all existing MIL-DTL-38999 Series IV commercial, military, NASA, ESA (European Space Agency) derivatives

Environmental Characteristics

Temperature Range

-85° to +392°F (-65° to +200°C)

Service life varies with the maximum internal hot spot temperature resulting from any combination of electrical load or ambient temperature:

77°F (25°C): Continuous

221°F (105°C): 45,000 hours

392°F (200°C): 1,000 hours

Water Pressure

IP67 rating (environmental sealing) when used in conjunction with proper sealing accessories
Fully submersible to 3.3 ft (1m) for minimum of 30 min

Air Leakage Rate

Environmental

Air leakage not to exceed 1 inch³/hr (4.55 x 10⁻³ cm³/sec) at 30 psi (2.11 kg/cm²) pressure differential with all contact cavities filled

Hermetic

Helium leakage not to exceed 0.01 micron per ft³/hr (1.0 x 10⁻⁶ cc³/sec) at 15 psi (1.1 kg/cm²)

Hermetic inserts rated up to 14,000 psi (984 kg/cm²) when precision welded or solder mounted

Thermal Vacuum Outgassing

Outgassed at high vacuum (5 x 10⁻⁵ torr) for 48 hours at 350°F (176°C); components shall not release greater than 1.0% total mass loss (TML) and 0.1% collected volatile condensable material (CVCM)

Salt Spray Rating

See Materials & Finishes, p. S-13

Humidity

Mated connectors shall maintain an insulation resistance of 100 megohms or greater at 77°F (25°C) with 95% humidity for duration of 20 days

Chemical Resistance to Fluids

20-hour full immersion (unmated) in hydraulic fluid and lubricating oil without damage or material degradation

Lightning Strike Resistance

Per EIA/ECA-364-75, mated connectors with full wire braid shield assembly will show resistance to indirect lightning strike with the following peak currents (amps):

Aluminum & Stainless Steel Shells: 10,000A

Composite Shells: 6,000A

Physical Characteristics

Coupling

Breech-lok coupling; quick-disconnect mechanism distributes coupling load over solid metal lands, internal drive threads offer mechanical advantage required to engage contacts and seals.

Scoop-Proof

Shell design is 100% scoop-proof to prevent contact raking in blind-mate applications

Insert Arrangements

51 standard, custom inserts available

Alternate Keying

270° engagement rotation available, with 10 different polarizations

Endurance Characteristics

Coupling Cycles

500 coupling cycles (minimum)

Shock

Half-sine wave with 300g's (±15%) magnitude with duration of 3 milliseconds with less than 1 microsecond maximum discontinuity with no cracking, loosening of parts, or other failures

High-Impact Shock

Per MIL-S-901, a 400 lbs (181 kg) hammer dropped onto assembly from height of 1 ft (30 cm), 3 ft (91 cm), and 5 ft (152 cm) applied to connector assembly in 3 axes, totaling 9 impacts, connector assembly experienced less than 1 microsecond maximum discontinuity with no cracking, loosening of parts, or other failures

Sine Vibration

30g at ambient temperature

Random Vibration

50g at ambient temperature

Material Characteristics

Shell

Environmental

Aluminum, solid, one piece, seamless construction
Stainless Steel, solid, one piece, seamless construction
Composite, solid, one piece, seamless construction

Hermetic

Stainless Steel, solid, one piece, seamless construction

Shell Plating (Standard Finishes)

W Finish

Electrically conductive cadmium plate finish with an olive drab chromate after-treat for additional corrosion resistance (500 hr salt spray rating)

N, G Finish

Electrically conductive electroless nickel plating (48 hr salt spray rating)

K Finish

Passivated
(1,000 hr salt spray rating)

RFI Grounding Fingers

Beryllium copper alloy or stainless steel

Shell Conductivity (Standard Finishes)

Per MIL-STD-1344, method 3008, maximum conductivity potential drop shall not exceed the following:

W Finish

2.5 millivolts across assembly shell-to-shell
5.0 millivolts across assembly shell-to-braid

N, G, K Finishes

1.0 millivolts across assembly shell-to-shell
3.5 millivolts across assembly shell-to-braid

HA, HB Finishes

10.0 millivolts across assembly shell-to-shell
15.0 millivolts across assembly shell-to-braid

Magnetic Permeability

Less than 2.0 μ when measured to EIA-364-54

Insert

Glass filled liquid crystal polymer (LCP)
Non-removable and mechanically bonded to shell

Hermetic Insert

Vitreous (glass compression)
Non-removable and mechanically bonded to shell

Protective Cover Chain

Passivated stainless steel, wire rope able to withstand a 25 lb (11.3 kg) tensile force without damage

Adhesives

RTV and epoxies

Grommet, Peripheral Seal, O-Ring, & Interfacial Seal

Blended fluorosilicone (70%) and silicone (30%) elastomer

Contact Characteristics

Contact Design

Environmental

Removable, rear-release crimp contacts

Hermetic

Solder style, permanently bonded to insert

Contact Sizes

#8 (Coax, Twinax), #12, #16, #20, #22D

Contacts Crimp

Beryllium copper alloy, per ASTM B197

Contacts Hermetic

Nickel-iron (Type 52 alloy), per ASTM F30

Contact Plating

Standard Crimp

Gold plate over nickel, 50 μ inches (1.27 μ m) minimum

High-Cycle Crimp

Gold plate over nickel, 150 μ inches (4.00 μ m) minimum

Hermetic

Gold plate over nickel, 50 μ inches (1.27 μ m) minimum

Socket Contact Hood

Stainless steel, passivated

Max Number of Contacts

128 x #22D contacts standard, custom inserts available

Max Contact Resistance

Size #22D: 14.6 milliohm maximum
Size #20: 7.3 milliohm maximum
Size #16: 3.8 milliohm maximum
Size #12: 1.7 milliohm maximum

Max Voltage Drop

Crimp Contacts

<73 millivolt maximum drop (initial)

Hermetic Contacts

<85 millivolt maximum drop (initial)

Contact Retention

Up to 25 pounds, all finish classes

Electrical Characteristics

Current Rating

23 amps (test current) at 68°F (20°C)

Max Operating Voltage

900 VAC (RMS) at sea level

Insulation Resistance

>5,000 megohms at 77°F (25°C)

Wire Size

12 to 28 (AWG)

Wire Sealing Range

Designed for individual wire sealing
Sealing is only guaranteed if wires meet MIL-W-5086 or within permitted ranges

Contact Specifications

TB Series • MIL-DTL-38999 Series IV Style Accessories

Wire & Crimp Contact Dimensions

Contact Size	Wire Range		Potential Drop (Millivolts)	Crimp Well Diameter	Min Crimp Well Depth	Wire Jacket Diameter Sealing Range		Contact Retention Min Axial Load Pounds (Newtons)
	AWG	Dia				Min	Max	
#22D	22, 24, 26, 28	.012-.025 (.32-.64)	<73	.035 (.89)	.141 (3.58)	.030 (.76)	.054 (1.37)	10 (44.5)
#20	20, 22, 24	.020-.032 (.51-.81)	<55	.047 (1.19)	.209 (5.31)	.040 (1.02)	.083 (2.11)	15 (66.7)
#16	16, 18, 20	.032-.050 (.81-1.29)	<49	.067 (1.70)	.209 (5.31)	.065 (1.65)	.109 (2.77)	25 (111.2)
#12	12, 14	.064-.080 (1.62-2.05)	<42	.100 (2.54)	.209 (5.31)	.097 (2.46)	.142 (3.61)	30 (133.4)

Dimensions are in inches (mm) unless otherwise noted.

Wire & Solder Contact Dimensions (Hermetic)

Contact Size	Wire Range		Potential Drop (Millivolts)	Solder Well Diameter	Min Solder Well Depth
	AWG	Dia			
#22D	22, 24, 26, 28	.012-.025 (.32-.64)	<85	.036 (.91)	.094 (2.39)
#20	20, 22, 24	.020-.032 (.51-.81)	<60	.044 (1.12)	.125 (3.18)
#16	16, 18, 20, 22	.025-.050 (.64-1.29)	<85	.078 (1.98)	.141 (3.58)
#12	12, 14	.064-.080 (1.62-2.05)	<82	.116 (2.95)	.141 (3.58)

Dimensions are in inches (mm) unless otherwise noted.

Current Rating By Contact Size & Wire Size

Wire Size (AWG)	Contact Size			
	#22D	#20	#16	#12
28	1.5A	-	-	-
26	2A	-	-	-
24	3A	3A	-	-
22	5A	5A	-	-
20	-	7.5A	7.5A	-
18	-	-	10A	-
16	-	-	13A	-
14	-	-	-	17A
12	-	-	-	23A

Test ratings only. A connector cannot withstand maximum current through all contacts continuously. Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he or she is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

Contact Derating Specifications

Service Rating	Max Operating Voltage (Sea Level)		Test Voltage			
	AC (RMS)	DC	Sea Level AC (RMS)	50,000 ft AC (RMS)	70,000 ft AC (RMS)	110,000 ft AC (RMS)
M	400	500	1,300	550	350	200
N	230	270	1,000	400	260	200
I	600	850	1,800	600	400	200
II	900	1,250	2,300	800	500	200

Test ratings only. A connector cannot withstand maximum current through all contacts continuously. Please note that the establishment of electrical safety factors is left entirely in the designer's hands, since he or she is in the best position to know what peak voltage, switching surges, transients, etc. can be expected in a particular circuit.

Shielding Effectiveness

Freq Range (Mhz)	Attenuation Minimum (dB)
100	90
200	88
300	88
400	87
800	85
1,000	85
1,500	76
2,000	70
3,000	69
4,000	68
6,000	66
10,000	65

Effective over a range of 100 MHz to 10 GHz with a minimum 50 dB effectiveness at 10 GHz, in accordance with test method EIA-364-10.



Contacts, Sealing Plugs, & Tooling

Contact Size	Contact Style	Part Number	Wire Size (AWG)	Wire Range (Dia)	Jacket Strip Length	Crimping Tool	Positioner	Insertion Tool	Extraction Tool
#22D	Standard Pin	TBPP22	22, 24, 26, 28	.012–.025 (.32–.64)	.157 (4.00)	TK201	TP209 (pins only)	TN801	TX802
	High-Cycle Pin	TBHP22					TP207 (socket only)		
	Standard Socket	TBSS22							
	High-Cycle Socket	TBHS22							
	Sealing Plug	TBSP22					No Tooling Required		
#20	Standard Pin	TBPP20	20, 22, 24	.020–.032 (.51–.81)	.197 (5.00)	TK101A	TP104 (Turret)	TN805	TX806
	High-Cycle Pin	TBHP20							
	Standard Socket	TBSS20							
	High-Cycle Socket	TBHS20							
	Sealing Plug	TBSP20					No Tooling Required		
#16	Standard Pin	TBPP16	16, 18, 20	.032–.050 (.81–1.29)	.236 (6.00)	TK101A	TP104 (Turret)	TN807	TX808
	High-Cycle Pin	TBHP16							
	Standard Socket	TBSS16							
	High-Cycle Socket	TBHS16							
	Sealing Plug	TBSP16					No Tooling Required		
#12	Standard Pin	TBPP12	12, 14	.064–.080 (1.62–2.05)	.236 (6.00)	TK101A	TP104 (Turret)	TN809	TX810
	High-Cycle Pin	TBHP12							
	Standard Socket	TBSS12							
	High-Cycle Socket	TBHS12							
	Sealing Plug	TBSP12					No Tooling Required		

Dimensions are in inches (mm) unless otherwise noted.

Thermocouple Contacts

Contact Size	Contact Style	Part Number	Wire Size (AWG)	Wire Range (Dia)	Jacket Strip Length	Crimping Tool	Positioner	Insertion Tool	Extraction Tool						
#22D Alumel	Pin	TBPA22	22, 24, 26, 28	.012–.025 (.32–.64)	.157 (4.00)	TK201	TP209	TN801	TX802						
	Socket	TBSA22					TP207								
#22D Chromel	Pin	TBPR22					TP209								
	Socket	TBSR22					TP207								
#22D Constantan	Pin	TBPK22					TP209								
	Socket	TBSK22					TP207								
#22D Iron	Pin	TBPE22					TP209								
	Socket	TBSE22					TP207								
#20 Alumel	Pin	TBPA20					20, 22, 24			.020–.032 (.51–.81)	.197 (5.00)	TK101A	TP104 (Turret)	TN805	TX806
	Socket	TBSA20													
#20 Chromel	Pin	TBPR20													
	Socket	TBSR20													
#20 Constantan	Pin	TBPK20													
	Socket	TBSK20													
#20 Iron	Pin	TBPE20													
	Socket	TBSE20													
#16 Alumel	Pin	TBPA16	16, 18, 20	.032–.050 (.81–1.29)	.236 (6.00)	TK101A		TN807	TX808						
	Socket	TBSA16													
#16 Chromel	Pin	TBPR16													
	Socket	TBSR16													
#16 Constantan	Pin	TBPK16													
	Socket	TBSK16													
#16 Iron	Pin	TBPE16													
	Socket	TBSE16													

Dimensions are in inches (mm) unless otherwise noted. For other thermocouple materials, including copper, contact your authorized distributor.

Rev. 1231.1

Coax & Twinax Contacts

TB Series • MIL-DTL-38999 Series IV Style Accessories

Coax Contacts

Cable	Contact Size	Part Number		Crimping Tools		Positioners		Installation Tools	
		Pin	Socket	Inner	Outer	Inner	Outer	Insertion	Extraction
RG-178B/U RG-196A/U M17/093-RG178 M17/169-00001	#16	TBPX16-002	TBSX16-003		TK401	TP235	TP402	TN807	TX808
RG-161/U RG-174A/U RG-179B/U RG-187A/U RG-188A/U RG-316/U		TBPX16-004	TBSX16-005						
Haveg 8100207 Times (HS-179) AA3248 Teledyne 11299 Thermax 75-738-BCCWXE Tensolite 3088/L707YX-1		TBPX12-006	TBSX12-007	TK201					
M17/119-RG174 M17/094-RG179 M17/113-RG316	#12				TK3101	TP234	TP3102	TN809	TX810
RG-180B/U RG-195A/U Raychem 9528A1318 Raychem 9527D1514-2L Microdot 293-3922 M17/095-RG180		TBPX12-008	TBSX12-009						
M17/113-RG316 M17/094-RG179		TBPX12-010	TBSX12-011	TK992		TP1360	TP503		
RG-180B/U RG-195A/U Raychem 9527D1514-2L M17/095-RG180	#8	TBPX08-012	TBSX08-013	TK201	TK501	TP231	TP505	—	TX814
RG-400		TBPX08-102	TBSX08-101			TP210	TP545		

Twinax Contacts

Cable	Contact Size	Part Number		Crimping Tools		Positioners		Installation Tools	
		Pin	Socket	Inner	Outer	Inner	Outer	Insertion	Extraction
M17/176-00002	#8	TBPW08-002	TBSW08-003	TK201	TK501	TP231	TP505	—	TX2648

PC Tail Coax & Twinax Contacts

For added engineering flexibility in today's advanced electronic designs, Milnec can provide coax or twinax contacts with PC tails. Custom tail lengths and tail diameters enable engineers to bring high-speed transmission directly to PC board applications with improved signal integrity. Please consult an authorized distributor for lead time information and minimum quantity requirements for special order high-speed PC tail contacts.



Rev. 2203

Size #16 Fiber Optic Contacts

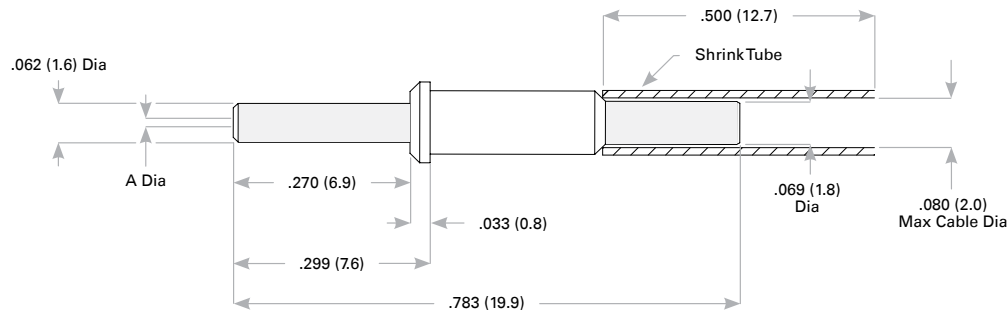
Pin Part Number	Socket Part Number	Fiber Size Core/Cladding	Mode	A Dia (Microns)	Tooling
TBPF-125S*	TBSF-125S*	9/125	Single	125.5	
TBPF-126S*	TBSF-126S*	9/125	Single	126	
TBPF-126M	TBSF-126M*	50/125 & 62.5/125	Multi	126	
TBPF-127M	TBSF-127M	50/125 & 62.5/125	Multi	127	
TBPF-142M	TBSF-142M	100/140	Multi	142	
TBPF-144M	TBSF-144M	100/140	Multi	144	
TBPF-145M*	TBSF-145M*	100/140	Multi	145	Insertion Tool TN807
TBPF-156M*	TBSF-156M*	62.5/125/155 (Polyimide)	Multi	156	
TBPF-157M*	TBSF-157M*	62.5/125/155 (Polyimide)	Multi	157	
TBPF-173M	TBSF-173M	100/140/172 (Polyimide)	Multi	173	Removal Tool TX808
TBPF-175M*	TBSF-175M*	100/140/172 (Polyimide)	Multi	175	
TBPF-231M*	TBSF-231M*	200/230	Multi	231	
TBPF-236M*	TBSF-236M*	200/233	Multi	236	
TBPF-286M*	TBSF-286M*	200/280	Multi	286	
TBPF-448M*	TBSF-448M*	400/440	Multi	448	
TBPF-533M*	TBSF-533M*	486/500	Multi	533	

* Special order item. Please consult an authorized distributor for lead time and minimum quantity requirements.

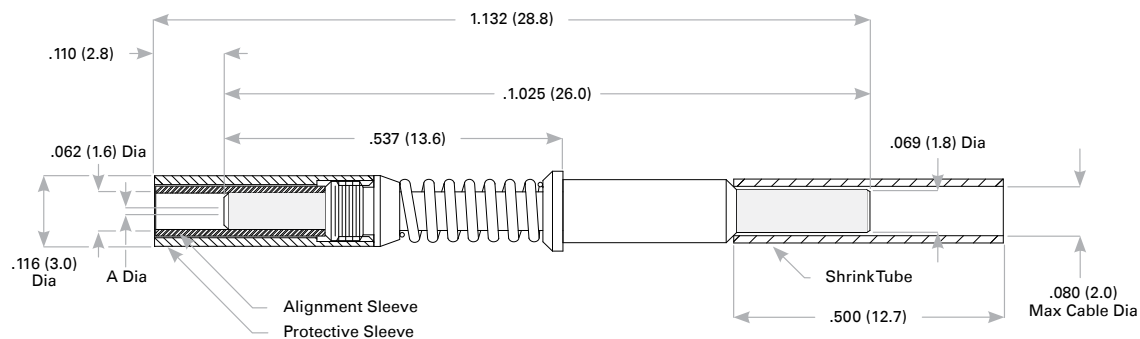


High-Performance Fiber Optic Contacts

Fiber optic termini are used in avionics, robotics, weapons systems, sensors, and other high-performance applications in which low data loss and reliable, repeatable performance is a necessity. These fiber optic termini can be used in any TX Series insert that accommodates standard #16 contacts.



Size 16 Fiber Optic Pin Termini



Size 16 Fiber Optic Socket Termini

PROTECTIVE ACCESSORIES FOR HARSH ENVIRONMENTS



Maintain System Integrity — Anywhere

Keep equipment running by using perfectly matched accessories to protect your connectors. Our full line of protective accessories is designed for mil-spec plugs and receptacles to ensure a reliable installation. Don't let your connectors go into battle alone. Protect them with covers, gaskets, mounting brackets, and sealing screws.

MILNEC
INTERCONNECT SYSTEMS

TB Series Materials & Finishes

The material of a connector is the foundation of its protective ability, providing strength and durability. The finish (or plating) offers the foundation material added corrosion resistance along with an aesthetic look. Each material and finish combination offers unique properties and should be selected according to your application requirements.

The TB Series features aerospace-grade aluminum as a standard material, with electroless nickel and olive drab cadmium as finish options. In addition to the standard options, a wide variety of special materials and finishes is available, including space-grade approved materials and RoHS compliant finishes for eco-friendly designs. ■

Standard TB Series Materials & Finishes

Finish Code	Finish	Hermetic Only	Electrically Conductive	RoHS Compliant	Appearance	Shell Material	Salt Spray Rating	Recommended Operating Temperature Range
W	Olive Drab Cadmium		✓		Drab Olive Green	Aluminum	500 hrs	-85° to +347°F (-65° to +175°C)
N	Electroless Nickel		✓+	✓	Bright Metal	Aluminum	48 hrs	-85° to +392°F (-65° to +200°C)
G	Electroless Nickel (Space-Grade)†		✓+	✓	Bright Metal	Aluminum	48 hrs	-85° to +392°F (-65° to +200°C)
HA	Passivated	✓	✓	✓	Matte Metal	SST Steel	1,000 hrs	-85° to +392°F (-65° to +200°C)
HB	Electrodeposited Nickel	✓	✓+	✓	Bright Metal	SST Steel	48 hrs	-85° to +392°F (-65° to +200°C)
HG	Electroless Nickel (Space-Grade)†	✓	✓+	✓	Bright Metal	SST Steel	48 hrs	-85° to +392°F (-65° to +200°C)

† Outgassed per NASA specifications ATSM E-595 and EEE-INST-002.

✓+ Indicates improved conductivity for shielding effectiveness.

Special TB Series Materials & Finishes*

Finish Code	Finish	Hermetic Only	Electrically Conductive	RoHS Compliant	Appearance	Shell Material	Salt Spray Rating	Recommended Operating Temperature Range
C	Zinc Cobalt			✓	Black	Aluminum	125 hrs	-85° to +347°F (-65° to +175°C)
CC			✓	✓				
T	Hard Anodic			✓	Grey Metal	Aluminum	500 hrs	-85° to +347°F (-65° to +175°C)
NP	Nickel Fluorocarbon Polymer		✓	✓	Grey Metal	Aluminum	1,000 hrs	-85° to +347°F (-65° to +175°C)

* Please consult an authorized distributor for lead time information and minimum quantity requirements for special order finishes.

† Outgassed per NASA specifications ATSM E-595 and EEE-INST-002.

✓+ Indicates improved conductivity for shielding effectiveness.

About RoHS Finishes

The European Union's Restriction of Hazardous Substances (RoHS) 2002/95/EC Directive and its subsequent amendments restricts the incorporation of six hazardous materials in the manufacture of various types of electronic and electrical equipment. It is closely linked with the Waste Electrical and Electronic Equipment Directive (WEEE) 2002/96/EC, which sets collection, recycling, and recovery targets for electrical goods and equipment.



Milnec provides a full offering of RoHS compliant finishes in conductive and non-conductive versions to best suit your application requirements.

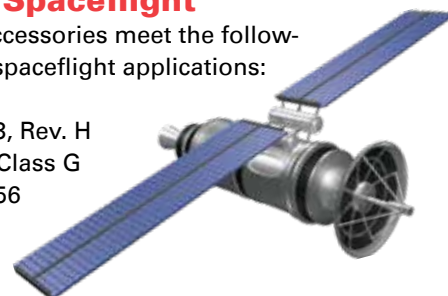
Please consult the latest European Union general and regional regulations to ensure materials are appropriate for your application and compliance requirements.

MIL-DTL-38999 Series IV Style Connector Accessories for Spaceflight

For spaceflight applications, Milnec offers specialized space-grade connector accessories ("G" Finish) with a conductive electroless nickel finish that are rigorously outgassed at high vacuum (5×10^{-5} torr) for 48 hours at 350°F (176°C). This process guarantees that all metallic materials such as rubber, plastic, ink, adhesives, and potting compounds shall not release greater than 1.0% total mass loss (TML) and 0.1% collected volatile condensable material (CVCM).

Milnec space-grade accessories meet the following specifications for spaceflight applications:

- NASA SSP-30423, Rev. H
- MIL-DTL-38999, Class G
- ESA/SCC 3401/056
- ATSM E-595
- EEE-INST-002



Rev. 2203

How to Build Your TB Connector Part Number

A part number is comprised of a string of characters that represent the different elements of a connector. High-performance connectors are built to order from component form using a unique part number as a blueprint to specify particular characteristics. Each modifier of the part number represents a particular configuration.

Below is an example part number for a TB Series connector that designates, 1) TB Series wall mount receptacle, 2) electroless nickel finish over aluminum, 3) 15-35 insert arrangement, 4) pin contacts, 5) normal keying, 6) EMI/RFI environmental backshell (dash number indicates size, length, and cable range), and 7) integrated accessory kit. ■

TB00 N 15-35 P N R2(025) - 03

1 2 3 4 5 6 7

1 Series Shell Style

Standard Environmental Shells

TB06 EMI/RFI Plug, p. S-20
TB05 Non-EM Plug, p. S-20

.....
TB00 Wall mount receptacle, p. S-21
TB02 Box mount receptacle, p. S-24
TB07 Jam nut receptacle, p. S-22
TB01 Cable mount receptacle, p. S-23

For non-standard shell styles including hermetic and thru-bulkhead receptacles, please see specific datasheet for part numbering and kit options.

2 Material & Finish

Aluminum

N Electroless nickel
G Electroless nickel (space-grade)
W Olive drab cadmium
C Zinc Cobalt

For complete material and finish options, including RoHS finishes, see p. S-13.

3 Shell Size & Insert Arrangement

See Insert Arrangement Selection table, p. S-16

4 Contact Style

Standard Power Contacts

P Pin, p. S-9
S Socket, p. S-9
A Pin insert, supplied without contacts
B Socket insert, supplied without contacts

High-Cycle Contacts

F High-cycle pin contacts, p. S-9
G High-cycle socket contacts, p. S-9

5 Alternate Keying

Normal Keying

N Normal

Alternate Keying

A, B, C, D, K Alternate keying

6 Optional Backshell Kit (Omit for None)

Strain Relief Backshell (Self-Locking)

B2 Straight, p. S-26
B4 90°, p. S-26

EMI/RFI Environmental Backshell*

R2 () Straight, p. S-28
R3 () 45°, p. S-32
R4 () 90°, p. S-34

Supply specific Dash No. on referenced datasheet page for appropriate connector shell size.

Shrink Boot & Boot Adapter*

K2 Straight boot, p. S-38, & adapter, p. S-40
K4 90° boot, p. B-39, & adapter, p. S-40

K2 supplied with recommended boot in 100 material, p. S-38.
 K4 supplied with recommended boot in 100 material, p. S-39.

Shrink Boot, EMI/RFI Banding Boot Adapter, & Band*

D2 Straight adapter, p. S-41, w/ boot & band
D4 90° adapter, p. S-41, w/ boot & band

Supplied with recommended straight boot in 100 material, p. S-38, and TB250 band, p. S-47.

* Backshell kits will be supplied with matching connector material, except stainless steel.

7 Optional Accessory Kit (Omit for None)

01 For Plugs:

Protective cover, p. S-42

02 For Receptacles:

Protective cover, p. S-42 +
 Mounting gasket, p. S-44

03 For Receptacles:

Protective cover, p. S-42 +
 Mounting gasket, p. S-44 +
 Mounting bracket, p. S-45
 with (4x) sealing screws

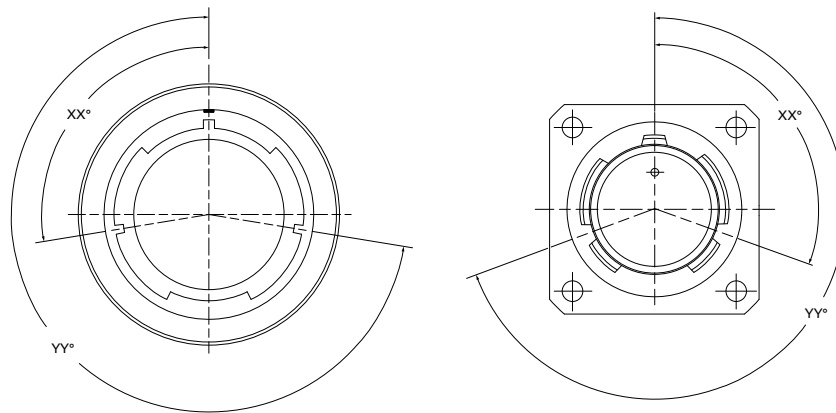
Kits with EMI/RFI backshells will be supplied with TBGS RFI shielding gaskets.

TB Series Shell Keying

Alternate key positions should be used to avoid cross-mating of connectors with the same (or similar) insert pattern that are in close proximity to one another, such as on a high-density control panel. A plug with a given key position letter will only mate with a receptacle with the same letter. Inserts maintain a fixed position regardless of keying. For example, receptacle "N" will only mate with plug "N," and a second receptacle with an "A" keying will only mate with the "A" cable plug. In this manner, cross-mating of similar connectors by accident becomes impossible. ■

Master Key/Keyway Position

Polarization	XX°	YY°
N	110°	250°
A	100°	260°
B	90°	270°
C	80°	280°
D	70°	290°
K	120°	255°

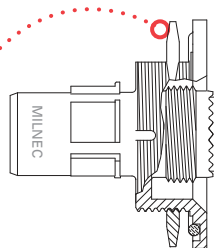


Accessory & Jam Nut Torque

Shell Size	Connector Accessory Metric Thread Dimension	Aluminum & Stainless Steel				Composite			
		Accessory Thread Torque		Jam Nut Torque		Accessory Thread Torque		Jam Nut Torque	
		Min	Max	Min	Max	Min	Max	Min	Max
9	M12 X 1-6g	70 (7.9)	75 (8.5)	30 (3.4)	36 (4.1)	30 (3.4)	36 (4.1)	30 (3.4)	36 (4.1)
11	M15 X 1-6g	80 (9.0)	85 (9.6)	40 (4.5)	46 (5.2)	40 (4.5)	46 (5.2)	40 (4.5)	46 (5.2)
13	M18 X 1-6g	100 (11.3)	110 (12.4)	55 (6.2)	60 (6.8)	55 (6.2)	60 (6.8)	55 (6.2)	60 (6.8)
15	M22 X 1-6g	140 (15.8)	150 (17.0)	70 (7.9)	75 (8.5)	70 (7.9)	75 (8.5)	70 (7.9)	75 (8.5)
17	M25 X 1-6g	160 (18.1)	170 (19.2)	80 (9.0)	85 (9.6)	80 (9.0)	85 (9.6)	80 (9.0)	85 (9.6)
19	M28 X 1-6g	210 (23.7)	230 (26.0)	90 (10.2)	95 (10.7)	90 (10.2)	95 (10.7)	90 (10.2)	95 (10.7)
21	M31 X 1-6g	260 (29.4)	280 (31.6)	100 (11.3)	110 (12.4)	100 (11.3)	110 (12.4)	100 (11.3)	110 (12.4)
23	M34 X 1-6g	280 (31.6)	300 (33.9)	110 (12.4)	120 (13.6)	110 (12.4)	120 (13.6)	110 (12.4)	120 (13.6)
25	M37 X 1-6g	300 (33.9)	325 (36.7)	120 (13.6)	130 (14.7)	120 (13.6)	130 (14.7)	120 (13.6)	130 (14.7)

Units are in inch pounds (Newton meters).

Jam Nut Hex Wrenches
When working with composite jam nut connectors, special hex wrenches are recommended to avoid damaging the jam nut. Contact an authorized distributor for suggested tooling and assembly instructions.



Cable Clamp Screw Torque

Screw Size	Min	Max
#2-56	1.5 (.2)	2.5 (.3)
#4-40	3.5 (.4)	4.5 (.5)
#6-32	5 (.6)	7 (.8)
#8-32	7 (.8)	9 (1.0)
#10-32	9 (1.0)	11 (1.2)
#250-20	11 (1.2)	13 (1.5)

Units are in inch pounds (Newton meters).

Insert Arrangements

TB Series • MIL-DTL-38999 Series IV Style Accessories

Selecting Your Insert Arrangement

Below is a chart that represents every available shell and insert arrangement within the series. To choose the proper insert arrangement, you must first distinguish your application requirements for contact size and quantity.

Each insert arrangement has a unique number to identify its size and contact arrangement. The first number is the shell size. The second number is the contact arrangement. It does not, however, always equal the total number of contacts. ■

Insert Arrangement Selection

Insert Arrangement	Military Shell Size	Total Contacts	Hermetic Available	PC Tail Kit Available	Service Rating	Contact Size						
						#22D	#20	#16	#12	#12 Coax ¹	#8 Coax ²	#8 Twinax ³
9-35	A	6	✓	✓	M	6						
9-98	A	3	✓	✓	I		3					
11-2	B	2	✓	✓	I			2				
11-3 [†]	B	3			II			3				
11-5	B	5	✓	✓	I		5					
11-35	B	13	✓	✓	M	13						
11-98	B	6	✓	✓	I		6					
11-99	B	7	✓	✓	I		7					
13-4	C	4	✓	✓	I			4				
13-35	C	22	✓	✓	M	22						
13-98	C	10	✓	✓	I		10					
15-5	D	5	✓	✓	II			5				
15-15	D	15	✓		I		14	1				
15-18	D	18	✓	✓	I		18					
15-19	D	19	✓	✓	I		19					
15-35	D	37	✓	✓	M	37						
15-97	D	12	✓	✓	I		8	4				
17-2	E	39			M	38						1
17-6	E	6	✓	✓	I				6			
17-8	E	8	✓	✓	II			8				
17-26	E	26	✓	✓	I		26					
17-35	E	55	✓	✓	M	55						
17-98 [†]	E	26			M	24						2
17-99	E	23	✓		I		21	2				
19-3 [†]	F	3			M							3
19-4 [†]	F	4			M							4
19-11	F	11	✓	✓	II			11				
19-18	F	18			M	14						4
19-32	F	32	✓	✓	I		32					
19-35	F	66	✓	✓	M	66						
21-5 [†]	G	5			M							5
21-11	G	11	✓	✓	I				11			
21-16	G	16	✓	✓	II			16				
21-26 [†]	G	25			M		23					2
21-35	G	79	✓	✓	M	79						
21-39	G	39	✓	✓	I		37	2				
21-41	G	41	✓	✓	I		41					
23-21	H	21			II			21				
23-35	H	100			M	100						

(Continued on next page)

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Insert Arrangement Selection (Continued from previous page)

Insert Arrangement	Military Shell Size	Total Contacts	Hermetic Available	PC Tail Kit Available	Service Rating	Contact Size						
						#22D	#20	#16	#12	#12 Coax ¹	#8 Coax ²	#8 Twinax ³
23-53	H	53	✓	✓	I		53					
23-55	H	55	✓	✓	I		55					
23-97 [†]	H	16			I			16				
23-99 [†]	H	11			II			11				
25-4	J	56	✓	✓	I		48	8				
25-8	J	8			Twinax							8
25-19	J	19	✓	✓	I				19			
25-20 ⁵	J	30			N		10	13		4		3
25-24	J	24	✓	✓	I			12	12			
25-29	J	29	✓	✓	I			29				
25-35	J	128	✓	✓	M	128						
25-43	J	43	✓	✓	I		23	20				
25-46	J	46			I		40	4			2	
25-61	J	61	✓	✓	I		61					

¹ Includes the following #12 coax contacts: TXPX12-006 (pin) or TXSX12-007 (socket) contacts, see p. B-11 for more information.

² Includes the following #8 coax contacts: TXPX08-010 (pin) or TXSX08-011 (socket) contacts, see p. B-11 for more information.

³ Includes the following #8 twinax contacts: TXPW08-002 (pin) or TXSW08-003 (socket) contacts, see p. B-11 for more information.

⁴ 13-13 insert is designed to accept 2 of our standard size #16 fiber optic contacts in place of #16 power contacts, see p. B-12 for more information.

⁵ 25-20 insert is designed for MIL-STD-1760 applications and includes the following contacts:

2 x #12 coax contacts (matched impedance): TXPX12-006 (pin) or TXSX12-007 (socket) contacts

2 x #12 coax contacts (matched impedance): TXPX12-010 (pin) or TXSX12-011 (socket) contacts

3 x #8 twinax contacts: TXPW08-002 (pin) or TXSW08-003 (socket) contacts

[†] Special order only Consult distributor for lead time.

HIGH-FREQUENCY CONTACTS FOR HIGH-SPEED TRANSMISSION

Eight concentric twinax contacts for high-speed data transmission in a rugged connector.



Contacts for Advanced Applications

Milnec's high-frequency contacts are the ideal choice for advanced applications that require superior electrical performance along with shielding to protect from outside electrical interference.

- High-speed RF contacts
- Fiber optic contacts
- PC tail contacts



Insert Arrangement Drawings

TB Series • MIL-DTL-38999 Series IV Style Accessories

Arrangement
Service Rating
Number of Contacts

9-35	9-98	11-2	11-3	11-5	11-35	11-98	11-99	13-4
M	I	I	II	I	M	I	I	I
6 x #22D	3 x #20	2 x #16	3 x #16	5 x #20	13 x #22D	6 x #20	7 x #20	4 x #16

Arrangement
Service Rating
Number of Contacts

13-35	13-98	15-5	15-15	15-18	15-19	15-35	15-97
M	I	II	I	I	I	M	I
22 x #22D	10 x #20	5 x #16	14 x #20 1 x #16	18 x #20	19 x #20	37 x #22D	8 x #20 4 x #16

Arrangement
Service Rating
Number of Contacts

17-2	17-6	17-8	17-26	17-35	17-98	17-99
M	I	II	I	M	M	I
38 x #22D 1 x #8 Twinax	6 x #12	8 x #16	26 x #20	55 x #22D	24 x #22D 2 x #8 Twinax	21 x #20 2 x #16

Arrangement
Service Rating
Number of Contacts

19-3	19-4	19-11	19-18	19-32	19-35
M	M	II	M	I	M
3 x #8 Twinax	4 x #8 Twinax	11 x #16	14 x #22D 4 x #8 Twinax	32 x #20	66 x #22D

Arrangement
Service Rating
Number of Contacts

21-5	21-11	21-16	21-26	21-35
M	I	II	M	M
5 x #8 Twinax	11 x #12	16 x #16	23 x #20 2 x #8 Twinax	79 x #22D

Contact Legend

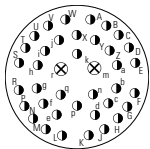
8	10	12	#16	#20	#22D

(Continued on next page)
Rev. 2203

Insert Arrangement Drawings

TB Series • MIL-DTL-38999 Series IV Style Accessories

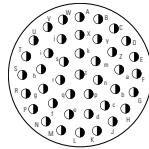
(Continued from previous page)



21-39

I

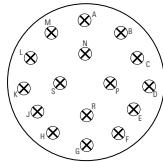
37 x #20
2 x #16



21-41

I

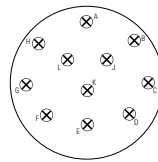
41 x #20



23-97

I

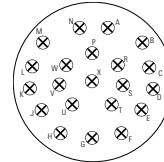
16 x #16



23-21

II

11 x #16

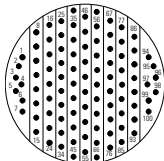


23-21

II

21 x #16

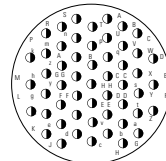
Arrangement
Service Rating
Number of Contacts



23-35

M

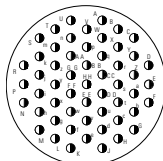
100 x #22D



23-53

I

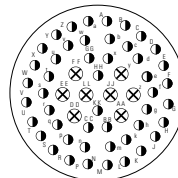
53 x #20



23-55

I

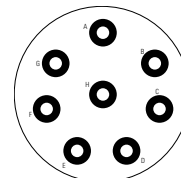
55 x #20



25-4

I

48 x #20
8 x #16

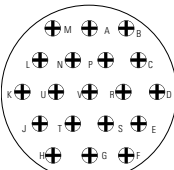


25-8

Twinax

8 x #8 Twinax

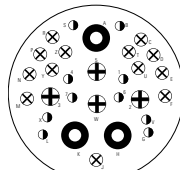
Arrangement
Service Rating
Number of Contacts



25-19

I

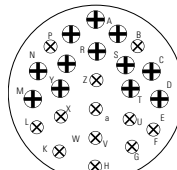
19 x #12



25-20

N

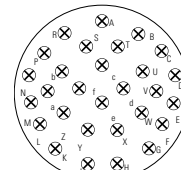
10 x #20, 13 x #16,
3 x #8 Twinax, 4 x #12 Coax



25-24

I

12 x #16
12 x #12

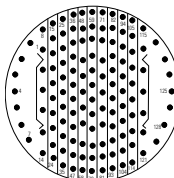


25-29

I

29 x #16

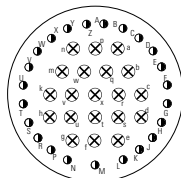
Arrangement
Service Rating
Number of Contacts



25-35

M

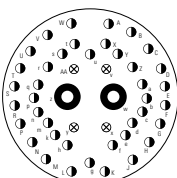
128 x #22D



25-43

I

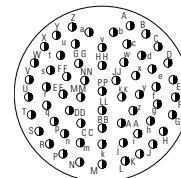
23 x #20
20 x #16



25-46

I

40 x #20; 4 x #16
2 x #8 Coax



25-61

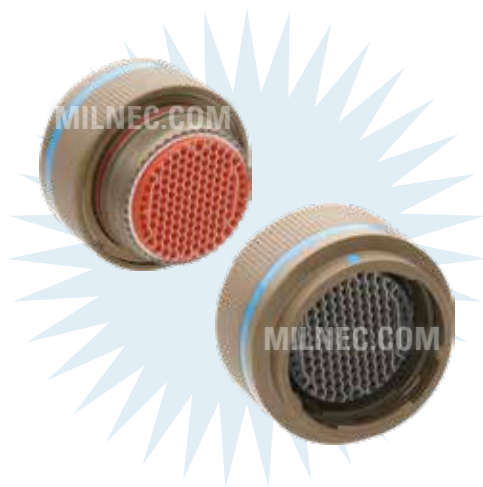
I

61 x #20

Arrangement
Service Rating
Number of Contacts

D38999/46 & D38999/47 Connector Type Datasheet

TB Series • MIL-DTL-38999 Series IV Style Accessories



TB06 Cross-Reference & Compatibility

Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series IV	D38999/46, D38999/47	D38999/40, D38999/42, D38999/44, D38999/49
G & H Tech / Cooper	BL06, BLG6	BL00, BL02, BL03, BL07
Deutsch	DIV/45, DIV/46	DIV/40, DIV/41, DIV/43, DIV/44

TB06 N 13-35 S N - R2(015) - 01

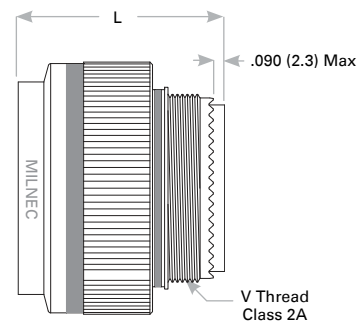
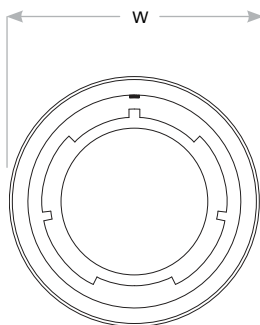
- 1 **BASIC PART NUMBER**
TB06 EMI plug
TB05 Non-EMI plug
- 2 **MATERIAL & FINISH**
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
- 3 **SHELL SIZE & INSERT ARRANGEMENT**
 See Insert Arrangement Selection table, p. S-16
- 4 **CONTACT STYLE**
P Pin
S Socket
- 5 **ALTERNATE KEYING**
N NORMAL or A, B, C, D, K
- 6 **OPTIONAL BACKSHELL KIT (OMIT FOR NONE)**
B2 Straight strain relief (self-locking), p. S-26
R2() Straight EMI/RFI environmental, p. S-28
 (Add dash number for appropriate shell size, see p. S-28)
K2 Boot adapter, p. S-40, & straight shrink boot, p. S-38
- 7 **OPTIONAL ACCESSORY KIT (OMIT FOR NONE)**
01 Protective cover

Note: See part builder (p. S-14) for additional kit options.

Plug Dimensions

Shell Size	Military Shell Size	W	L	V Thread Class 2A
9	A	0.935 (23.8)	1.620 (41.2)	M12X1-6g
11	B	1.047 (26.6)	1.620 (41.2)	M15X1-6g
13	C	1.220 (31.0)	1.620 (41.2)	M18X1-6g
15	D	1.346 (34.2)	1.620 (41.2)	M22X1-6g
17	E	1.472 (37.4)	1.620 (41.2)	M25X1-6g
19	F	1.582 (40.2)	1.620 (41.2)	M28X1-6g
21	G	1.704 (43.3)	1.620 (41.2)	M31X1-6g
23	H	1.831 (46.5)	1.620 (41.2)	M34X1-6g
25	J	1.957 (49.7)	1.620 (41.2)	M37X1-6g

Dimensions are in inches (mm).



Rev. 2203

D38999/40 Connector Type Datasheet

TB Series • MIL-DTL-38999 Series IV Style Accessories

TB00 N 13-35 S N - R2(015) - 03



- 1 **BASIC PART NUMBER**
TB00 Wall mount receptacle
- 2 **MATERIAL & FINISH**
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
- 3 **SHELL SIZE & INSERT ARRANGEMENT**
See Insert Arrangement Selection table, p. S-16
- 4 **CONTACT STYLE**
P Pin
S Socket
- 5 **ALTERNATE KEYING**
N NORMAL or A, B, C, D, K
- 6 **OPTIONAL BACKSHELL KIT (OMIT FOR NONE)**
B2 Straight strain relief (self-locking), p. S-26
R2() Straight EMI/RFI environmental, p. S-28
(Add dash number for appropriate shell size, see p. S-28)
K2 Boot adapter, p. S-40, & straight shrink boot, p. S-38
- 7 **OPTIONAL ACCESSORY KIT (OMIT FOR NONE)**
02 Protective cover + mounting gasket
03 02 kit + mounting bracket + sealing screws

TB00 Cross-Reference & Compatibility

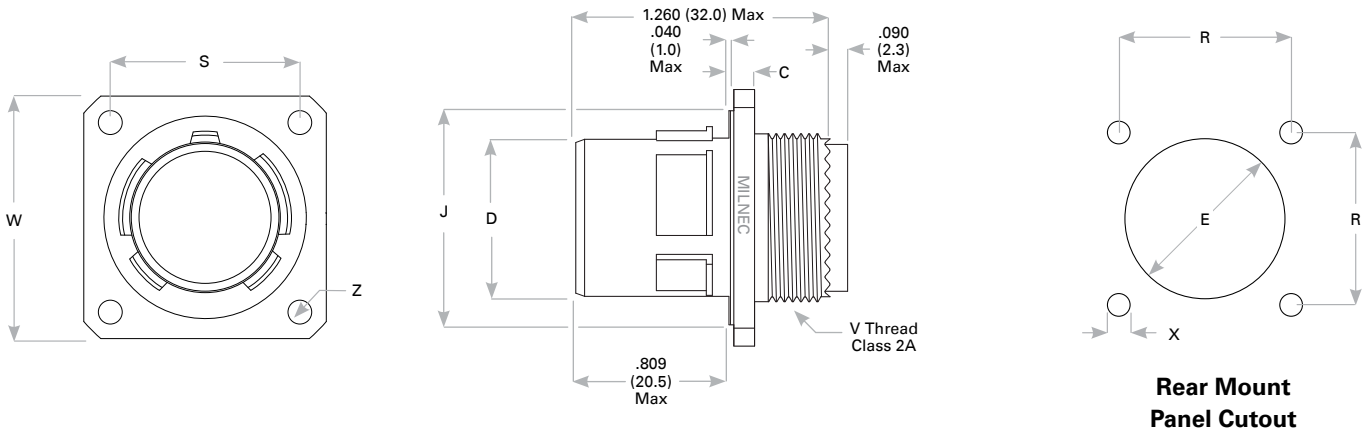
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series IV	D38999/40,	D38999/46, D38999/47
G & H Tech / Cooper	BL00	BL06, BLG6
Deutsch	DIV/40	DIV/45, DIV/46

Note: See part builder (p. S-14) for additional kit options.

Receptacle Dimensions

Shell Size	Military Shell Size	W	S	Z	J	D	C	V Thread Class 2A	X	R	E
9	A	.948 (24.1)	.656 (16.7)	.122 (3.1)	.668 (17.0)	.384 (9.8)	.102 (2.6)	M12X1-6g	.130 (3.3)	.656 (16.7)	.681 (17.3)
11	B	1.051 (26.7)	.812 (20.6)	.122 (3.1)	.793 (20.1)	.509 (12.9)	.102 (2.6)	M15X1-6g	.130 (3.3)	.812 (20.6)	.806 (20.5)
13	C	1.146 (29.1)	.906 (23.0)	.122 (3.1)	.919 (23.3)	.634 (16.1)	.102 (2.6)	M18X1-6g	.130 (3.3)	.906 (23.0)	.932 (23.7)
15	D	1.240 (31.5)	.969 (24.6)	.122 (3.1)	1.044 (26.5)	.759 (19.3)	.102 (2.6)	M22X1-6g	.130 (3.3)	.969 (24.6)	1.057 (26.8)
17	E	1.335 (33.9)	1.062 (27.0)	.122 (3.1)	1.170 (29.7)	.885 (22.5)	.102 (2.6)	M25X1-6g	.130 (3.3)	1.062 (27.0)	1.183 (30.0)
19	F	1.461 (37.1)	1.156 (29.4)	.122 (3.1)	1.294 (32.9)	1.009 (25.6)	.102 (2.6)	M28X1-6g	.130 (3.3)	1.156 (29.4)	1.307 (33.2)
21	G	1.583 (40.2)	1.250 (31.8)	.122 (3.1)	1.419 (36.0)	1.134 (28.8)	.133 (3.4)	M31X1-6g	.130 (3.3)	1.250 (31.8)	1.432 (36.4)
23	H	1.709 (43.4)	1.375 (34.9)	.142 (3.6)	1.544 (39.2)	1.259 (32.0)	.133 (3.4)	M34X1-6g	.130 (3.3)	1.375 (34.9)	1.557 (39.5)
25	J	1.835 (46.6)	1.500 (38.1)	.142 (3.6)	1.669 (42.4)	1.384 (35.2)	.133 (3.4)	M37X1-6g	.130 (3.3)	1.500 (38.1)	1.682 (42.7)

Dimensions are in inches (mm). Max panel thickness .125 (3.2) for front or rear panel mounting.



Rev. 2203

D38999/44 Connector Type Datasheet

TB Series • MIL-DTL-38999 Series IV Style Accessories



TB07 Cross-Reference & Compatibility

Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series IV	D38999/44	D38999/46, D38999/47
G & H Tech / Cooper	BL07	BL06, BLG6
Deutsch	DIV/44	DIV/45, DIV/46

TB07 N 13-35 S N - R2(015) - 02

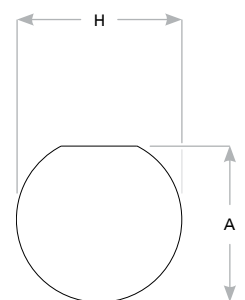
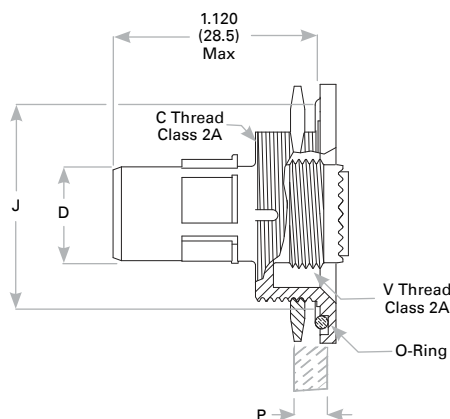
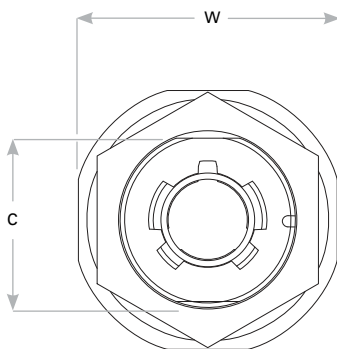
- 1 **BASIC PART NUMBER**
TB07 Jam nut receptacle
- 2 **MATERIAL & FINISH**
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
- 3 **SHELL SIZE & INSERT ARRANGEMENT**
See Insert Arrangement Selection table, p. S-16
- 4 **CONTACT STYLE**
P Pin
S Socket
- 5 **ALTERNATE KEYING**
N NORMAL or A, B, C, D, K
- 6 **OPTIONAL BACKSHELL KIT (OMIT FOR NONE)**
B2 Straight strain relief (self-locking), p. S-26
R2() Straight EMI/RFI environmental, p. S-28
(Add dash number for appropriate shell size, see p. S-28)
K2 Boot adapter, p. S-40, & straight shrink boot, p. S-38
- 7 **OPTIONAL ACCESSORY KIT (OMIT FOR NONE)**
02 Protective cover

Note: See part builder (p. S-14) for additional kit options.

Receptacle Dimensions

Shell Size	Military Shell Size	W	C	J	D	C Thread Class 2A	V Thread Class 2A	P Max Rear Panel†	H	A
9	A	1.073 (27.3)	.651 (16.5)	.680 (17.3)	.384 (9.8)	M17X1-6g	M12X1-6g	.125 (3.2)	.699 (17.8)	.644 (16.4)
11	B	1.394 (35.4)	.942 (23.9)	1.000 (25.4)	.509 (12.9)	M25X1-6g	M15X1-6g	.125 (3.2)	1.017 (25.8)	.955 (24.3)
13	C	1.520 (38.6)	1.066 (27.1)	1.125 (28.6)	.634 (16.1)	M28X1-6g	M18X1-6g	.125 (3.2)	1.144 (29.1)	1.084 (27.5)
15	D	1.642 (41.7)	1.191 (30.3)	1.250 (31.8)	.759 (19.3)	M31X1-6g	M22X1-6g	.125 (3.2)	1.269 (32.2)	1.208 (30.7)
17	E	1.799 (45.7)	1.321 (33.6)	1.375 (34.9)	.885 (22.5)	M34X1-6g	M25X1-6g	.125 (3.2)	1.394 (35.4)	1.333 (33.9)
19	F	1.909 (48.5)	1.441 (36.6)	1.500 (38.1)	1.009 (25.6)	M38X1-6g	M28X1-6g	.125 (3.2)	1.517 (38.5)	1.459 (37.1)
21	G	2.035 (51.7)	1.566 (39.8)	1.625 (41.3)	1.134 (28.8)	M41X1-6g	M31X1-6g	.125 (3.2)	1.644 (41.8)	1.576 (40.0)
23	H	2.157 (54.8)	1.691 (43.0)	1.750 (44.5)	1.259 (32.0)	M44X1-6g	M34X1-6g	.125 (3.2)	1.769 (44.9)	1.701 (43.2)
25	J	2.283 (58.0)	1.816 (46.1)	1.875 (47.6)	1.384 (35.2)	M47X1-6g	M37X1-6g	.125 (3.2)	1.894 (48.1)	1.826 (46.4)

Dimensions are in inches (mm). † Max panel thickness will ensure proper coupling clearance.



Panel Cutout

D38999/49 Connector Type Datasheet

TB Series • MIL-DTL-38999 Series IV Style Accessories

TB01 N 17-6 S N - R2(015) - 02



- 1 **BASIC PART NUMBER**
TB01 Cable mount receptacle
- 2 **MATERIAL & FINISH**
N Aluminum, electroless nickel
W Aluminum, olive drab
G Aluminum, electroless nickel (space-grade)
- 3 **SHELL SIZE & INSERT ARRANGEMENT**
See Insert Arrangement Selection table, p. S-16
- 4 **CONTACT STYLE**
P Pin
S Socket
- 5 **ALTERNATE KEYING**
N NORMAL or A, B, C, D, K
- 6 **OPTIONAL BACKSHELL KIT** (OMIT FOR NONE)
B2 Straight strain relief (self-locking), p. S-26
R2() Straight EMI/RFI environmental, p. S-28
(Add dash number for appropriate shell size, see p. S-28)
K2 Boot adapter, p. S-40, & straight shrink boot, p. S-38
- 7 **OPTIONAL ACCESSORY KIT** (OMIT FOR NONE)
02 Protective cover

TB01 Compatibility

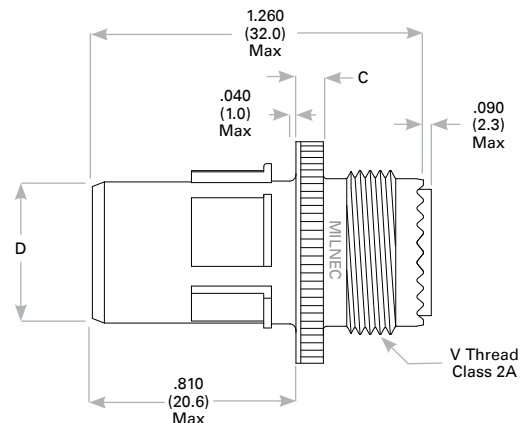
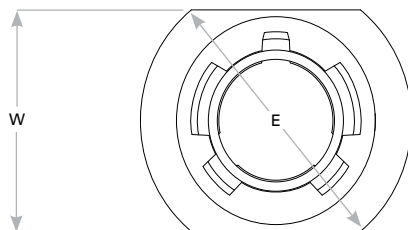
Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series IV	D38999/49	D38999/46, D38999/47
G & H Tech / Cooper	BL03	BL06, BLG6
Deutsch	DIV/43	DIV/45, DIV/46

Note: See part builder (p. S-14) for additional kit options.

Receptacle Dimensions

Shell Size	Military Shell Size	W	E	D	C	V Thread Class 2A
9	A	.668 (17.0)	.948 (24.1)	.384 (9.8)	.102 (2.6)	M12X1-6g
11	B	.793 (20.1)	1.054 (26.8)	.509 (12.9)	.102 (2.6)	M15X1-6g
13	C	.919 (23.3)	1.126 (28.6)	.634 (16.1)	.102 (2.6)	M18X1-6g
15	D	1.044 (26.5)	1.351 (34.3)	.759 (19.3)	.102 (2.6)	M22X1-6g
17	E	1.170 (29.7)	1.476 (37.5)	.885 (22.5)	.102 (2.6)	M25X1-6g
19	F	1.294 (32.9)	1.586 (40.3)	1.009 (25.6)	.102 (2.6)	M28X1-6g
21	G	1.419 (36.0)	1.711 (43.5)	1.134 (28.8)	.133 (3.4)	M31X1-6g
23	H	1.544 (39.2)	1.836 (46.6)	1.259 (32.0)	.133 (3.4)	M34X1-6g
25	J	1.669 (42.4)	1.964 (50.0)	1.384 (35.2)	.133 (3.4)	M37X1-6g

Dimensions are in inches (mm).



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D38999/42 Connector Type Datasheet

TB Series • MIL-DTL-38999 Series IV Style Accessories



TB02 Compatibility

Compatible Brands	Equivalents	Mates
MIL-DTL-38999 Series IV	D38999/42	D38999/46, D38999/47
G & H Tech / Cooper	BL02	BL06, BLG6
Deutsch	DIV/41	DIV/45, DIV/46

TB02 N 9-98 S N - 03

- 123456
- 1

BASIC PART NUMBER
TB02 Box mount receptacle
- 2

MATERIAL & FINISH
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
- 3

SHELL SIZE & INSERT ARRANGEMENT
See Insert Arrangement Selection table, p. S-16
- 4

CONTACT STYLE
P Pin
S Socket
- 5

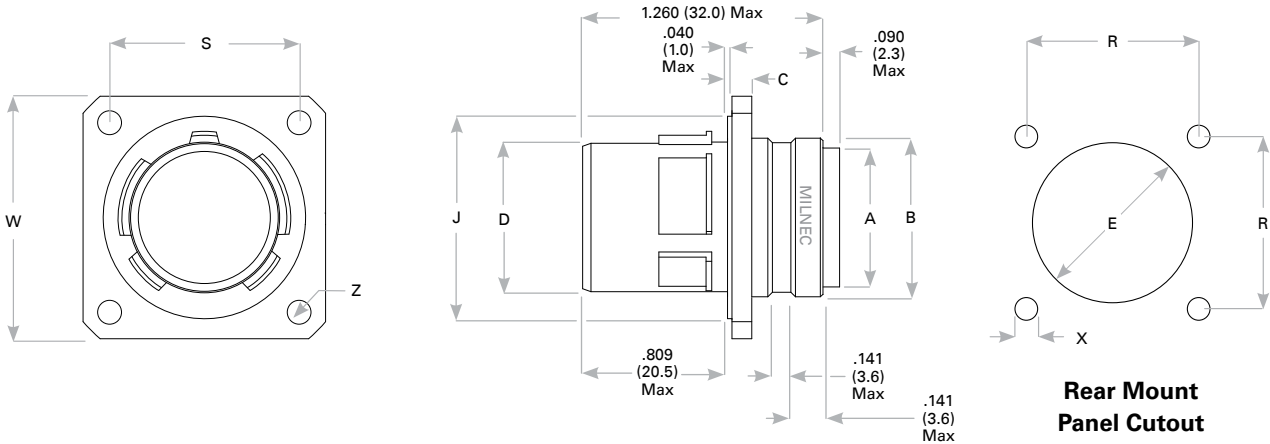
ALTERNATE KEYING
N NORMAL or A, B, C, D, K
- 6

OPTIONAL ACCESSORY KIT (OMIT FOR NONE)
02 Protective cover + mounting gasket
03 02 kit + mounting bracket + sealing screws
-

Receptacle Dimensions

Shell Size	Military Shell Size	W	S	Z	J	D	C	A	B	X	R	E
9	A	.948 (24.1)	.656 (16.7)	.122 (3.1)	.668 (17.0)	.384 (9.8)	.102 (2.6)	.412 (10.5)	.453 (11.5)	.130 (3.3)	.656 (16.7)	.681 (17.3)
11	B	1.051 (26.7)	.812 (20.6)	.122 (3.1)	.793 (20.1)	.509 (12.9)	.102 (2.6)	.535 (13.6)	.578 (14.7)	.130 (3.3)	.812 (20.6)	.806 (20.5)
13	C	1.146 (29.1)	.906 (23.0)	.122 (3.1)	.919 (23.3)	.634 (16.1)	.102 (2.6)	.649 (16.5)	.692 (17.6)	.130 (3.3)	.906 (23.0)	.932 (23.7)
15	D	1.240 (31.5)	.969 (24.6)	.122 (3.1)	1.044 (26.5)	.759 (19.3)	.102 (2.6)	.771 (19.6)	.818 (20.8)	.130 (3.3)	.969 (24.6)	1.057 (26.8)
17	E	1.335 (33.9)	1.062 (27.0)	.122 (3.1)	1.170 (29.7)	.885 (22.5)	.102 (2.6)	.897 (22.8)	.944 (24.0)	.130 (3.3)	1.062 (27.0)	1.183 (30.0)
19	F	1.461 (37.1)	1.156 (29.4)	.122 (3.1)	1.294 (32.9)	1.009 (25.6)	.102 (2.6)	1.003 (25.5)	1.051 (26.7)	.130 (3.3)	1.156 (29.4)	1.307 (33.2)
21	G	1.583 (40.2)	1.250 (31.8)	.122 (3.1)	1.419 (36.0)	1.134 (28.8)	.133 (3.4)	1.129 (28.7)	1.173 (29.8)	.130 (3.3)	1.250 (31.8)	1.432 (36.4)
23	H	1.709 (43.4)	1.375 (34.9)	.142 (3.6)	1.544 (39.2)	1.259 (32.0)	.133 (3.4)	1.255 (31.9)	1.299 (33.0)	.130 (3.3)	1.375 (34.9)	1.557 (39.5)
25	J	1.835 (46.6)	1.500 (38.1)	.142 (3.6)	1.669 (42.4)	1.384 (35.2)	.133 (3.4)	1.377 (35.0)	1.425 (36.2)	.130 (3.3)	1.500 (38.1)	1.682 (42.7)

Dimensions are in inches (mm). Max panel thickness .125 (3.2) for front or rear panel mounting.



Rev. 2203

Thru-Bulkhead Receptacle

TB Series • MIL-DTL-38999 Series IV Style Accessories

TB24 N 15-35 S 1 N - 03

1 2 3 4 5 6 7

- 1 **BASIC PART NUMBER**
TB24 Jam nut thru-bulkhead receptacle
- 2 **MATERIAL & FINISH**
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
- 3 **SHELL SIZE & INSERT ARRANGEMENT**
See Insert Arrangement Selection table, p. S-16
- 4 **CONTACT STYLE**
P Pins on flange side, sockets opposite
S Sockets on flange side, pins opposite
- 5 **PANEL RANGE**
1 .063 (1.6) Min — .125 (3.2) Max
2 .063 (1.6) Min — .250 (6.4) Max
3 .063 (1.6) Min — .500 (12.7) Max
- 6 **ALTERNATE KEYING**
N NORMAL or A, B, C, D, K
- 7 **OPTIONAL ACCESSORY KIT (OMIT FOR NONE)**
02 Protective cover (2x) + mounting gasket
03 02 kit + mounting bracket + sealing screws



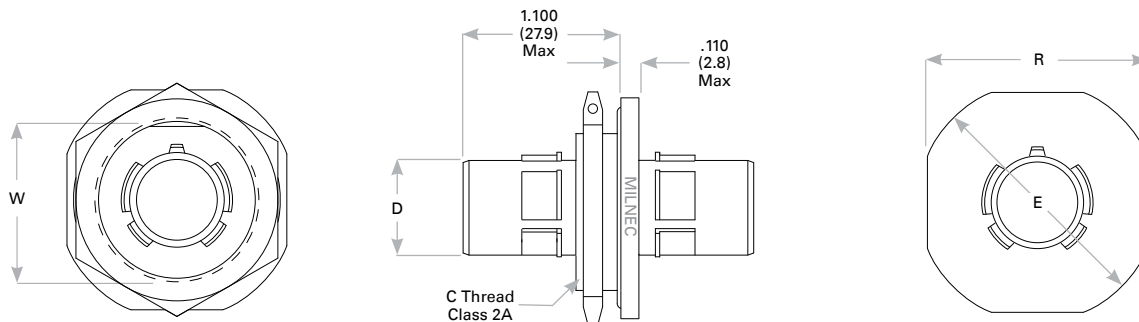
TB24 Compatibility

Compatible Brands	Mates
MIL-DTL-38999 Series IV	D38999/46, D38999/47
G & H Tech / Cooper	BL06, BLG6
Deutsch	DIV/45, DIV/46

Receptacle Dimensions

Shell Size	Military Shell Size	W	D	R	C Thread Class 2A	E
9	A	.651 (16.5)	.384 (9.8)	1.073 (27.3)	M22X1-6g	1.195 (30.4)
11	B	.942 (23.9)	.509 (12.9)	1.394 (35.4)	M25X1-6g	1.520 (38.6)
13	C	1.066 (27.1)	.634 (16.1)	1.520 (38.6)	M28X1-6g	1.642 (41.7)
15	D	1.191 (30.3)	.759 (19.3)	1.642 (41.7)	M31X1-6g	1.768 (44.9)
17	E	1.321 (33.6)	.885 (22.5)	1.799 (45.7)	M34X1-6g	1.957 (49.7)
19	F	1.441 (36.6)	1.009 (25.6)	1.909 (48.5)	M38X1-6g	2.035 (51.7)
21	G	1.566 (39.8)	1.134 (28.8)	2.035 (51.7)	M41X1-6g	2.157 (54.8)
23	H	1.691 (43.0)	1.259 (32.0)	2.157 (54.8)	M44X1-6g	2.283 (58.0)
25	J	1.816 (46.1)	1.384 (35.2)	2.283 (58.0)	M47X1-6g	2.409 (61.2)

Dimensions are in inches (mm). ‡ Max panel thickness will ensure proper coupling clearance.



Rev. 2203

Strain Relief Backshells

TB Series • MIL-DTL-38999 Series IV Style Accessories



TBB2 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48

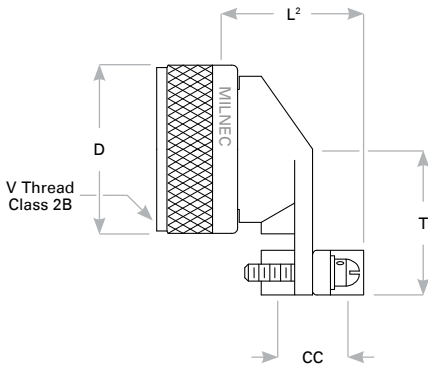
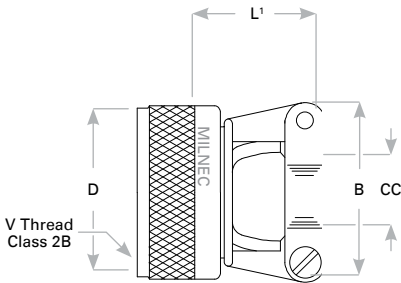
TBB2 - S - 15 N

- 1
- 2
- 3
- 4
- 1
- BASIC PART NUMBER
- TBB2
- Straight strain relief backshell
- TBB4
- 90° strain relief backshell
- 2
- COUPLING STYLE
- N
- Non-self-locking coupling
- S
- Self-locking coupling
- 3
- SHELL SIZE
- See Strain Relief Dimensions table below
- 4
- MATERIAL & FINISH
- N
- Aluminum, electroless nickel
- W
- Aluminum, olive drab cadmium
- K
- Stainless steel, passivated
- G
- Aluminum, electroless nickel (space-grade)
- M
- Composite, electroless nickel (self-locking only)
- J
- Composite, olive drab cadmium (self-locking only)

Strain Relief Dimensions

Shell Size	Military Shell Size	D	L ¹	L ²	T	B	V Thread Class 2B	CC Cable Clearance	
								Min	Max
9	A	.858 (21.8)	.910 (23.1)	1.200 (30.5)	1.000 (25.4)	.850 (21.6)	M12 X 1-6H	.098 (2.5)	.234 (5.9)
11	B	.984 (25.0)	.910 (23.1)	1.200 (30.5)	1.100 (27.9)	.900 (22.9)	M15 X 1-6H	.153 (3.9)	.234 (5.9)
13	C	1.157 (29.4)	1.010 (25.7)	1.400 (35.6)	1.100 (27.9)	1.100 (27.9)	M18 X 1-6H	.190 (4.8)	.328 (8.3)
15	D	1.279 (32.5)	1.060 (26.9)	1.450 (36.8)	1.250 (31.8)	1.150 (29.2)	M22 X 1-6H	.260 (6.6)	.457 (11.6)
17	E	1.406 (35.7)	1.160 (29.5)	1.600 (40.6)	1.300 (33.0)	1.300 (33.0)	M25 X 1-6H	.283 (7.2)	.614 (15.6)
19	F	1.516 (38.5)	1.410 (35.8)	1.700 (43.2)	1.350 (34.3)	1.500 (38.1)	M28 X 1-6H	.325 (8.3)	.634 (16.1)
21	G	1.642 (41.7)	1.510 (38.4)	1.850 (47.0)	1.600 (40.6)	1.600 (40.6)	M31 X 1-6H	.343 (8.7)	.698 (17.7)
23	H	1.768 (44.9)	1.660 (42.2)	1.950 (49.5)	1.750 (44.5)	1.700 (43.2)	M34 X 1-6H	.381 (9.7)	.823 (20.9)
25	J	1.889 (48.0)	1.760 (44.7)	2.100 (53.3)	1.850 (47.0)	1.800 (45.7)	M37 X 1-6H	.418 (10.6)	.853 (21.7)

Dimensions are in inches (mm).



Rev. 2203

TBC2 - 15 M

1 2 3

1 BASIC PART NUMBER

TBC2 Straight EMI/RFI env. backshell (self-locking)**TBC4** 90° EMI/RFI env. backshell (self-locking)

2 SHELL SIZE

See Backshell Dimensions table below

3 MATERIAL & FINISH

M Composite, electroless nickel**J** Composite, olive drab cadmium

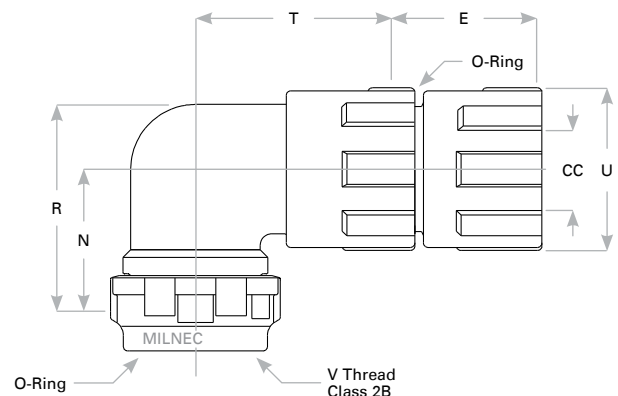
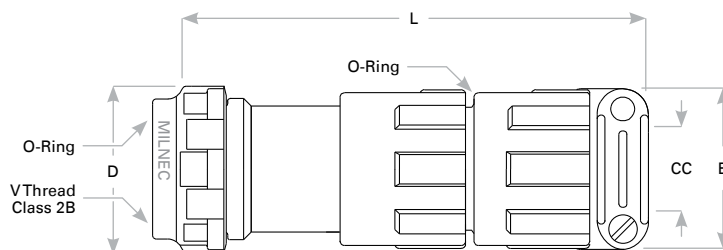
TBC2 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48

Backshell Dimensions

Shell Size	Military Shell Size	V Thread Class 2B	D	B	R	N	T	E	U	L	CC Cable Clearance	
											Min	Max
9	A	M12 X 1-6H	.858 (21.8)	.940 (23.9)	.880 (22.4)	.690 (17.5)	1.060 (26.9)	.750 (19.1)	.800 (20.3)	2.500 (63.5)	.130 (3.3)	.250 (6.4)
11	B	M15 X 1-6H	.984 (25.0)	1.170 (29.7)	1.000 (25.4)	.750 (19.1)	1.130 (28.7)	.750 (19.1)	.930 (23.6)	2.500 (63.5)	.250 (6.4)	.380 (9.7)
13	C	M18 X 1-6H	1.157 (29.4)	1.280 (32.5)	1.130 (28.7)	.810 (20.6)	1.190 (30.2)	.750 (19.1)	1.060 (26.9)	2.500 (63.5)	.310 (7.9)	.440 (11.2)
15	D	M22 X 1-6H	1.279 (32.5)	1.410 (35.8)	1.310 (33.3)	.880 (22.4)	1.250 (31.8)	.750 (19.1)	1.220 (31.0)	2.500 (63.5)	.500 (12.7)	.630 (15.9)
17	E	M25 X 1-6H	1.406 (35.7)	1.500 (38.1)	1.380 (35.1)	.940 (23.9)	1.310 (33.3)	.750 (19.1)	1.240 (31.5)	2.500 (63.5)	.560 (14.2)	.690 (17.5)
19	F	M28 X 1-6H	1.516 (38.5)	1.560 (39.6)	1.440 (36.6)	.970 (24.6)	1.340 (34.0)	.750 (19.1)	1.370 (34.8)	2.500 (63.5)	.630 (16.0)	.750 (19.1)
21	H	M31 X 1-6H	1.642 (41.7)	1.690 (42.9)	1.630 (41.4)	1.060 (26.9)	1.440 (36.6)	.750 (19.1)	1.490 (37.8)	2.500 (63.5)	.750 (19.1)	.880 (22.2)
23	G	M34 X 1-6H	1.768 (44.9)	1.810 (46.0)	1.750 (44.5)	1.130 (28.7)	1.500 (38.1)	.750 (19.1)	1.620 (41.1)	2.500 (63.5)	.880 (22.4)	1.000 (25.4)
25	J	M37 X 1-6H	1.889 (48.0)	1.910 (48.5)	1.880 (47.8)	1.190 (30.2)	1.560 (39.6)	.750 (19.1)	1.680 (42.7)	2.500 (63.5)	1.000 (25.4)	1.130 (28.6)

Dimensions are in inches (mm).



Rev. 2203

Straight EMI/RFI Env. Backshell

TB Series • MIL-DTL-38999 Series IV Style Accessories



TBR2 - 035 N

- 1 BASIC PART NUMBER
- 2 DASH NO.
- 3 MATERIAL & FINISH

TBR2 Straight EMI/RFI environmental backshell

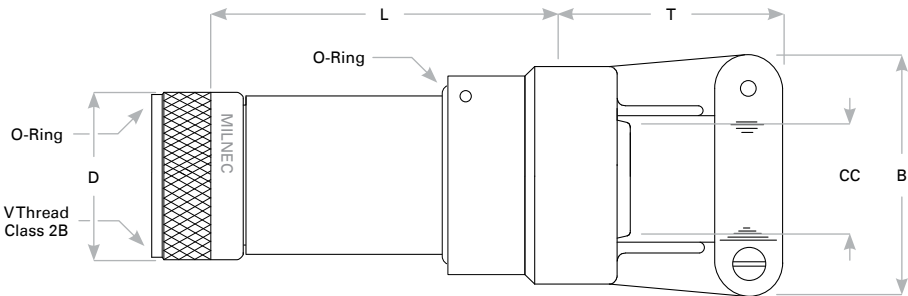
See Backshell Dimensions table below

- N Aluminum, electroless nickel
- W Aluminum, olive drab cadmium
- G Aluminum, electroless nickel (space-grade)
- K* Stainless steel, passivated
- L* Stainless steel, electrodeposited nickel

* Please consult an authorized distributor for lead time and minimum quantity requirements.

TBR2 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48



Backshell Dimensions

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
								Min	Max
001	9	A	M12 X 1-6H	.750 (19.1)	1.250 (31.8)	.781 (19.8)	1.500 (38.1)	.062 (1.6)	.125 (3.2)
002	9	A	M12 X 1-6H	.750 (19.1)	1.250 (31.8)	.781 (19.8)	2.500 (63.5)	.062 (1.6)	.125 (3.2)
003	9	A	M12 X 1-6H	.750 (19.1)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
004	9	A	M12 X 1-6H	.750 (19.1)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
005	11	B	M15 X 1-6H	.850 (21.6)	1.250 (31.8)	.781 (19.8)	1.500 (38.1)	.062 (1.6)	.125 (3.2)
006	11	B	M15 X 1-6H	.850 (21.6)	1.250 (31.8)	.781 (19.8)	2.500 (63.5)	.062 (1.6)	.125 (3.2)
007	11	B	M15 X 1-6H	.850 (21.6)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
008	11	B	M15 X 1-6H	.850 (21.6)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
009	11	B	M15 X 1-6H	.850 (21.6)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
010	11	B	M15 X 1-6H	.850 (21.6)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)

Dimensions are in inches (mm).

(Continued on next page)

Rev. 2203

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
								Min	Max
011	13	C	M18 X 1-6H	1.000 (25.4)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
012	13	C	M18 X 1-6H	1.000 (25.4)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
013	13	C	M18 X 1-6H	1.000 (25.4)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
014	13	C	M18 X 1-6H	1.000 (25.4)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
015	13	C	M18 X 1-6H	1.000 (25.4)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
016	13	C	M18 X 1-6H	1.000 (25.4)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
017	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
018	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
019	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	.969 (24.6)	3.500 (88.9)	.125 (3.2)	.250 (6.4)
020	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
021	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
022	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
023	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
024	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
025	15	D	M22 X 1-6H	1.150 (29.2)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
026	15	D	M22 X 1-6H	1.150 (29.2)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
027	15	D	M22 X 1-6H	1.150 (29.2)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
028	15	D	M22 X 1-6H	1.150 (29.2)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
029	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	.969 (24.6)	1.500 (38.1)	.125 (3.2)	.250 (6.4)
030	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	.969 (24.6)	2.500 (63.5)	.125 (3.2)	.250 (6.4)
031	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	.969 (24.6)	3.500 (88.9)	.125 (3.2)	.250 (6.4)
032	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
033	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
034	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
035	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
036	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
037	17	E	M25 X 1-6H	1.250 (31.8)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
038	17	E	M25 X 1-6H	1.250 (31.8)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
039	17	E	M25 X 1-6H	1.250 (31.8)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
040	17	E	M25 X 1-6H	1.250 (31.8)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
041	17	E	M25 X 1-6H	1.250 (31.8)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
042	17	E	M25 X 1-6H	1.250 (31.8)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
043	17	E	M25 X 1-6H	1.250 (31.8)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
044	19	F	M28 X 1-6H	1.400 (35.6)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
045	19	F	M28 X 1-6H	1.400 (35.6)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
046	19	F	M28 X 1-6H	1.400 (35.6)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
047	19	F	M28 X 1-6H	1.400 (35.6)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
048	19	F	M28 X 1-6H	1.400 (35.6)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
049	19	F	M28 X 1-6H	1.400 (35.6)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
050	19	F	M28 X 1-6H	1.400 (35.6)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
051	19	F	M28 X 1-6H	1.400 (35.6)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
052	19	F	M28 X 1-6H	1.400 (35.6)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
053	19	F	M28 X 1-6H	1.400 (35.6)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
054	19	F	M28 X 1-6H	1.400 (35.6)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
055	19	F	M28 X 1-6H	1.400 (35.6)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
056	19	F	M28 X 1-6H	1.400 (35.6)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
057	19	F	M28 X 1-6H	1.400 (35.6)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
058	19	F	M28 X 1-6H	1.400 (35.6)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)

Dimensions are in inches (mm).

(Continued on next page)

Rev. 2203

Straight EMI/RFI Env. Backshell

TB Series • MIL-DTL-38999 Series IV Style Accessories

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
								Min	Max
059	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
060	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
061	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
062	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.062 (27.0)	4.500 (114.3)	.250 (6.4)	.375 (9.5)
063	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
064	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
065	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
066	21	G	M31 X 1-6H	1.550 (39.4)	1.250 (31.8)	1.156 (29.4)	4.500 (114.3)	.375 (9.5)	.500 (12.7)
067	21	G	M31 X 1-6H	1.550 (39.4)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
068	21	G	M31 X 1-6H	1.550 (39.4)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
069	21	G	M31 X 1-6H	1.550 (39.4)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
070	21	G	M31 X 1-6H	1.550 (39.4)	1.312 (33.3)	1.250 (31.8)	4.500 (114.3)	.500 (12.7)	.625 (15.9)
071	21	G	M31 X 1-6H	1.550 (39.4)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
072	21	G	M31 X 1-6H	1.550 (39.4)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
073	21	G	M31 X 1-6H	1.550 (39.4)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
074	21	G	M31 X 1-6H	1.550 (39.4)	1.375 (34.9)	1.375 (34.9)	4.500 (114.3)	.625 (15.9)	.750 (19.1)
075	21	G	M31 X 1-6H	1.550 (39.4)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
076	21	G	M31 X 1-6H	1.550 (39.4)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
077	21	G	M31 X 1-6H	1.550 (39.4)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)
078	21	G	M31 X 1-6H	1.550 (39.4)	1.500 (38.1)	1.500 (38.1)	4.500 (114.3)	.750 (19.1)	.875 (22.2)
079	21	G	M31 X 1-6H	1.550 (39.4)	1.625 (41.3)	1.625 (41.3)	1.500 (38.1)	.875 (22.2)	1.000 (25.4)
080	21	G	M31 X 1-6H	1.550 (39.4)	1.625 (41.3)	1.625 (41.3)	2.500 (63.5)	.875 (22.2)	1.000 (25.4)
081	21	G	M31 X 1-6H	1.550 (39.4)	1.625 (41.3)	1.625 (41.3)	3.500 (88.9)	.875 (22.2)	1.000 (25.4)
082	21	G	M31 X 1-6H	1.550 (39.4)	1.625 (41.3)	1.625 (41.3)	4.500 (114.3)	.875 (22.2)	1.000 (25.4)
083	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.062 (27.0)	1.500 (38.1)	.250 (6.4)	.375 (9.5)
084	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.062 (27.0)	2.500 (63.5)	.250 (6.4)	.375 (9.5)
085	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.062 (27.0)	3.500 (88.9)	.250 (6.4)	.375 (9.5)
086	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.062 (27.0)	4.500 (114.3)	.250 (6.4)	.375 (9.5)
087	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
088	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
089	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
090	23	H	M34 X 1-6H	1.650 (41.9)	1.250 (31.8)	1.156 (29.4)	4.500 (114.3)	.375 (9.5)	.500 (12.7)
091	23	H	M34 X 1-6H	1.650 (41.9)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
092	23	H	M34 X 1-6H	1.650 (41.9)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
093	23	H	M34 X 1-6H	1.650 (41.9)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
094	23	H	M34 X 1-6H	1.650 (41.9)	1.312 (33.3)	1.250 (31.8)	4.500 (114.3)	.500 (12.7)	.625 (15.9)
095	23	H	M34 X 1-6H	1.650 (41.9)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
096	23	H	M34 X 1-6H	1.650 (41.9)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
097	23	H	M34 X 1-6H	1.650 (41.9)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
098	23	H	M34 X 1-6H	1.650 (41.9)	1.375 (34.9)	1.375 (34.9)	4.500 (114.3)	.625 (15.9)	.750 (19.1)
099	23	H	M34 X 1-6H	1.650 (41.9)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
100	23	H	M34 X 1-6H	1.650 (41.9)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
101	23	H	M34 X 1-6H	1.650 (41.9)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)
102	23	H	M34 X 1-6H	1.650 (41.9)	1.500 (38.1)	1.500 (38.1)	4.500 (114.3)	.750 (19.1)	.875 (22.2)
103	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.625 (41.3)	1.500 (38.1)	.875 (22.2)	1.000 (25.4)
104	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.625 (41.3)	2.500 (63.5)	.875 (22.2)	1.000 (25.4)
105	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.625 (41.3)	3.500 (88.9)	.875 (22.2)	1.000 (25.4)

Dimensions are in inches (mm).

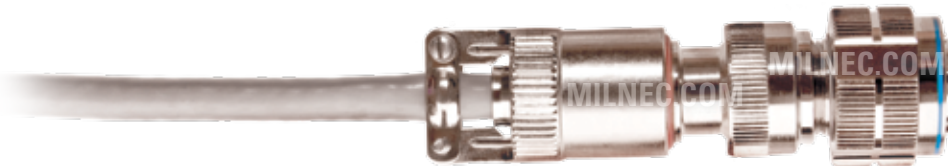
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Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	D	T	B	L	CC Cable Clearance	
								Min	Max
106	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.625 (41.3)	4.500 (114.3)	.875 (22.2)	1.000 (25.4)
107	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.750 (44.5)	1.500 (38.1)	1.000 (25.4)	1.125 (28.6)
108	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.750 (44.5)	2.500 (63.5)	1.000 (25.4)	1.125 (28.6)
109	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.750 (44.5)	3.500 (88.9)	1.000 (25.4)	1.125 (28.6)
110	23	H	M34 X 1-6H	1.650 (41.9)	1.625 (41.3)	1.750 (44.5)	4.500 (114.3)	1.000 (25.4)	1.125 (28.6)
111	25	J	M37 X 1-6H	1.850 (47.0)	1.250 (31.8)	1.156 (29.4)	1.500 (38.1)	.375 (9.5)	.500 (12.7)
112	25	J	M37 X 1-6H	1.850 (47.0)	1.250 (31.8)	1.156 (29.4)	2.500 (63.5)	.375 (9.5)	.500 (12.7)
113	25	J	M37 X 1-6H	1.850 (47.0)	1.250 (31.8)	1.156 (29.4)	3.500 (88.9)	.375 (9.5)	.500 (12.7)
114	25	J	M37 X 1-6H	1.850 (47.0)	1.250 (31.8)	1.156 (29.4)	4.500 (114.3)	.375 (9.5)	.500 (12.7)
115	25	J	M37 X 1-6H	1.850 (47.0)	1.312 (33.3)	1.250 (31.8)	1.500 (38.1)	.500 (12.7)	.625 (15.9)
116	25	J	M37 X 1-6H	1.850 (47.0)	1.312 (33.3)	1.250 (31.8)	2.500 (63.5)	.500 (12.7)	.625 (15.9)
117	25	J	M37 X 1-6H	1.850 (47.0)	1.312 (33.3)	1.250 (31.8)	3.500 (88.9)	.500 (12.7)	.625 (15.9)
118	25	J	M37 X 1-6H	1.850 (47.0)	1.312 (33.3)	1.250 (31.8)	4.500 (114.3)	.500 (12.7)	.625 (15.9)
119	25	J	M37 X 1-6H	1.850 (47.0)	1.375 (34.9)	1.375 (34.9)	1.500 (38.1)	.625 (15.9)	.750 (19.1)
120	25	J	M37 X 1-6H	1.850 (47.0)	1.375 (34.9)	1.375 (34.9)	2.500 (63.5)	.625 (15.9)	.750 (19.1)
121	25	J	M37 X 1-6H	1.850 (47.0)	1.375 (34.9)	1.375 (34.9)	3.500 (88.9)	.625 (15.9)	.750 (19.1)
122	25	J	M37 X 1-6H	1.850 (47.0)	1.375 (34.9)	1.375 (34.9)	4.500 (114.3)	.625 (15.9)	.750 (19.1)
123	25	J	M37 X 1-6H	1.850 (47.0)	1.500 (38.1)	1.500 (38.1)	1.500 (38.1)	.750 (19.1)	.875 (22.2)
124	25	J	M37 X 1-6H	1.850 (47.0)	1.500 (38.1)	1.500 (38.1)	2.500 (63.5)	.750 (19.1)	.875 (22.2)
125	25	J	M37 X 1-6H	1.850 (47.0)	1.500 (38.1)	1.500 (38.1)	3.500 (88.9)	.750 (19.1)	.875 (22.2)
126	25	J	M37 X 1-6H	1.850 (47.0)	1.500 (38.1)	1.500 (38.1)	4.500 (114.3)	.750 (19.1)	.875 (22.2)
127	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.625 (41.3)	1.500 (38.1)	.875 (22.2)	1.000 (25.4)
128	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.625 (41.3)	2.500 (63.5)	.875 (22.2)	1.000 (25.4)
129	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.625 (41.3)	3.500 (88.9)	.875 (22.2)	1.000 (25.4)
130	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.625 (41.3)	4.500 (114.3)	.875 (22.2)	1.000 (25.4)
131	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.750 (44.5)	1.500 (38.1)	1.000 (25.4)	1.125 (28.6)
132	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.750 (44.5)	2.500 (63.5)	1.000 (25.4)	1.125 (28.6)
133	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.750 (44.5)	3.500 (88.9)	1.000 (25.4)	1.125 (28.6)
134	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.750 (44.5)	4.500 (114.3)	1.000 (25.4)	1.125 (28.6)
135	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.875 (47.6)	1.500 (38.1)	1.125 (28.6)	1.250 (31.8)
136	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.875 (47.6)	2.500 (63.5)	1.125 (28.6)	1.250 (31.8)
137	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.875 (47.6)	3.500 (88.9)	1.125 (28.6)	1.250 (31.8)
138	25	J	M37 X 1-6H	1.850 (47.0)	1.625 (41.3)	1.875 (47.6)	4.500 (114.3)	1.125 (28.6)	1.250 (31.8)

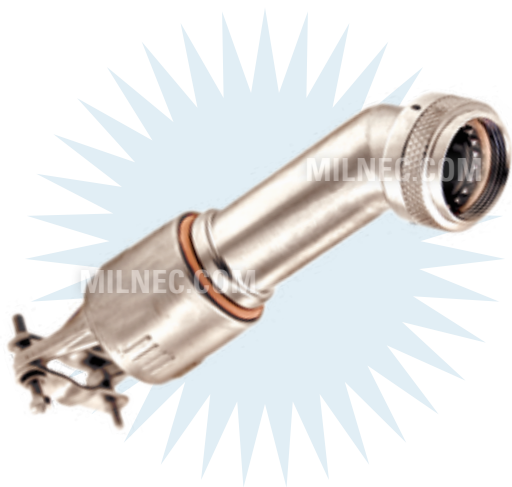
Dimensions are in inches (mm).

TB



45° EMI/RFI Env. Backshell

TB Series • MIL-DTL-38999 Series IV Style Accessories



TBR3 - 015 N

- 1
- 2
- 3
- 1
- 2
- 3

BASIC PART NUMBER
TBR3 45° EMI/RFI environmental backshell

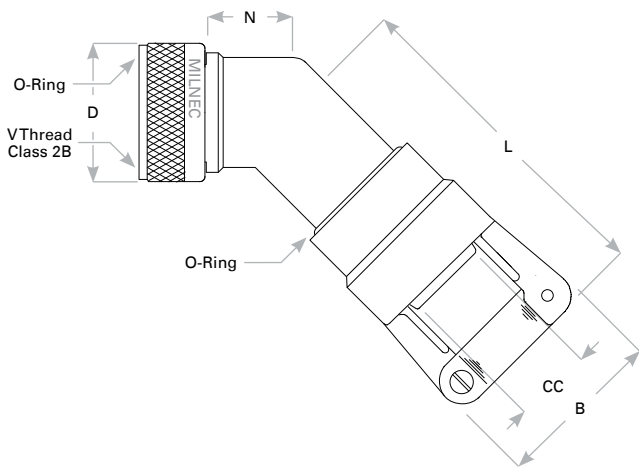
DASH NO.
See Backshell Dimensions table below

MATERIAL & FINISH
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
K* Stainless steel, passivated
L* Stainless steel, electrodeposited nickel

* Please consult an authorized distributor for lead time and minimum quantity requirements.

TBR3 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48



Backshell Dimensions

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
								Min	Max
001	9	A	M12 X 1-6H	.398 (10.1)	.750 (19.1)	.800 (20.3)	3.088 (78.4)	.062 (1.6)	.125 (3.2)
002	9	A	M12 X 1-6H	.398 (10.1)	.750 (19.1)	1.000 (25.4)	3.088 (78.4)	.125 (3.2)	.250 (6.4)
003	11	B	M15 X 1-6H	.458 (11.6)	.850 (21.6)	.800 (20.3)	3.148 (80.0)	.062 (1.6)	.125 (3.2)
004	11	B	M15 X 1-6H	.458 (11.6)	.850 (21.6)	1.000 (25.4)	3.148 (80.0)	.125 (3.2)	.250 (6.4)
005	11	B	M15 X 1-6H	.458 (11.6)	.850 (21.6)	1.100 (27.9)	3.148 (80.0)	.250 (6.4)	.375 (9.5)
006	13	C	M18 X 1-6H	.518 (13.2)	1.000 (25.4)	1.000 (25.4)	3.208 (81.5)	.125 (3.2)	.250 (6.4)
007	13	C	M18 X 1-6H	.518 (13.2)	1.000 (25.4)	1.100 (27.9)	3.208 (81.5)	.250 (6.4)	.375 (9.5)
008	13	C	M18 X 1-6H	.518 (13.2)	1.000 (25.4)	1.200 (30.5)	3.208 (81.5)	.375 (9.5)	.500 (12.7)
009	15	D	M22 X 1-6H	.588 (14.9)	1.150 (29.2)	1.000 (25.4)	3.298 (83.8)	.125 (3.2)	.250 (6.4)
010	15	D	M22 X 1-6H	.588 (14.9)	1.150 (29.2)	1.100 (27.9)	3.298 (83.8)	.250 (6.4)	.375 (9.5)

Dimensions are in inches (mm). (Continued on next page)

Rev. 2203

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
								Min	Max
011	15	D	M22 X 1-6H	.588 (14.9)	1.150 (29.2)	1.200 (30.5)	3.298 (83.8)	.375 (9.5)	.500 (12.7)
012	15	D	M22 X 1-6H	.588 (14.9)	1.150 (29.2)	1.250 (31.8)	3.298 (83.8)	.500 (12.7)	.625 (15.9)
013	17	E	M25 X 1-6H	.678 (17.2)	1.250 (31.8)	1.000 (25.4)	3.408 (86.6)	.125 (3.2)	.250 (6.4)
014	17	E	M25 X 1-6H	.678 (17.2)	1.250 (31.8)	1.100 (27.9)	3.408 (86.6)	.250 (6.4)	.375 (9.5)
015	17	E	M25 X 1-6H	.678 (17.2)	1.250 (31.8)	1.200 (30.5)	3.408 (86.6)	.375 (9.5)	.500 (12.7)
016	17	E	M25 X 1-6H	.678 (17.2)	1.250 (31.8)	1.250 (31.8)	3.408 (86.6)	.500 (12.7)	.625 (15.9)
017	17	E	M25 X 1-6H	.678 (17.2)	1.250 (31.8)	1.400 (35.6)	3.408 (86.6)	.625 (15.9)	.750 (19.1)
018	19	F	M28 X 1-6H	.868 (22.0)	1.400 (35.6)	1.100 (27.9)	3.598 (91.4)	.250 (6.4)	.375 (9.5)
019	19	F	M28 X 1-6H	.868 (22.0)	1.400 (35.6)	1.200 (30.5)	3.598 (91.4)	.375 (9.5)	.500 (12.7)
020	19	F	M28 X 1-6H	.868 (22.0)	1.400 (35.6)	1.250 (31.8)	3.598 (91.4)	.500 (12.7)	.625 (15.9)
021	19	F	M28 X 1-6H	.868 (22.0)	1.400 (35.6)	1.400 (35.6)	3.598 (91.4)	.625 (15.9)	.750 (19.1)
022	19	F	M28 X 1-6H	.868 (22.0)	1.400 (35.6)	1.500 (38.1)	3.598 (91.4)	.750 (19.1)	.875 (22.2)
023	21	G	M31 X 1-6H	.868 (22.0)	1.550 (39.4)	1.100 (27.9)	3.598 (91.4)	.250 (6.4)	.375 (9.5)
024	21	G	M31 X 1-6H	.868 (22.0)	1.550 (39.4)	1.200 (30.5)	3.598 (91.4)	.375 (9.5)	.500 (12.7)
025	21	G	M31 X 1-6H	.868 (22.0)	1.550 (39.4)	1.250 (31.8)	3.598 (91.4)	.500 (12.7)	.625 (15.9)
026	21	G	M31 X 1-6H	.868 (22.0)	1.550 (39.4)	1.400 (35.6)	3.598 (91.4)	.625 (15.9)	.750 (19.1)
027	21	G	M31 X 1-6H	.868 (22.0)	1.550 (39.4)	1.500 (38.1)	3.598 (91.4)	.750 (19.1)	.875 (22.2)
028	21	G	M31 X 1-6H	.868 (22.0)	1.550 (39.4)	1.650 (41.9)	3.598 (91.4)	.875 (22.2)	1.000 (25.4)
029	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.100 (27.9)	3.748 (95.2)	.250 (6.4)	.375 (9.5)
030	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.200 (30.5)	3.748 (95.2)	.375 (9.5)	.500 (12.7)
031	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.250 (31.8)	3.748 (95.2)	.500 (12.7)	.625 (15.9)
032	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.400 (35.6)	3.748 (95.2)	.625 (15.9)	.750 (19.1)
033	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.500 (38.1)	3.748 (95.2)	.750 (19.1)	.875 (22.2)
034	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.650 (41.9)	3.748 (95.2)	.875 (22.2)	1.000 (25.4)
035	23	H	M34 X 1-6H	.958 (24.3)	1.650 (41.9)	1.750 (44.5)	3.748 (95.2)	1.000 (25.4)	1.125 (28.6)
036	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.200 (30.5)	3.748 (95.2)	.375 (9.5)	.500 (12.7)
037	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.250 (31.8)	3.748 (95.2)	.500 (12.7)	.625 (15.9)
038	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.400 (35.6)	3.748 (95.2)	.625 (15.9)	.750 (19.1)
039	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.500 (38.1)	3.748 (95.2)	.750 (19.1)	.875 (22.2)
040	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.650 (41.9)	3.748 (95.2)	.875 (22.2)	1.000 (25.4)
041	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.750 (44.5)	3.748 (95.2)	1.000 (25.4)	1.125 (28.6)
042	25	J	M37 X 1-6H	.958 (24.3)	1.850 (47.0)	1.900 (48.3)	3.748 (95.2)	1.125 (28.6)	1.250 (31.8)

Dimensions are in inches (mm).



Rev. 2203

90° EMI/RFI Env. Backshell

TB Series • MIL-DTL-38999 Series IV Style Accessories



TBR4 - 015 N

- 1
- 2
- 3
- 1
- 2
- 3

BASIC PART NUMBER

TBR4 90° EMI/RFI environmental backshell

DASH NO.

See Backshell Dimensions table below

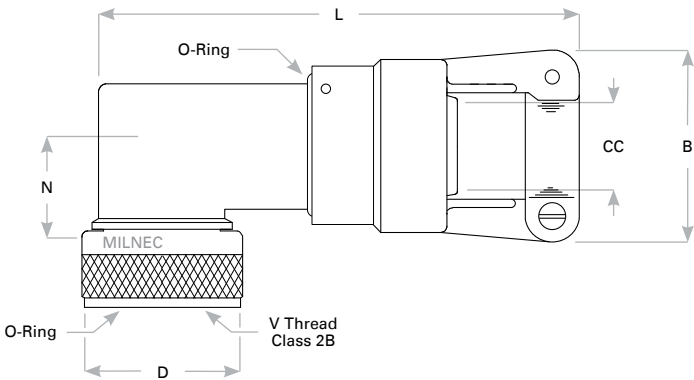
MATERIAL & FINISH

- N
- W
- G
- K*
- L*
- Aluminum, electroless nickel
- Aluminum, olive drab cadmium
- Aluminum, electroless nickel (space-grade)
- Stainless steel, passivated
- Stainless steel, electrodeposited nickel

* Please consult an authorized distributor for lead time and minimum quantity requirements.

TBR4 Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48



Backshell Dimensions

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
								Min	Max
001	9	A	M12 X 1-6H	.438 (11.1)	.750 (19.1)	.800 (20.3)	3.141 (79.8)	.062 (1.6)	.125 (3.2)
002	9	A	M12 X 1-6H	.438 (11.1)	.750 (19.1)	1.000 (25.4)	3.141 (79.8)	.125 (3.2)	.250 (6.4)
003	11	B	M15 X 1-6H	.533 (13.5)	.850 (21.6)	.800 (20.3)	3.261 (82.8)	.062 (1.6)	.125 (3.2)
004	11	B	M15 X 1-6H	.533 (13.5)	.850 (21.6)	1.000 (25.4)	3.261 (82.8)	.125 (3.2)	.250 (6.4)
005	11	B	M15 X 1-6H	.533 (13.5)	.850 (21.6)	1.100 (27.9)	3.261 (82.8)	.250 (6.4)	.375 (9.5)
006	13	C	M18 X 1-6H	.548 (13.9)	1.000 (25.4)	1.000 (25.4)	3.281 (83.3)	.125 (3.2)	.250 (6.4)
007	13	C	M18 X 1-6H	.548 (13.9)	1.000 (25.4)	1.100 (27.9)	3.281 (83.3)	.250 (6.4)	.375 (9.5)
008	13	C	M18 X 1-6H	.548 (13.9)	1.000 (25.4)	1.200 (30.5)	3.281 (83.3)	.375 (9.5)	.500 (12.7)
009	15	D	M22 X 1-6H	.638 (16.2)	1.150 (29.2)	1.000 (25.4)	3.351 (85.1)	.125 (3.2)	.250 (6.4)
010	15	D	M22 X 1-6H	.638 (16.2)	1.150 (29.2)	1.100 (27.9)	3.351 (85.1)	.250 (6.4)	.375 (9.5)

Dimensions are in inches (mm).

(Continued on next page)

Rev. 2203

Backshell Dimensions (Continued from previous page)

Dash No.	Shell Size	Military Shell Size	V Thread Class 2B	N	D	B	L	CC Cable Clearance	
								Min	Max
011	15	D	M22 X 1-6H	.638 (16.2)	1.150 (29.2)	1.200 (30.5)	3.351 (85.1)	.375 (9.5)	.500 (12.7)
012	15	D	M22 X 1-6H	.638 (16.2)	1.150 (29.2)	1.250 (31.8)	3.351 (85.1)	.500 (12.7)	.625 (15.9)
013	17	E	M25 X 1-6H	.823 (20.9)	1.250 (31.8)	1.000 (25.4)	3.441 (87.4)	.125 (3.2)	.250 (6.4)
014	17	E	M25 X 1-6H	.823 (20.9)	1.250 (31.8)	1.100 (27.9)	3.441 (87.4)	.250 (6.4)	.375 (9.5)
015	17	E	M25 X 1-6H	.823 (20.9)	1.250 (31.8)	1.200 (30.5)	3.441 (87.4)	.375 (9.5)	.500 (12.7)
016	17	E	M25 X 1-6H	.823 (20.9)	1.250 (31.8)	1.250 (31.8)	3.441 (87.4)	.500 (12.7)	.625 (15.9)
017	17	E	M25 X 1-6H	.823 (20.9)	1.250 (31.8)	1.400 (35.6)	3.441 (87.4)	.625 (15.9)	.750 (19.1)
018	19	F	M28 X 1-6H	.913 (23.2)	1.400 (35.6)	1.100 (27.9)	3.611 (91.7)	.250 (6.4)	.375 (9.5)
019	19	F	M28 X 1-6H	.913 (23.2)	1.400 (35.6)	1.200 (30.5)	3.611 (91.7)	.375 (9.5)	.500 (12.7)
020	19	F	M28 X 1-6H	.913 (23.2)	1.400 (35.6)	1.250 (31.8)	3.611 (91.7)	.500 (12.7)	.625 (15.9)
021	19	F	M28 X 1-6H	.913 (23.2)	1.400 (35.6)	1.400 (35.6)	3.611 (91.7)	.625 (15.9)	.750 (19.1)
022	19	F	M28 X 1-6H	.913 (23.2)	1.400 (35.6)	1.500 (38.1)	3.611 (91.7)	.750 (19.1)	.875 (22.2)
023	21	G	M31 X 1-6H	.913 (23.2)	1.550 (39.4)	1.100 (27.9)	3.611 (91.7)	.250 (6.4)	.375 (9.5)
024	21	G	M31 X 1-6H	.913 (23.2)	1.550 (39.4)	1.200 (30.5)	3.611 (91.7)	.375 (9.5)	.500 (12.7)
025	21	G	M31 X 1-6H	.913 (23.2)	1.550 (39.4)	1.250 (31.8)	3.611 (91.7)	.500 (12.7)	.625 (15.9)
026	21	G	M31 X 1-6H	.913 (23.2)	1.550 (39.4)	1.400 (35.6)	3.611 (91.7)	.625 (15.9)	.750 (19.1)
027	21	G	M31 X 1-6H	.913 (23.2)	1.550 (39.4)	1.500 (38.1)	3.611 (91.7)	.750 (19.1)	.875 (22.2)
028	21	G	M31 X 1-6H	.913 (23.2)	1.550 (39.4)	1.650 (41.9)	3.611 (91.7)	.875 (22.2)	1.000 (25.4)
029	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.100 (27.9)	3.721 (94.5)	.250 (6.4)	.375 (9.5)
030	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.200 (30.5)	3.721 (94.5)	.375 (9.5)	.500 (12.7)
031	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.250 (31.8)	3.721 (94.5)	.500 (12.7)	.625 (15.9)
032	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.400 (35.6)	3.721 (94.5)	.625 (15.9)	.750 (19.1)
033	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.500 (38.1)	3.721 (94.5)	.750 (19.1)	.875 (22.2)
034	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.650 (41.9)	3.721 (94.5)	.875 (22.2)	1.000 (25.4)
035	23	H	M34 X 1-6H	1.063 (27.0)	1.650 (41.9)	1.750 (44.5)	3.721 (94.5)	1.000 (25.4)	1.125 (28.6)
036	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.200 (30.5)	3.721 (94.5)	.375 (9.5)	.500 (12.7)
037	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.250 (31.8)	3.721 (94.5)	.500 (12.7)	.625 (15.9)
038	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.400 (35.6)	3.721 (94.5)	.625 (15.9)	.750 (19.1)
039	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.500 (38.1)	3.721 (94.5)	.750 (19.1)	.875 (22.2)
040	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.650 (41.9)	3.721 (94.5)	.875 (22.2)	1.000 (25.4)
041	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.750 (44.5)	3.721 (94.5)	1.000 (25.4)	1.125 (28.6)
042	25	J	M37 X 1-6H	1.063 (27.0)	1.850 (47.0)	1.900 (48.3)	3.721 (94.5)	1.125 (28.6)	1.250 (31.8)

Dimensions are in inches (mm).



Rev. 2203

Shorting Cap Backshell

TB Series • MIL-DTL-38999 Series IV Style Accessories



Optional Body Strap with Bolt Attachment

TBSC - 13 - 3 N 1

- 1

2

3

4

5
- BASIC PART NUMBER**
TBSC Shorting cap backshell

SHELL SIZE
See Backshell Dimensions table below

BACKSHELL LENGTH
Length in whole inches (1 inch = 25.4 mm)

MATERIAL & FINISH
N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)

ATTACHMENT STYLE
1 No strap attachment
2 Body strap with bolt attachment

TBSC Compatibility

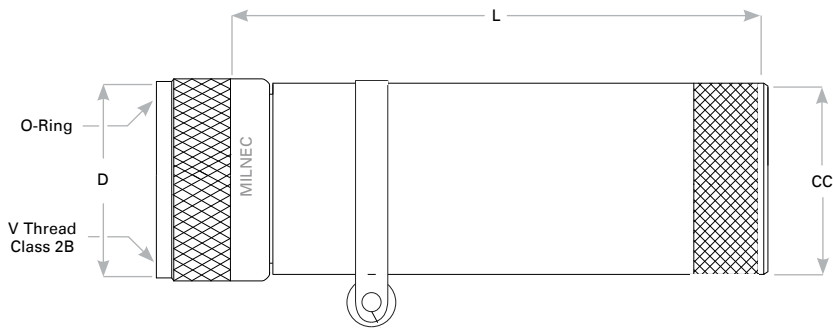
Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48

Backshell Dimensions

Shell Size	Military Shell Size	D	V Thread Class 2B	CC Internal Dia.	L
9	A	.600 (15.2)	M12 X 1-6H	.250 (6.4)	
11	B	.717 (18.2)	M15 X 1-6H	.375 (9.5)	
13	C	.834 (21.2)	M18 X 1-6H	.500 (12.7)	
15	D	.990 (25.2)	M22 X 1-6H	.625 (15.9)	
17	E	1.107 (28.1)	M25 X 1-6H	.750 (19.1)	
19	F	1.224 (31.1)	M28 X 1-6H	.812 (20.6)	
21	G	1.341 (34.1)	M31 X 1-6H	.938 (23.8)	
23	H	1.453 (36.9)	M34 X 1-6H	1.062 (27.0)	
25	J	1.567 (39.8)	M37 X 1-6H	1.188 (30.2)	

Dimensions are in inches (mm).

Ordered in whole inch increments
Min = 1 inch (25.4 mm)
Max = 12 inches (304.8 mm)



Rev. 2203

CUSTOM TAILORED CONNECTORS



- Complete Mil-Spec Compatibility
- Wide Variety of Materials & Finishes
- More Backshells
- Specialized Contacts
- Additional Inserts
- More Shell Options

Military Strength—COTS Flexibility

Milnec builds connectors that meet and exceed established military specifications, while also providing additional options and features unavailable under the mil-spec. These commercial off the shelf (COTS) upgrades provide the strength and reliability of military specifications with the flexibility demanded by modern designs.



Straight Shrink Boot

TB Series • MIL-DTL-38999 Series IV Style Accessories



TBK2 - 4 - 100

- 1 BASIC PART NUMBER
- 2 BOOT SIZE
- 3 MATERIAL

TBK2 Straight shrink boot

See Boot Dimensions table below

100 Halogen-free semi-flexible elastomer pre-coated with hot-melt adhesive. Material has excellent fire-safety characteristics and is especially suited for where people are confined in enclosed spaces (mass transit, aviation, vehicles, offshore, etc).

- Temp: -22° to +302°F (-30° to +150°C)
- Low-smoke index as defined by NES 711
- Low-toxicity index as defined by NES 713
- High-temp index as defined by NES 715

Environmental protection, low-profile design
A shrink boot provides complete IP67 environmental protection and strain relief. Must be used with a boot adapter.

* Please consult an authorized distributor for other high-temperature materials and adhesive options.

Boot Size Recommendations

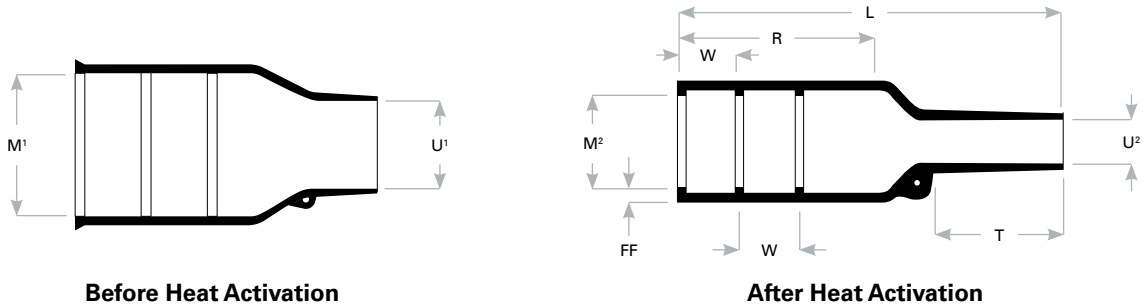
Boot Size	Cable Range		Shell Size									
	Min	Max	9	11	13	15	17	19	21	23	25	
2	.220 (5.6)	.550 (14.0)	✓	*	✓	*						
3	.230 (5.9)	.590 (15.0)				✓	*	✓	*			
4	.280 (7.1)	.710 (18.0)						*	*			
5	.330 (8.4)	.830 (21.0)						✓	✓	*	*	
6	.390 (9.9)	.980 (25.0)								✓		✓
7	.620 (15.7)	1.540 (39.0)										
8	.660 (16.8)	1.650 (42.0)										

Dimensions are in inches (mm). ✓ Recommended boot size for (TBAB) Boot Adapter, p. S-34. * Recommended boot size for (TBD2, TBD3, TBD4) EMI/RFI Banding Boot Adapter, p. S-35.

Boot Dimensions

Boot Size	M ¹	U ¹	M ²	U ²	L ¹	R ¹	T [*]	W ¹	FF [*]
2	.940 (24.0)	.550 (14.0)	.410 (10.4)	.220 (5.6)	1.500 (38.0)	.830 (21.0)	.330 (8.5)	.470 (12.0)	.060 (1.6)
3	1.180 (30.0)	.590 (15.0)	.560 (14.2)	.230 (5.9)	2.170 (55.0)	1.260 (32.0)	.450 (11.5)	.470 (12.0)	.070 (1.8)
4	1.220 (31.0)	.710 (18.0)	.710 (18.0)	.280 (7.1)	2.640 (67.0)	1.380 (35.0)	.670 (17.0)	.790 (20.0)	.070 (1.8)
5	1.420 (36.0)	.830 (21.0)	.880 (22.4)	.330 (8.4)	3.150 (80.0)	1.650 (42.0)	.760 (19.5)	.790 (20.0)	.080 (2.0)
6	1.690 (43.0)	.980 (25.0)	1.110 (28.2)	.390 (9.9)	3.900 (99.0)	2.400 (61.0)	.820 (21.0)	.790 (20.0)	.090 (2.2)
7	2.050 (52.0)	1.540 (39.0)	1.380 (35.1)	.620 (15.7)	5.120 (130.0)	2.830 (72.0)	1.530 (39.0)	.790 (20.0)	.130 (3.2)
8	2.600 (66.0)	1.650 (42.0)	1.750 (44.5)	.660 (16.8)	6.690 (170.0)	3.540 (90.0)	2.020 (51.5)	.790 (20.0)	.150 (3.8)

Dimensions are in inches (mm). ‡ Dimensions ±10% before and after heat activation. * Dimensions ±10% before heat activation, ±20% after heat activation.



Rev. 2203

TBK4 - 4 - 100

1 2 3

1 BASIC PART NUMBER

TBK4 90° shrink boot

2 BOOT SIZE

See Boot Dimensions table below

3 STANDARD MATERIAL

100

Halogen-free semi-flexible elastomer pre-coated with hot-melt adhesive. Material has excellent fire-safety characteristics and is especially suited for where people are confined in enclosed spaces (mass transit, aviation, vehicles, offshore, etc).

- Temp: -22° to +302°F (-30° to +150°C)
- Low-smoke index as defined by NES 711
- Low-toxicity index as defined by NES 713
- High-temp index as defined by NES 715

* Please consult an authorized distributor for other high-temperature materials and adhesive options.

**Angled boot for simple cable management**

A 90° shrink boot offers simple cable management, strain relief, and environmental protection. For proper installation, it must be used with a boot adapter.

Boot Size Recommendations

Boot Size	Cable Range		Shell Size								
	Min	Max	9	11	13	15	17	19	21	23	25
2	.220 (5.6)	.550 (14.0)	✓	*	✓	*	✓	*			
3	.230 (5.9)	.590 (15.0)				✓	*	✓	*		
4	.280 (7.1)	.710 (18.0)						*	*		
5	.330 (8.4)	.830 (21.0)						✓	✓	*	*
6	.390 (9.9)	.980 (25.0)								✓	✓
7	.620 (15.7)	1.540 (39.0)									
8	.660 (16.8)	1.650 (42.0)									

Dimensions are in inches (mm). ✓ Recommended boot size for (TBAB) Boot Adapter, p. S-34.

* Recommended boot size for (TBD2, TBD3, TBD4) EMI/RFI Banding Boot Adapter, p. S-35.

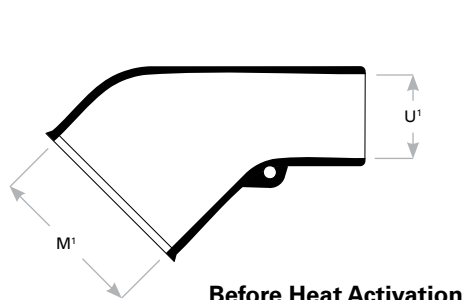
Boot Dimensions

Boot Size	M ¹	U ¹	M ²	U ²	L ¹	R ¹	T [*]	W ¹	FF [*]
2	.940 (24.0)	.550 (14.0)	.410 (10.4)	.220 (5.6)	.980 (25.0)	.980 (25.0)	.630 (16.0)	.750 (19.0)	.050 (1.3)
3	1.180 (30.0)	.590 (15.0)	.560 (14.2)	.230 (5.9)	1.260 (32.0)	1.060 (27.0)	.790 (20.0)	.790 (20.0)	.060 (1.5)
4	1.220 (31.0)	.710 (18.0)	.710 (18.0)	.280 (7.1)	1.540 (39.0)	1.220 (31.0)	.790 (20.0)	.830 (21.0)	.070 (1.8)
5	1.420 (36.0)	.830 (21.0)	.880 (22.4)	.330 (8.4)	1.810 (46.0)	1.500 (38.0)	.980 (25.0)	1.020 (26.0)	.070 (1.8)
6	1.690 (43.0)	.980 (25.0)	1.110 (28.2)	.390 (9.9)	2.171 (55.0)	1.770 (45.0)	1.180 (30.0)	1.180 (30.0)	.080 (2.0)
7	2.050 (52.0)	1.540 (39.0)	1.380 (35.1)	.620 (15.7)	3.150 (80.0)	2.130 (54.0)	1.770 (45.0)	1.380 (35.0)	.130 (3.3)
8	2.600 (66.0)	1.650 (42.0)	1.750 (44.5)	.660 (16.8)	4.250 (108.0)	2.680 (68.0)	2.760 (70.0)	1.650 (42.0)	.150 (3.8)

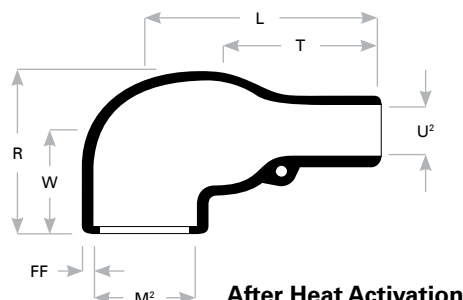
Dimensions are in inches (mm).

† Dimensions ±10% before and after heat activation.

* Dimensions ±10% before heat activation, ±20% after heat activation.



Before Heat Activation



After Heat Activation

Rev. 2203

Boot Adapter

TB Series • MIL-DTL-38999 Series IV Style Accessories



TBAB Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48

TBAB - 15 B - K2

- 1

2

3

4
- 1

2

3

4
- BASIC PART NUMBER**

TBAB Boot adapter

SHELL SIZE

See Adapter Dimensions table below

MATERIAL & FINISH

B Aluminum, hardcoat anodize

N Aluminum, electroless nickel

W Aluminum, olive drab cadmium

G Aluminum, electroless nickel (space-grade)

OPTIONAL BOOT KIT (OMIT FOR NONE)

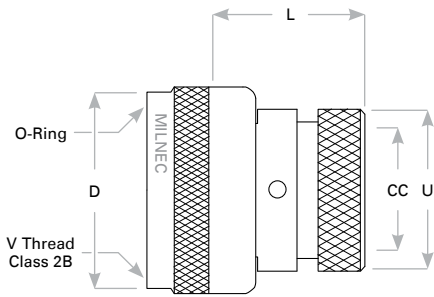
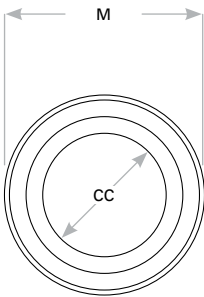
K2 Includes recommended straight shrink boot in standard material 100, p. S-18

K4 Includes recommended 90° shrink boot in standard material 100, p. S-19

Adapter Dimensions

Shell Size	Military Shell Size	CC Cable Clearance	L	D	U	V Thread Class 2B
9	A	.250 (6.4)	.710 (18.0)	.600 (15.2)	.533 (13.5)	M12 X 1-6H
11	B	.375 (9.5)	.710 (18.0)	.717 (18.2)	.605 (15.4)	M15 X 1-6H
13	C	.500 (12.7)	.710 (18.0)	.834 (21.2)	.774 (19.7)	M18 X 1-6H
15	D	.625 (15.9)	.710 (18.0)	.990 (25.2)	.838 (21.3)	M22 X 1-6H
17	E	.750 (19.1)	.710 (18.0)	1.107 (28.1)	.963 (24.5)	M25 X 1-6H
19	F	.812 (20.6)	.710 (18.0)	1.224 (31.1)	1.042 (26.5)	M28 X 1-6H
21	G	.938 (23.8)	.710 (18.0)	1.341 (34.1)	1.217 (30.9)	M31 X 1-6H
23	H	1.062 (27.0)	.710 (18.0)	1.453 (36.9)	1.355 (34.4)	M34 X 1-6H
25	J	1.188 (30.2)	.710 (18.0)	1.567 (39.8)	1.443 (36.7)	M37 X 1-6H

Dimensions are in inches (mm).



TBD2 - 15 N - K2

1 2 3 4

1 BASIC PART NUMBER

- TBD2** Straight EMI/RFI banding boot adapter
TBD3 45° EMI/RFI banding boot adapter
TBD4 90° EMI/RFI banding boot adapter
 (Includes shield termination band TB250, p. R-27)

2 SHELL SIZE

See Adapter Dimensions table below

3 MATERIAL & FINISH

- N** Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
M Composite, electroless nickel
J Composite, olive drab cadmium

4 OPTIONAL BOOT KIT (OMIT FOR NONE)

- K2** Includes recommended straight shrink boot
 in standard material 100, p. S-18



TBD2 Compatibility

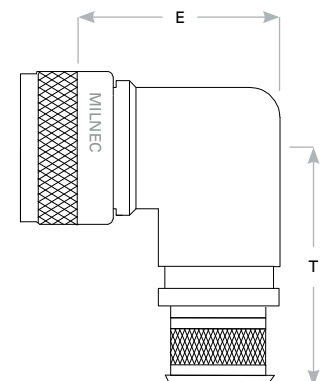
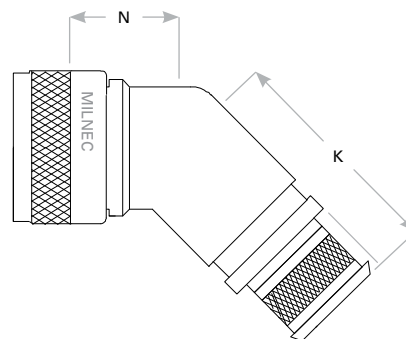
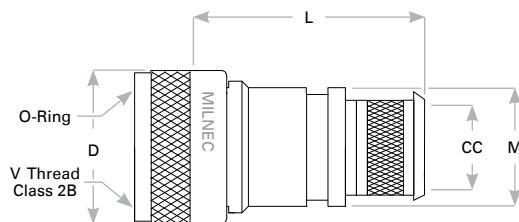
Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/44, D38999/46, D38999/47, D38999/49
G & H Tech / Cooper	BL00, BL03, BL06, BL07, BLG6
Deutsch	DIV/40, DIV/44, DIV/45, DIV/46, DIV/48

Note: Designed for use with straight shrink boot (TBK2, p. S-18).

Adapter Dimensions

Shell Size	Military Shell Size	CC Cable Clearance	M	D	L	N	K	E	T	V Thread Class 2B
9	A	.250 (6.4)	.437 (11.1)	.858 (21.8)	1.350 (34.3)	1.012 (25.7)	1.161 (29.5)	1.375 (34.9)	1.417 (36.0)	M12 X 1-6H
11	B	.312 (7.9)	.500 (12.7)	.998 (25.4)	1.350 (34.3)	1.031 (26.2)	1.189 (30.2)	1.437 (36.5)	1.480 (37.6)	M15 X 1-6H
13	C	.438 (11.1)	.624 (15.8)	1.161 (29.5)	1.350 (34.3)	1.059 (26.9)	1.209 (30.7)	1.562 (39.7)	1.553 (39.4)	M18 X 1-6H
15	D	.562 (14.3)	.750 (19.1)	1.280 (32.5)	1.350 (34.3)	1.079 (27.4)	1.240 (31.5)	1.687 (42.8)	1.614 (41.0)	M22 X 1-6H
17	E	.625 (15.9)	.812 (20.6)	1.409 (35.8)	1.350 (34.3)	1.110 (28.2)	1.260 (32.0)	1.750 (44.5)	1.678 (42.6)	M25 X 1-6H
19	F	.750 (19.1)	.937 (23.8)	1.520 (38.6)	1.350 (34.3)	1.118 (28.4)	1.272 (32.3)	1.875 (47.6)	1.733 (44.0)	M28 X 1-6H
21	G	.812 (20.6)	1.000 (25.4)	1.642 (41.7)	1.350 (34.3)	1.150 (29.2)	1.299 (33.0)	1.938 (49.2)	1.796 (45.6)	M31 X 1-6H
23	H	.938 (23.8)	1.124 (28.5)	1.772 (45.0)	1.350 (34.3)	1.169 (29.7)	1.331 (33.8)	2.062 (52.4)	1.859 (47.2)	M34 X 1-6H
25	J	1.000 (25.4)	1.187 (30.1)	1.890 (48.0)	1.350 (34.3)	1.201 (30.5)	1.350 (34.3)	2.125 (54.0)	1.919 (48.7)	M37 X 1-6H

Dimensions are in inches (mm).



Rev. 2203

Protective Covers

TB Series • MIL-DTL-38999 Series IV Style Accessories



Photo for example only

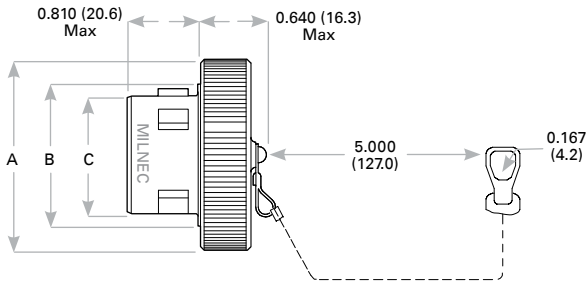
TBCP & TBCR Compatibility

Compatible Brands	Plugs	Receptacles
MIL-DTL-38999 Series IV	D38999/46, D38999/47	D38999/40, D38999/42, D38999/44, D38999/49
G & H Tech / Cooper	BL06, BLG6	BL00, BL02, BL03, BL07
Deutsch	DIV/45, DIV/46	DIV/40, DIV/41, DIV/43, DIV/44

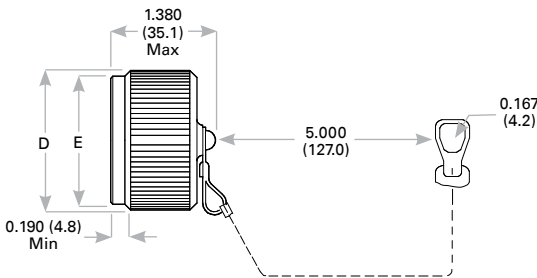
Protective Cover Dimensions

Shell Size	Military Shell Size	A Max	B Max	C Max	D Max	E Max	S Receptacle Min Dia	R Plug Max Dia
9	A	1.250 (32.0)	0.668 (17.0)	0.384 (9.8)	0.880 (22.4)	0.650 (16.5)	0.685 (17.4)	0.491 (12.5)
11	B	1.380 (35.1)	0.793 (20.1)	0.509 (12.9)	0.922 (23.4)	0.775 (19.7)	1.006 (25.6)	0.609 (15.5)
13	C	1.570 (39.9)	0.919 (23.3)	0.634 (16.1)	1.047 (26.6)	0.900 (22.9)	1.124 (28.6)	0.727 (18.5)
15	D	1.660 (42.2)	1.044 (26.5)	0.759 (19.3)	1.219 (31.0)	1.040 (26.4)	1.248 (31.7)	0.885 (22.5)
17	E	1.790 (45.5)	1.170 (29.7)	0.885 (22.5)	1.344 (34.1)	1.150 (29.2)	1.367 (34.7)	1.008 (25.6)
19	F	1.920 (48.8)	1.294 (32.9)	1.009 (25.6)	1.469 (37.3)	1.275 (32.4)	1.524 (38.7)	1.126 (28.6)
21	G	2.060 (52.3)	1.419 (36.0)	1.134 (28.8)	1.579 (40.1)	1.400 (35.6)	1.642 (41.7)	1.244 (31.6)
23	H	2.250 (57.2)	1.544 (39.2)	1.259 (32.0)	1.704 (43.3)	1.525 (38.7)	1.760 (44.7)	1.367 (34.7)
25	J	2.380 (60.5)	1.669 (42.4)	1.384 (35.2)	1.829 (46.5)	1.650 (41.9)	1.878 (47.7)	1.485 (37.7)

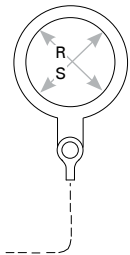
Dimensions are in inches (mm).



Plug Cover



Receptacle Cover



Ring Attachment

TBCP - 15 N E

- 1 BASIC PART NUMBER
- 2 SHELL SIZE
- 3 MATERIAL & FINISH
- 4 ATTACHMENT TYPE

- TBCP** Plug cover
TBCR Receptacle cover
- See Protective Cover Dimensions table below
- N** Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
- E** Eyelet attachment on wire rope
J Ring attachment on wire rope
N No attachment

TBCD - 15 W - 03

1 2 3 4

1 BASIC PART NUMBER

TBCD Stowage receptacle

2 SHELL SIZE

See Stowage Receptacle Dimensions table below

3 MATERIAL & FINISH

N Aluminum, electroless nickel
W Aluminum, olive drab cadmium
G Aluminum, electroless nickel (space-grade)
K* Stainless steel, passivated
L* Stainless steel, electrodeposited nickel

4 OPTIONAL ACCESSORY KIT (OMIT FOR NONE)

02 Protective cover + mounting gasket
03 02 kit + mounting bracket + sealing screws

* Please consult an authorized distributor for lead time and minimum quantity requirements.

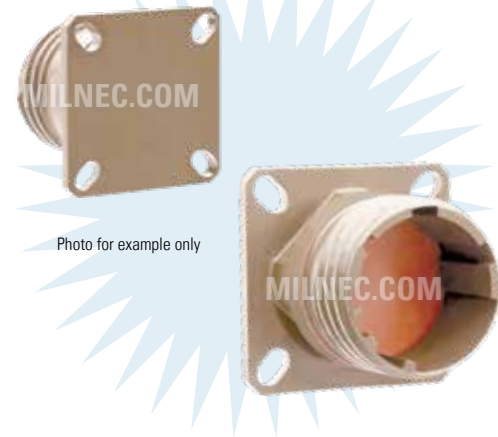


Photo for example only

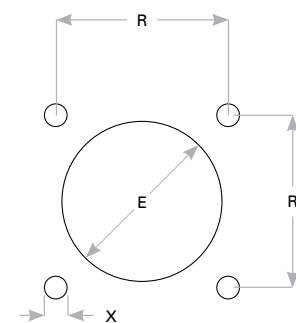
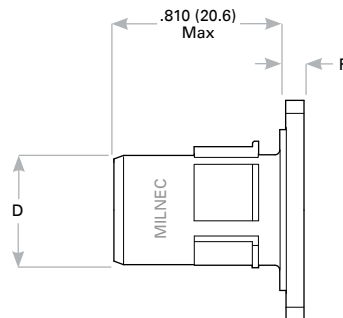
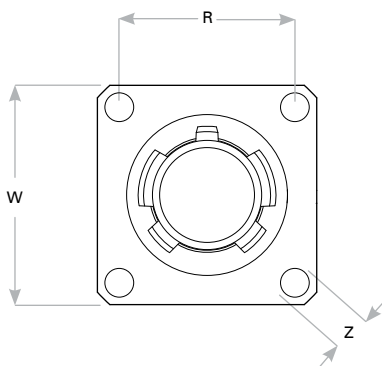
TBCD Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/46, D38999/47
G & H Tech / Cooper	BL06, BLG6
Deutsch	DIV/45, DIV/46

Stowage Receptacle Dimensions

Shell Size	Military Shell Size	W Max	Z	D Max	F	R	X	E
9	A	.950 (24.1)	.137 (3.5)	.384 (9.8)	.102 (2.6)	.656 (16.7)	.130 (3.3)	.681 (17.3)
11	B	1.051 (26.7)	.137 (3.5)	.509 (12.9)	.102 (2.6)	.812 (20.6)	.130 (3.3)	.806 (20.5)
13	C	1.145 (29.1)	.137 (3.5)	.634 (16.1)	.102 (2.6)	.906 (23.0)	.130 (3.3)	.932 (23.7)
15	D	1.240 (31.5)	.137 (3.5)	.759 (19.3)	.102 (2.6)	.969 (24.6)	.130 (3.3)	1.057 (26.8)
17	E	1.334 (33.9)	.137 (3.5)	.885 (22.5)	.102 (2.6)	1.062 (27.0)	.130 (3.3)	1.183 (30.0)
19	F	1.460 (37.1)	.137 (3.5)	1.009 (25.6)	.133 (3.4)	1.156 (29.4)	.130 (3.3)	1.307 (33.2)
21	G	1.582 (40.2)	.137 (3.5)	1.134 (28.8)	.133 (3.4)	1.250 (31.8)	.130 (3.3)	1.432 (36.4)
23	H	1.708 (43.4)	.157 (4.0)	1.259 (32.0)	.133 (3.4)	1.375 (34.9)	.130 (3.3)	1.557 (39.5)
25	J	1.834 (46.6)	.157 (4.0)	1.384 (35.2)	.133 (3.4)	1.500 (38.1)	.130 (3.3)	1.682 (42.7)

Dimensions are in inches (mm).

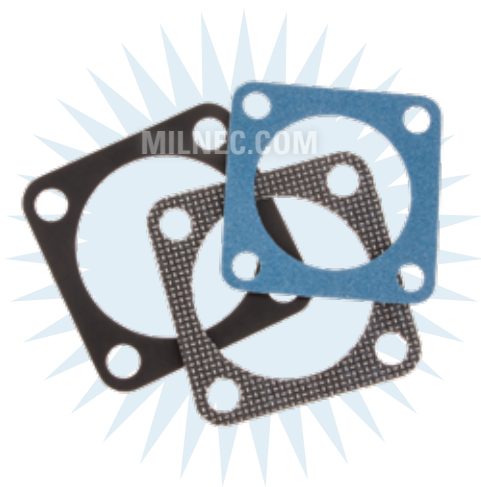


Panel Cutout

Rev. 2203

Mounting Gasket

TB Series • MIL-DTL-38999 Series IV Style Accessories



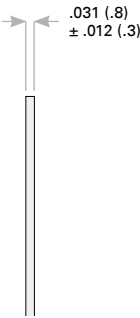
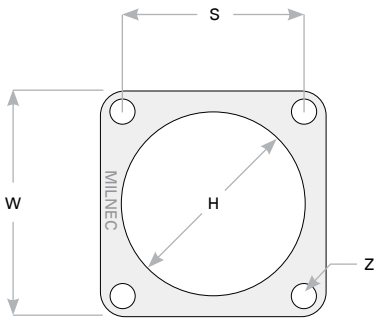
TBGE Compatibility

Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/42
G & H Tech / Cooper	BL00, BL02
Deutsch	DIV/40, DIV/43

Gasket Dimensions

Shell Size	W	S	Z	H
9	1.000 (25.4)	.656 (16.7)	.172 (4.4)	.625 (15.9)
11	1.094 (27.8)	.812 (20.6)	.172 (4.4)	.750 (19.1)
13	1.188 (30.2)	.906 (23.0)	.172 (4.4)	.875 (22.2)
15	1.281 (32.5)	.969 (24.6)	.172 (4.4)	1.000 (25.4)
17	1.375 (34.9)	1.062 (27.0)	.203 (5.2)	1.187 (30.1)
19	1.500 (38.1)	1.156 (29.4)	.203 (5.2)	1.250 (31.8)
21	1.625 (41.3)	1.250 (31.8)	.203 (5.2)	1.375 (34.9)
23	1.750 (44.5)	1.375 (34.9)	.203 (5.2)	1.500 (38.1)
25	1.785 (45.3)	1.500 (38.1)	.152 (3.9)	1.625 (41.3)

Dimensions are in inches (mm).



TBGE - 15

- 1
- 2
- 1

BASIC PART NUMBER

- TBGE
- Neoprene environmental (weather resistant)
Temp. range -40°F to +230°F (-40°C to +110°C)
- TBGL
- Fluorosilicone (jet fuel & oil resistant)
Temp. range -70°F to +392°F (-56°C to +200°C)
Per MIL-DTL-25988, Class 1, Grade 6
- TBGD
- Conductive EMI-RFI fluorosilicone, Al-Ag filled
Temp. range -70°F to +392°F (-56°C to +200°C)
Shielding effectiveness at 90 dB @ 10 GHz
Per MIL-DTL-83528, Type D

- 2
- SHELL SIZE

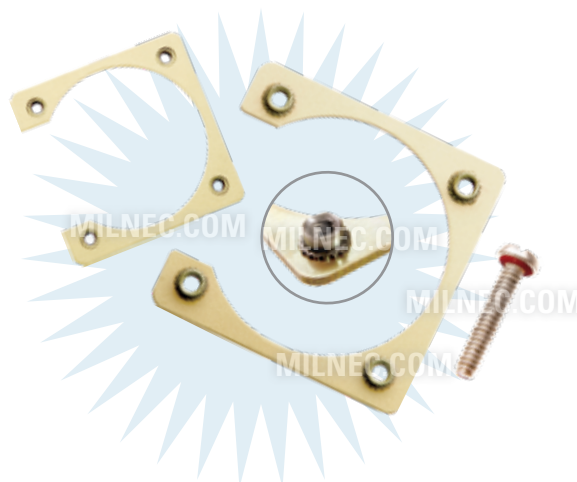
See Gasket Dimensions table below

TB Series • MIL-DTL-38999 Series IV Style Accessories

TBMB Mounting bracket, aluminum alloy with SST locking nuts

See Bracket Dimensions table below

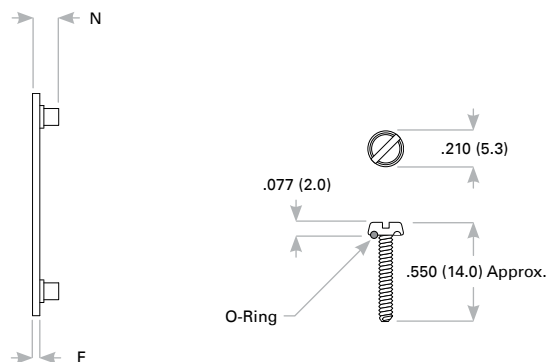
A Self-sealing SST fillister head screws (4x)
B A kit + environmental gasket
D A kit + fluorosilicone EMI/RFI gasket



Compatible Brands	Connectors
MIL-DTL-38999 Series IV	D38999/40, D38999/42
G & H Tech / Cooper	BL00, BL02
Deutsch	DIV/40, DIV/43

Shell Size	W	S	T	H	N	F	Screw Size	Y Thread
9	1.019 (25.9)	.656 (16.7)	.433 (11.0)	.720 (18.3)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
11	1.104 (28.0)	.812 (20.6)	.530 (13.5)	.855 (21.7)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
13	1.198 (30.4)	.906 (23.0)	.624 (15.8)	.984 (25.0)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
15	1.280 (32.5)	.969 (24.6)	.687 (17.4)	1.094 (27.8)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
17	1.406 (35.7)	1.062 (27.0)	.780 (19.8)	1.220 (31.0)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
19	1.535 (39.0)	1.156 (29.4)	.874 (22.2)	1.345 (34.2)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
21	1.665 (42.3)	1.250 (31.8)	.968 (24.6)	1.478 (37.5)	.136 (3.5)	.040 (1.0)	#4	4-40 UNJC-3B
23	1.738 (44.1)	1.375 (34.9)	.907 (23.0)	1.483 (37.7)	.153 (3.9)	.040 (1.0)	#6	6-32 UNJC-3B
25	1.891 (48.0)	1.500 (38.1)	1.125 (28.6)	1.658 (42.1)	.153 (3.9)	.040 (1.0)	#6	6-32 UNJC-3B

Technical drawing of a C-channel cross-section. Dimensions are labeled: S (flange width), W (total height), H (web height), T (flange thickness), and Y Thread (threaded hole).



Heat Gun

TB Series • MIL-DTL-38999 Series IV Style Accessories



TB

TH1910E Professional Heat Gun

Our professional heat gun kit provides a complete solution for installing shrink boots. Interchangeable nozzles help to concentrate heat flow or to direct hot air evenly around a target while protecting sensitive equipment nearby.

Features & Benefits

- Temperature range 120° to 1,100°F (49° to 593°C)
- 3 interchangeable nozzle attachments
- Adjustable temperature control dial
- 3 stage switch to control airflow from 3.6 to 17.6 ft³/min
- Ergonomic design for ease and comfort

Note: The above lists standard options readily available in stock. Please consult an authorized distributor for full range of heat guns and specialized nozzle accessories.

Heat Gun Kit

Part Number	Kit Includes The Following Items
TH1910E	120V / 1,500W variable temperature heat gun, ring holder, and 3 interchangeable nozzles

Consult with authorized distributor for 220V, 230V, & 240V models suitable for your region.

Nozzle Attachments

Part Number	Description
TH101	10mm reduction nozzle
TH102	39mm reflector nozzle
TH103	13mm reflector nozzle



Rev. 2203

TB058 Banding Tool

The TB058 banding tool is the only tool needed to professionally install shielding termination bands to all Milnec EMI/RFI banding adapters. This simple hand tool positions, tightens, and trims the shield termination band with just a few easy steps for a foolproof, high-precision installation.

Features & Benefits

- One tool for all adapter sizes
- Ergonomic & lightweight: 1.18 lbs (0.5 kg)
- Tension range: 100 to 180 lbs (45.3 to 81.6 kg)

Banding Tool

Part Number	Kit Includes The Following Items
TB058	Banding tool for TB250 shield termination bands

Note: Please consult an authorized distributor for full range of pneumatic banding tools for high-volume production environments.



TB250 Shield Termination Band

The TB250 band will professionally attach shielding to Milnec EMI/RFI banding boot adapters of all sizes. The TB250 band can be quickly and reliably installed with the specially designed TB058 banding tool. Bands come pre-coiled for faster installation.

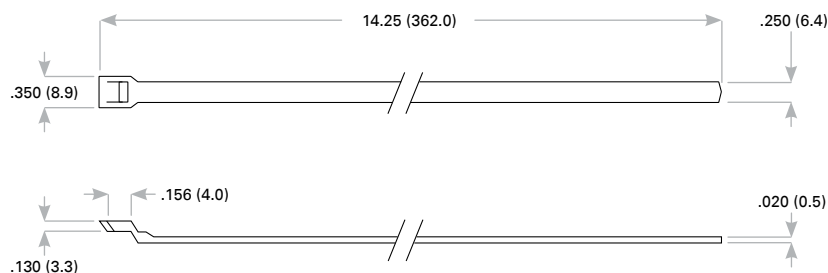
Features & Benefits

- Double-wrapped bands will accommodate diameters up to approximately 0.88 inches (22.4 mm)
- 300 series stainless steel single-piece construction



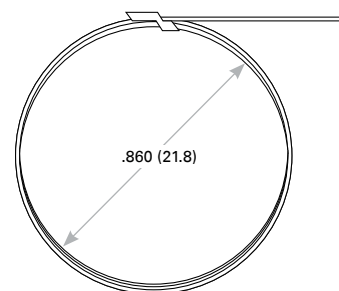
Shield Termination Band

Part Number	Kit Includes The Following Items
TB250	Single stainless steel shield termination band



Dimensions are in inches (mm).

Rev. 2203



Pre-coiled Band

Hand Crimper & Positioner

TB Series • MIL-DTL-38999 Series IV Style Accessories



Precision Hand Crimpers

A crimp tool provides reliable crimp termination of contacts for mission-critical applications. A hand crimper is suitable for contacts from size #12 to #22D. For production environments, pneumatic crimpers are also available.

Our tools feature an 8-impession crimp, which ensures maximum tensile strength between wire and contact. Their cycle controlled ratchets are consistent and accurate and do not permit half crimps, ensuring complete and precise crimping every time.

The tool frames have a built-in 8-step selector knob for easy adjustment of crimp depth to accommodate the size of wire being used. Data plates on positioners provide setting information specific to the size of wires and contacts being used.

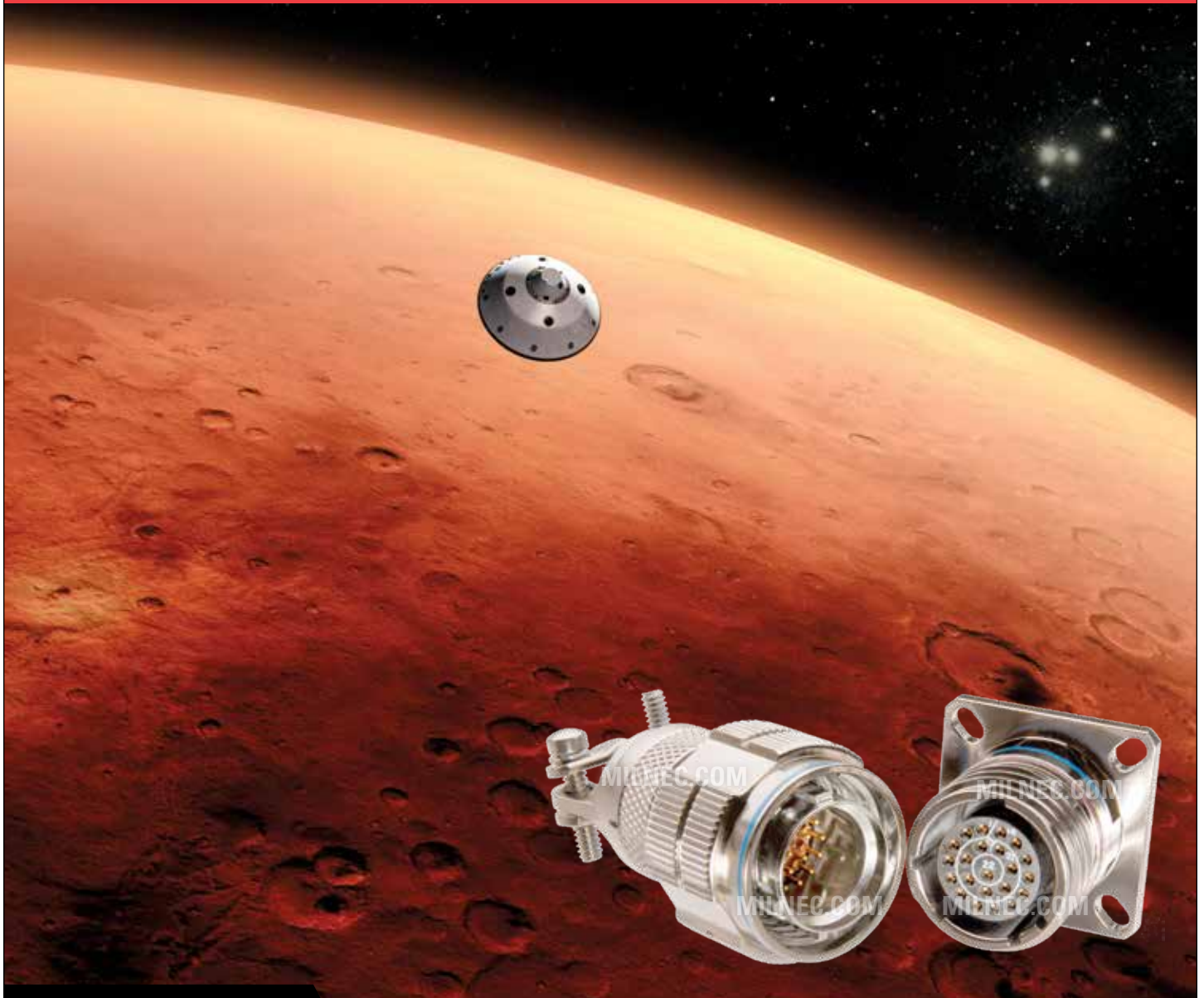
There are a variety of crimp tools and positioners available to fit the various sized contacts within each connector series. We have paired our most popular models with their required positioner(s) to ensure complete compatibility.

Hand Crimper & Positioner Kits

Part Number	Kit Includes the Following Items	Contacts Sizes	Milnec Series Compatibility	Mil-Spec Series Compatibility
TK101-KIT	TK101A crimp tool with TP104 turret positioner	#20, #16, #12	DL Series, DS, Series, TX Series, TB Series	MIL-DTL-38999 Series I, II, III, IV
TK101B-KIT	TK101 crimp tool with TP102 turret positioner	#20, #16, #12	BM Series, EV Series, TM Series, HR Series	MIL-DTL-26482 Series I, II MIL-DTL-83723 Series III MIL-DTL-5015 Crimp*
TK201-KIT	TK201 crimp tool with the following positioners: TP209 (for pins), TP207 (for sockets)	#22, #22M, #22D	DL Series, TX Series, TB Series	MIL-DTL-38999 Series I MIL-DTL-38999 Series III MIL-DTL-38999 Series IV
TK201B-KIT	TK201 crimp tool with the following positioners: TP209 (for pins), TP206 (for sockets)	#22, #22M, #22D	DS Series	MIL-DTL-38999 Series II

* Contacts size #8 and larger require pneumatic crimper. When this is not an option, wires may be soldered directly into contact wire well. For mission critical applications, crimping is preferred termination method. Rev. 2203

SPACE-GRADE CONNECTORS FOR THE FINAL FRONTIER



Don't Lose Touch With Mission Control

Rely on Milnec space-grade connectors for all your high-altitude and space applications. Our space-grade connectors meet all NASA specifications for outgassing and feature triple-start and impact resistant stub threads with self-locking ratchet coupling to ensure secure mating, even in high-vibration environments.

