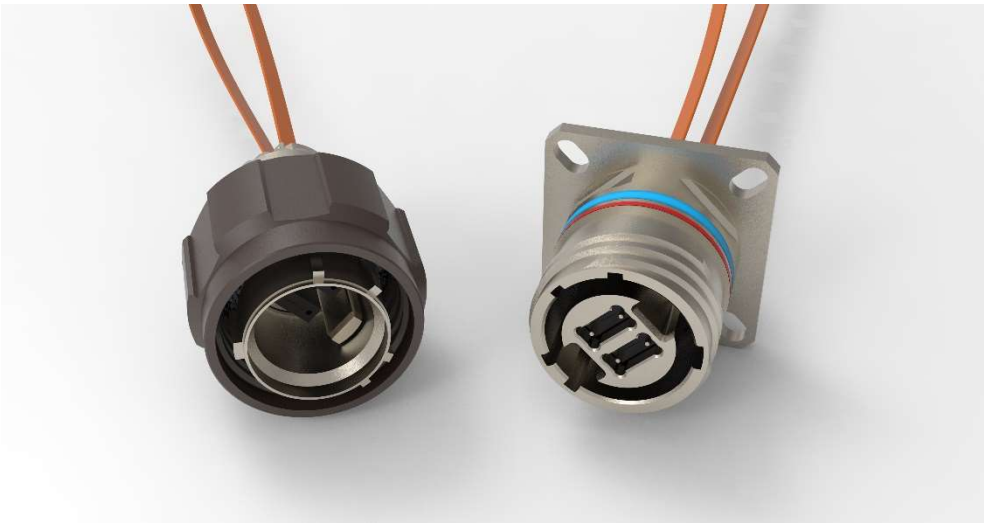
MULTI-CHANNEL FIBER OPTIC CIRCULAR

MIL-DTL-38999 CONNECTOR WITH MT FERRULES – MTC-HD



The next generation of circular connectors with high density MT ferrules are here: introducing the MTC-HD. Increasing the density for rugged environments including military aerospace, commercial aircraft, ground-based radar, or industrial applications. The first generation of MT38999 supported two shell sizes and up to 24F ferrules, whereas MTC-HD offers an additional six insert arrangements and up to 48F or even 72F ferrules! This means at 25Gbps per channel in the largest shell size can support a throughput of up to 10.8Tbps!

FEATURES

- Brand new and simpler MT retention mechanism
- Off the shelf MT ferrules, guide pins, and springs
- Additional shell sizes and cavity counts
- Rear insertion with rear release mechanism
- Accessory threads to accommodate Amphenol's full line of backshells or conduit adapters
- No ganged retention mechanism means that each contact is individually serviceable
- Low insertion loss for single mode or multimode fiber
- Option for sealed and hermetic connectors
- Physical contact or expanded beam ferrules
- Option for metal insert for improved EMI protection
- Amphenol is expanding the reputation for being the gold standard for MIL-DTL-38999 connectors

TEST SPECIFICATIONS	
DESCRIPTION	REQUIREMENT
Optical Insertion Loss (MM)	≤0.45 dB on 50/125µm fiber
Optical Insertion Loss (SM)	≤0.50 dB on 9/125µm fiber
Optical Return Loss (MM)	≥25 dB on 50/125µm fiber
Optical Return Loss (SM)	≥60 dB on 9/125µm fiber
Thermal Cycle	Per TIA-455-3
Temperature Life	Per TIA-455-4
Humidity	Per TIA-455-5
Vibration	Per TIA-455-11
Mechanical Shock	Per TIA-455-14
Mating Durability	Per TIA-455-21
Sealing	Per TIA-455-23

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Amphenol
MILITARY HIGH SPEED

Welcome to the Boneyard! Check out Amphenol's latest next generation D38999 with MT cavities. We created a barebones retention mechanism to avoid working your fingers down to the bone!

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HOW TO ORDER MTC-HD:

Ordering procedure is shown below using part number CF-5E4013-02P

1. Connector Type	2. Connector Class	3. Terminus Style	4. Shell Finish	5. Shell Style	6. Shell Size – Insert Arrangement	7. Insert Type & Key/ Keyway Position
CF-	5	E	4	0	13-02	P

1. Connector Type

	Designates
CF	Multi-Channel Fiber Optic Connector MTC-HD

2. Connector Class

	Designates
5	Aluminum Shell
6	Composite Shell
8	Stainless Steel Shell

3. Termini Style

	Designates
E	MTC-HD

4. Shell Finish

	Designates
4	Electroless Nickel
9	Olive Drab Cadmium
D	Durmalon™ (Nickel-PTFE)
Z	Black Zinc Nickel

5. Shell Style

	Designates
0	Wall Mount Receptacle
6	Straight Plug
7	Jam Nut Receptacle

6. Shell Size & Insert Assembly

	Designates
13-02	Shell Size 13 – Two Cavity
17-03	Shell Size 17 – Three Cavity
19-04	Shell Size 19 – Four Cavity
21-06	Shell Size 21 – Six Cavity
23-08	Shell Size 23 – Eight Cavity
25-10	Shell Size 25 – Ten Cavity

7. Insert Type & Key/ Keyway Position

Alternate Position	Suffix Letter	
	Pins	Sockets
Normal	P	S
A	G	H
B	I	J
C	K	L
D	M	N
E	R	T




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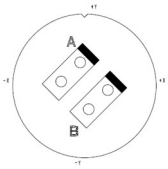
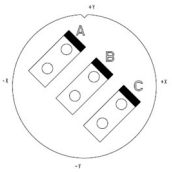
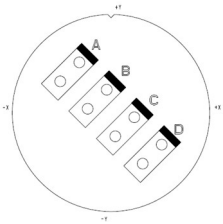
INSERT ARRANGEMENTS:

This illustrated listing represents the available patterns incorporating the MTC contact body within D38999, Series III connectors. The contacts are situated in a 45° orientation to the main keyway of the connector.

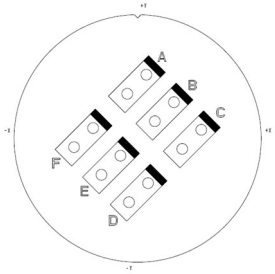
Front face of pin inserts illustrated

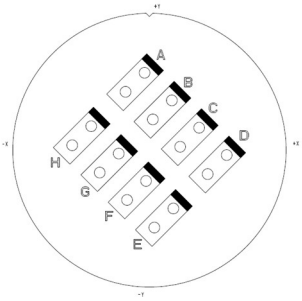


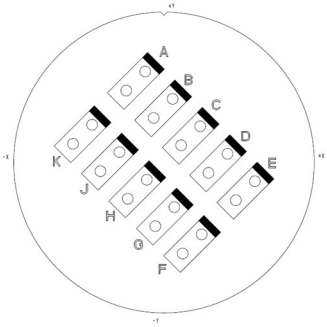




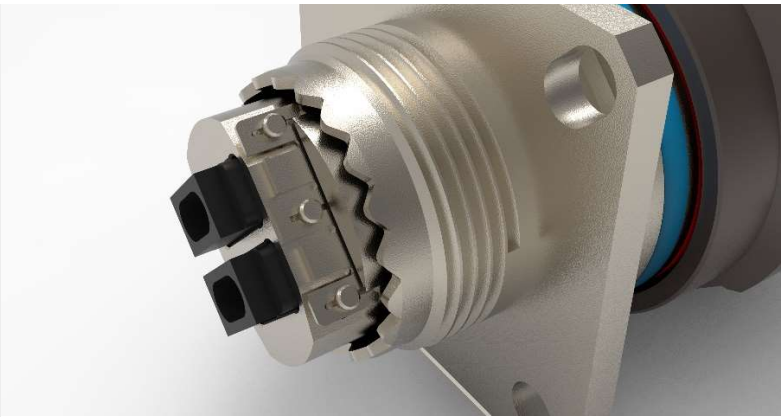
Insert Arrangement	13-02	17-03	19-04
Number of Contacts	2	3	4







Insert Arrangement	21-06	23-08	25-10
Number of Contacts	6	8	10



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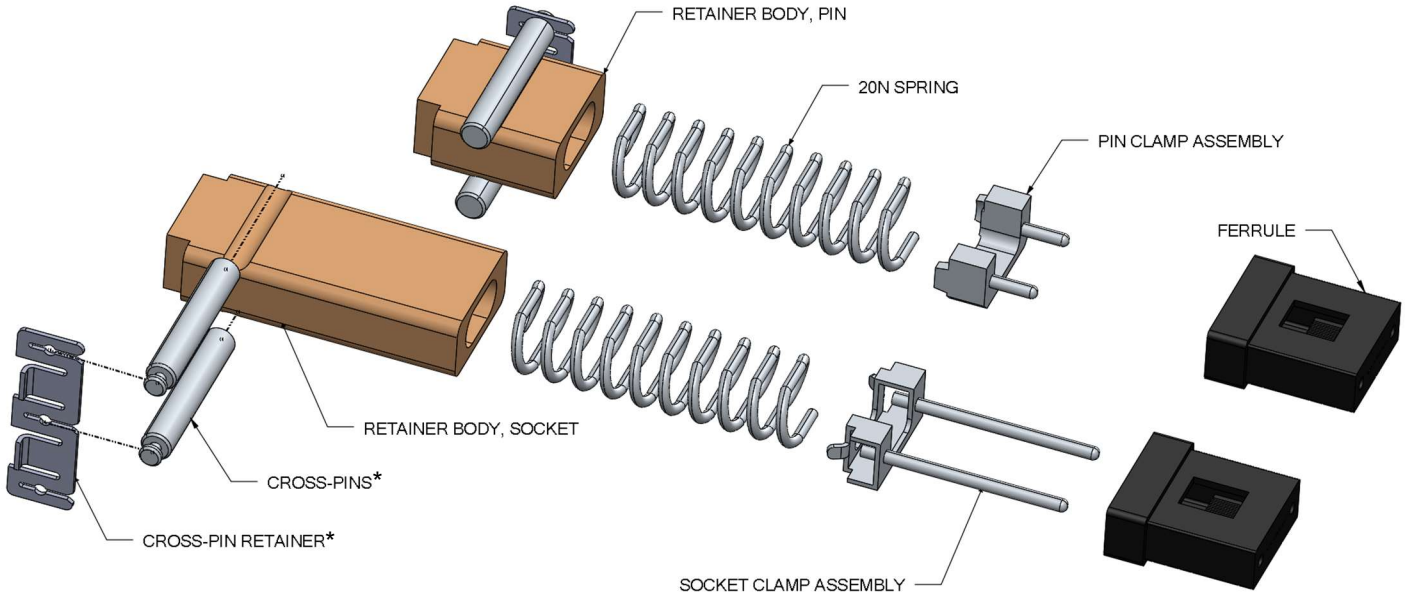
MT TERMINI ASSEMBLY KIT:

- Brand new MT retention mechanism
- Utilizing off the shelf ferrules, clamp assemblies, and springs
- Simpler, cheaper, and easier to assemble



*Cross-pins and cross-pin retainers are suppled with the base connector

HOW TO ORDER MTC-HD TERMINI KITS:

Description	Kit Part Number	Retainer Body	Spring	Ferrule
Socket Insert Kit, no Ferrule	CF-198271-000	✓	✓	N/A
Socket Insert Kit, 12F Ferrule	CF-198271-001	✓	✓	12F
Socket Insert Kit, 24F Ferrule	CF-198271-002	✓	✓	24F
Socket Insert Kit, 48F Ferrule	CF-198271-003	✓	✓	48F
Pin Insert Kit, no Ferrule	CF-198272-000	✓	✓	N/A
Pin Insert Kit, 12F Ferrule	CF-198272-001	✓	✓	12F
Pin Insert Kit, 24F Ferrule	CF-198272-002	✓	✓	24F
Pin Insert Kit, 48F Ferrule	CF-198272-003	✓	✓	48F

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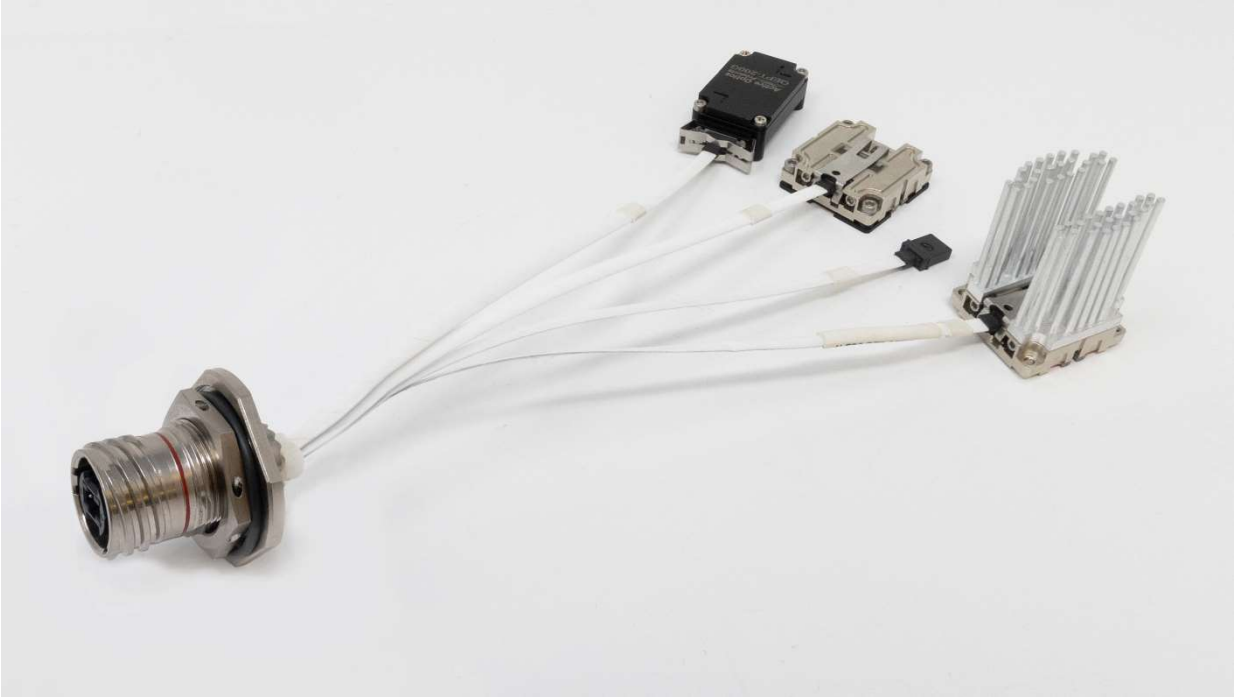
RUGGED PARALLEL TRANSCEIVERS:

Need a transceiver? Check out Amphenol's 12-channel 25Gbps LEAP or 4-channel 50Gbps PAM-4 QEPT!
Rugged, small, fast, power efficient, and high density! Contact Amphenol Sales for more information.

LEAP
Data rates up to *25Gbps* per channel at distances up to 100m
300Gbps total throughput requires only *1in²* of board and *5.4W*
Removable MT interface with off-the-shelf components
Efficient design for thermal dissipation off the top of the part
Built in error checker and PRBS generator for link verification
MIL-STD environmentals including -40°C to 85°C operation

QEPT
Data rates up to *25Gbps NRZ* or *50Gbps PAM-4* per channel
Enables efficient PCB routing with a mezzanine type board connector
Two-wire control and diagnostic interface for real time status monitoring
Programmable input equalization and output amplitude and emphasis
MIL-STD environmentals including -40°C to 85°C operation



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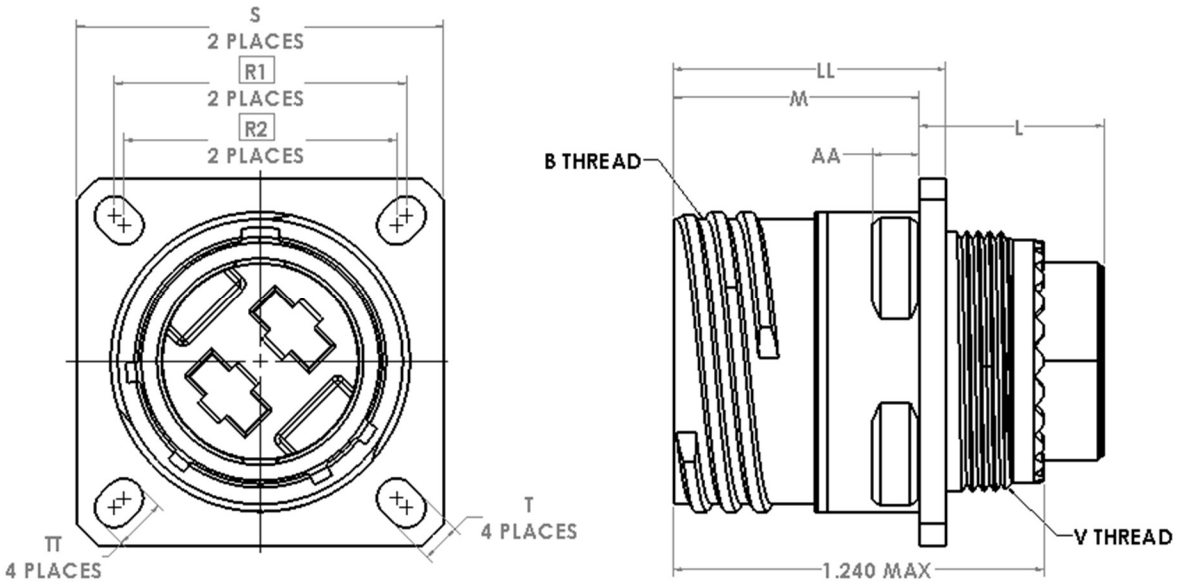
MECHANICAL SPECIFICATIONS:

WALL MOUNT RECEPTACLE – TYPE TV00



Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	L Max.	M +.000 -.005	R1	R2	S Max.	T ±.008	AA Max. Panel Thickness	LL +.006 -.000	TT ±.008	V Thread Metric
11	.7500	1.039	.820	.812	.719	1.043	.128	.234	.905	.194	M15X1-6g
13	.8750	1.039	.820	.906	.812	1.137	.128	.234	.905	.194	M18X1-6g
17	1.1875	1.039	.820	1.062	.969	1.323	.128	.234	.905	.194	M25X1-6g
19	1.2500	1.039	.820	1.156	1.062	1.449	.128	.234	.905	.194	M28X1-6g
21	1.3750	1.069	.790	1.250	1.156	1.575	.128	.204	.905	.194	M31X1-6g
23	1.5000	1.069	.790	1.375	1.250	1.701	.154	.204	.905	.242	M34X1-6g
25	1.6250	1.069	.790	1.500	1.375	1.823	.154	.204	.905	.242	M37X1-6g

All dimensions for reference only (inches)

FOR ADDITIONAL INFORMATION, SEE MIL-DTL-38999/20 SPECIFICATION

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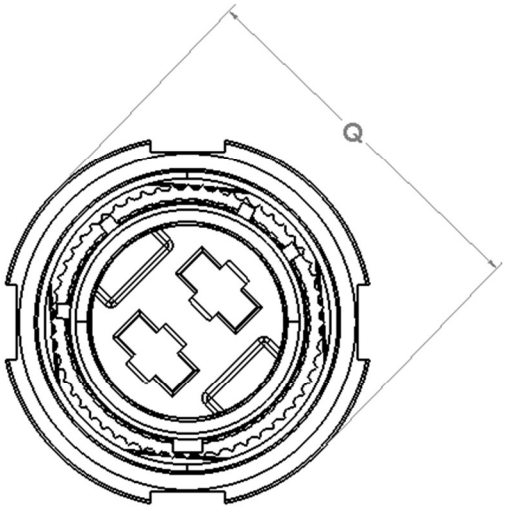
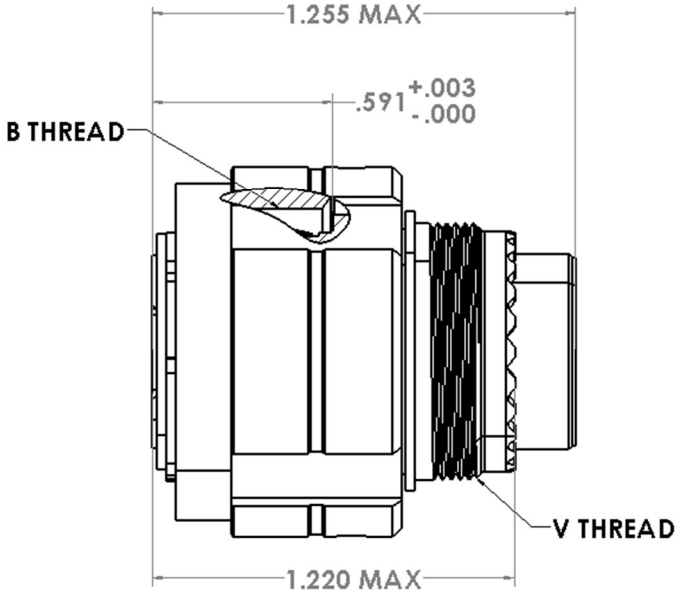
STRAIGHT PLUG – TYPE TV06



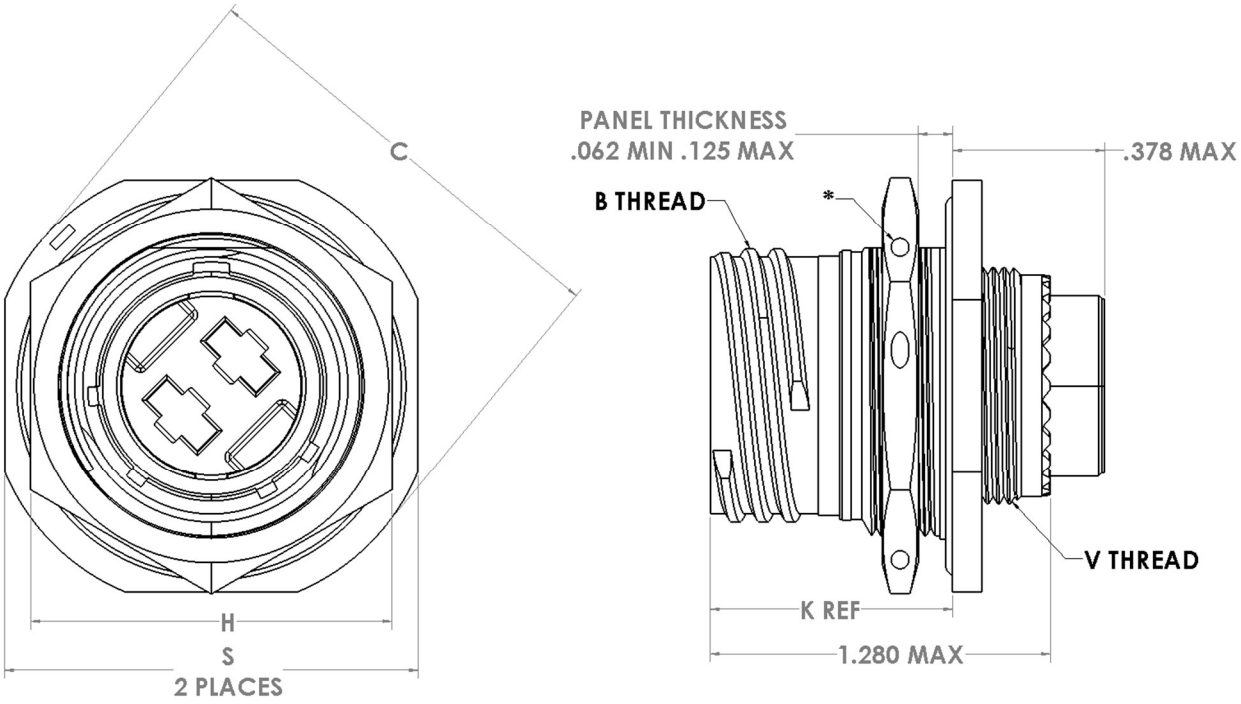


Shell Size	B Thread .01P-0.3L-TS-2B (Plated)	Q Dia. Max.	V Thread Metric
11	.7500	.984	M15X1-6g
13	.8750	1.157	M18X1-6g
17	1.1875	1.406	M25X1-6g
19	1.2500	1.516	M28X1-6g
21	1.3750	1.642	M31X1-6g
23	1.5000	1.768	M34X1-6g
25	1.6250	1.890	M37X1-6g

All dimensions for reference only (inches)

FOR ADDITIONAL INFORMATION, SEE MIL-DTL-38999/26 SPECIFICATION

JAM NUT RECEPTACLE – TYPE TV07



*0.059 dia. min., 3 lockwire holes, formed lockwire hole design (6 holes) is optional

Shell Size	B Thread Class 2A 0.1P-0.3L-TS (Plated)	C Max.	H Hex +.017 -.016	S ±.010	K Ref.	V Thread Metric
11	.7500	1.199	.820	1.250	.871	M15X1-6g
13	.8750	1.386	.820	1.375	.878	M18X1-6g
17	1.1875	1.636	.820	1.625	.878	M25X1-6g
19	1.2500	1.761	.820	1.812	.878	M28X1-6g
21	1.3750	1.949	.790	1.938	.878	M31X1-6g
23	1.5000	2.073	.790	2.062	.878	M34X1-6g
25	1.6250	2.199	.790	2.188	.878	M37X1-6g

All dimensions for reference only(inches)

FOR ADDITIONAL INFORMATION SEE MIL-DTL-38999/24 SPECIFICATION

Amphenol
MILITARY HIGH SPEED

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