

# MIL-DTL-38999 Series III, II, I, and SJT

## Accessories, Contacts, and Tools



Series III TV

Series II JT

Series I LJT

SJT

Amphenol Aerospace is the leader in Interconnect solutions and provides companies with a product portfolio of connectors, accessories, cable assemblies and system integration for most applications across various industries. With connectors conforming to Military, Aerospace and Industrial standards in US, Europe and Asia, Amphenol assumes the leadership in meeting the interconnect needs of these market segments.



### MIL-DTL-38999 Series III TV Tri-Start

- Backshells Accessories
- Dummy Contacts
- Wire Combs
- Receptacle Protection Cap
- Plug Protection Cap
- Dummy Receptacle
- Cable Clamps
- Contacts-Printed Circuit Board Wire Wrap
- Header Assembly

#### Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

### MIL-DTL-38999 Series II JT

- Receptacle Protection Cap
- Plug Protection Cap
- Strain Relief (Solder/Crimp Type)
- Contacts-Printed Circuit Board Wire Wrap
- Header Assembly

#### Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

### SJT

- Receptacle Protection Cap
- Plug Protection Cap
- Dummy Receptacle
- Cable Clamps

#### Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools

### MIL-DTL-38999 Series I LJT

- Receptacle Protection Cap
- Plug Protection Cap
- Dummy Receptacle
- Cable Clamps
- Contacts-Printed Circuit Board Wire Wrap
- Header Assembly

#### Application Tools

- Crimp Tools
- Insertion Tools
- Removal Tools



III  
II  
I  
SJT  
**38999**

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear  
Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others



# 38999, Series III TV Breakaway Fail Safe Backshells, Dummy Contacts, Wire Combs

## Series III TV

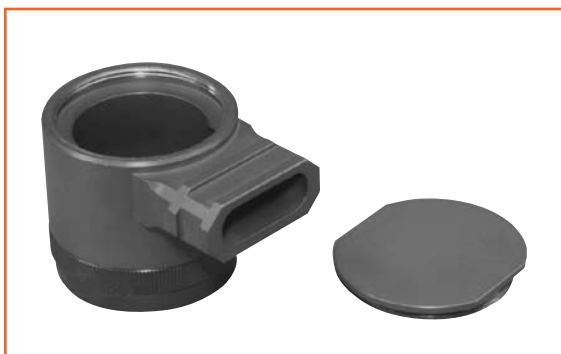
Amphenol offers a full range of accessories that are designed to enhance the performance of Amphenol Breakaway connectors.

Low Profile Backshells in shell size 25 with the following features:

- Olive drab cadmium finish
- 90 degree termination
- Low profile design with three heights ranging from 1.010 to 1.660
- Rear access covers to help ease harness assembly and repairability
- Amphenol part numbers: 10-640000-XXX



Backshells are offered for use with Breakaway Fail Safe Connectors in three heights.



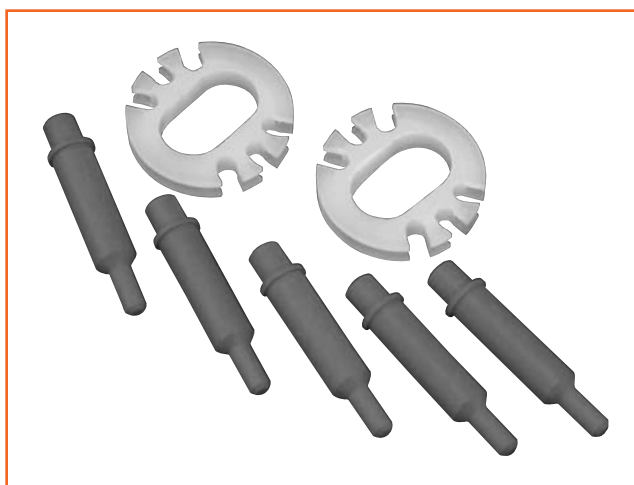
## Dummy Contacts

- Available in size 12 and size 8
- Provide a cost effective alternative for sealing unused contact cavities
- Size 8 part number: T3-4008-59P
- Size 12 part number: T3-4012-59P

## Wire Combs

- Available for the 25-20 insert pattern to help to stabilize and prevent contact side loading
- Amphenol part number: 21-33626-XXX

For information on how to order these accessory products for Breakaway Fail Safe connectors consult Powell Electronics.



Accessory products for Breakaway Connectors: Dummy Contacts and Wire Combs

- 38999 III
- SJT I II
- 26482 Matrix 2
- 83723 III Pyle Matrix
- 5015 Crimp Rear Release Matrix
- 26500 Pyle
- Printed Circuit Board
- EMI Filter Transient
- Fiber Optics
- High Speed Contacts
- Options Others

# MIL-DTL-38999, Series III TV Receptacle Protection Cap



Series III TV

III  
II  
I  
SJT  
**38999**

Matrix 2  
**26482**

Matrix  
Pyle  
**83723 III**

Crimp Rear  
Release Matrix  
**5015**

**26500** Pyle

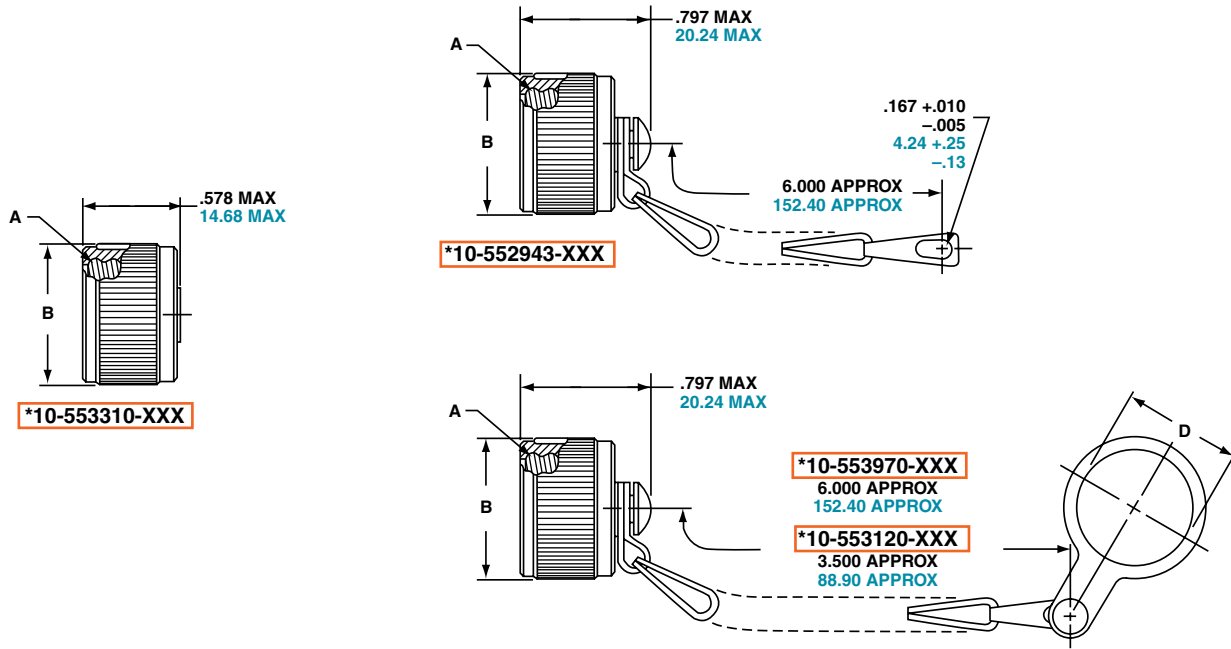
Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others



\* To complete order number, add shell size and suffix number.  
For example, shell size 11 with olive drab cadmium nickel base, **10-552943-119**

Inches

Shell Size	A Thread Class 2B 0.1P-0.3L-TS	B Dia. Max.	D Dia. +.010 - .000
9	.6250	.875	.703
11	.7500	1.000	.844
13	.8750	1.125	1.016
15	1.0000	1.250	1.141
17	1.1875	1.438	1.266
19	1.2500	1.500	1.391
21	1.3750	1.625	1.516
23	1.5000	1.750	1.641
25	1.6250	1.875	1.766

Millimeters

Finish	10-No Suffix
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

Shell Size	MS Shell Size Code	B Dia. Max.	D Dia. +.25 -.00
9	A	22.23	17.86
11	B	25.40	21.44
13	C	28.58	25.81
15	D	31.75	28.98
17	E	36.53	32.16
19	F	38.10	35.33
21	G	41.28	38.51
23	H	44.45	41.68
25	J	47.63	44.86

Consult Powell Electronics for availability of stainless steel protection caps.

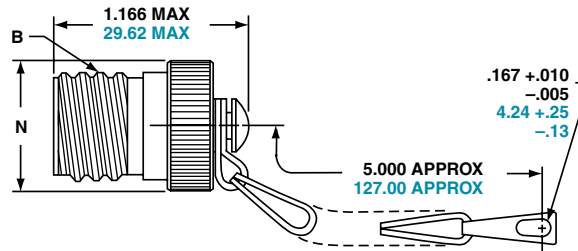
All dimensions for reference only.  
For MS protection caps, see page 95.



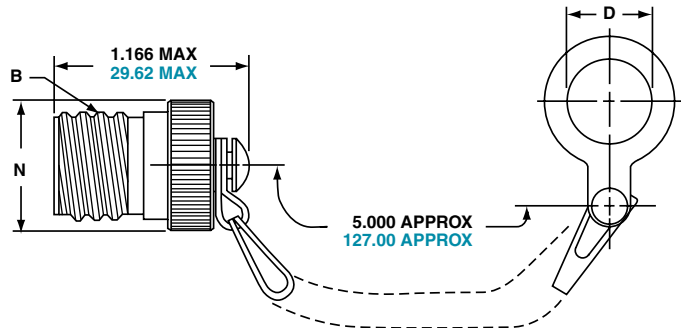
# MIL-DTL-38999, Series III TV Plug Protection Cap

## Series III TV

\*10-552944-XXX



\*10-553998-XXX



\* To complete order number, add shell size and suffix number.  
For example, shell size 11 with olive drab cadmium nickel base, [10-552944-119](#)

Inches

Shell Size	A Thread Class 2B 0.1P-0.3L-TS	D Dia. +.010 -.000	N Dia. Max.
9	.6250	.516	.895
11	.7500	.641	1.000
13	.8750	.766	1.171
15	1.0000	.891	1.299
17	1.1875	1.016	1.436
19	1.2500	1.141	1.543
21	1.3750	1.266	1.670
23	1.5000	1.343	1.787
25	1.6250	1.516	1.914

Millimeters

Finish	10-No Suffix
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

Shell Size	MS Shell Size Code	D Dia. +.25 -.00	N Dia. Max.
9	A	13.11	22.73
11	B	16.28	25.40
13	C	19.46	29.74
15	D	22.63	32.99
17	E	25.81	36.47
19	F	28.98	39.19
21	G	32.16	42.42
23	H	34.11	45.39
25	J	38.51	48.62

Consult Powell Electronics for availability of stainless steel protection caps.

All dimensions for reference only.  
For MS protection caps, see page 95.

38999  
SJT I II III

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others

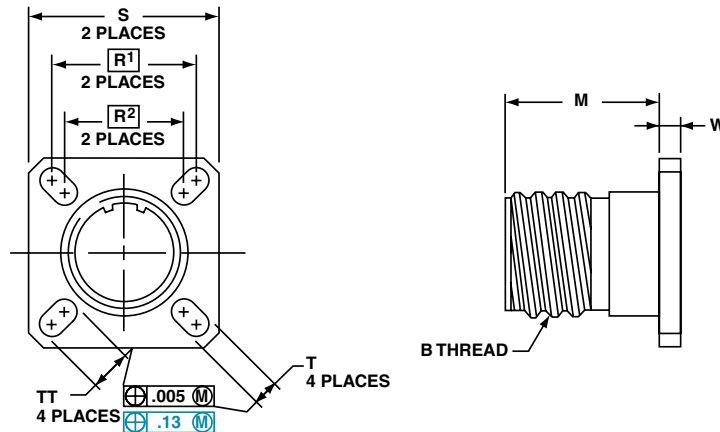
# MIL-DTL-38999, Series III TV Dummy Receptacle



Series III TV

Part number reference.  
See note below to complete.

\* 10-553974-XXX



\* To complete order number, add shell size and suffix number.  
For example, shell size 11 with olive drab cadmium nickel base, [10-553974-119](#)

Inches

Shell Size	MS Shell Size Coded	B Thread 0.1P-0.3L-TS (Plated)	M +.020 - .000	R <sup>1</sup>	R <sup>2</sup>	S ±.010	T ±.008 - .006	W ±.010	TT ±.008 - .006
9	A	.6250	.822	.719	.594	.938	.128	.098	.216
11	B	.7500	.822	.812	.719	1.031	.128	.098	.194
13	C	.8750	.822	.906	.812	1.125	.128	.098	.194
15	D	1.0000	.822	.969	.906	1.219	.128	.098	.173
17	E	1.1875	.822	1.062	.969	1.312	.128	.098	.194
19	F	1.2500	.822	1.156	1.062	1.438	.128	.098	.194
21	G	1.3750	.791	1.250	1.156	1.562	.128	.125	.194
23	H	1.5000	.791	1.375	1.250	1.688	.154	.125	.242
25	J	1.6250	.791	1.500	1.375	1.812	.154	.125	.242

Millimeters

Finish	10-No Suffix
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

Shell Size	MS Shell Size Coded	M +.51 - .00	R <sup>1</sup>	R <sup>2</sup>	S ±.25	T +.20 - .15	W ±.25	TT +.20 - .15
9	A	20.88	18.26	15.09	23.83	3.25	2.49	5.49
11	B	20.88	20.62	18.26	26.19	3.25	2.49	4.93
13	C	20.88	23.01	20.62	28.58	3.25	2.49	4.93
15	D	20.88	24.61	23.01	30.96	3.25	2.49	4.93
17	E	20.88	26.97	24.61	33.32	3.25	2.49	4.93
19	F	20.88	29.36	26.97	36.53	3.25	2.49	4.93
21	G	20.09	31.75	29.36	39.67	3.25	3.18	4.93
23	H	20.09	34.93	31.75	42.88	3.91	3.18	6.15
25	J	20.09	38.10	34.93	46.02	3.91	3.18	6.15

All dimensions for reference only



Designates true position dimensioning

III  
II  
I  
SJT  
38999

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

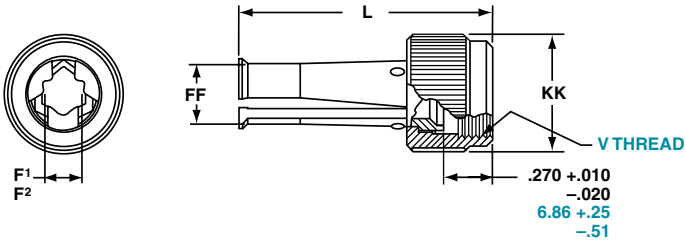
Options  
Others



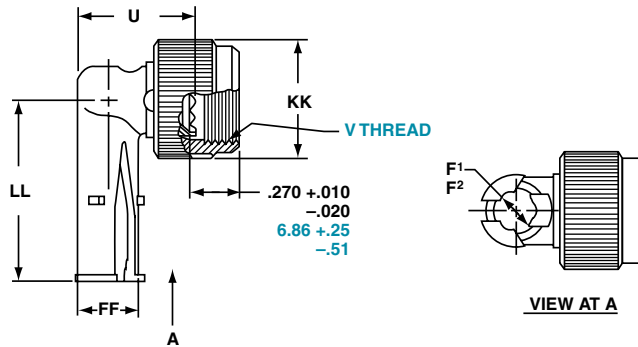
# MIL-DTL-38999, Series III TV Cable Clamps

## Series III TV

**Straight Style**  
\*10-552681-XXX metal coupling



**90 Degree Elbow Style**  
\*10-552682-XXX metal coupling



\* To complete order number, see suffix chart below. Examples:  
Clamp with metal coupling nut for shell size 11 with olive drab cadmium nickel base, 10-552681-119.

Inches

Shell Size	MS Shell Size Code	F <sup>1</sup> Min. Dia. Cable	F <sup>2</sup> Max. Dia. Cable	L Max.	U Max.	FF Dia. Max.	KK Dia. Max.	LL Max.
9	A	.094	.203	1.431	.656	.347	.629	1.015
11	B	.141	.250	1.431	.688	.394	.756	1.062
13	C	.172	.323	1.431	.750	.467	.883	1.125
15	D	.203	.422	1.431	.859	.566	1.011	1.328
17	E	.234	.500	1.431	.937	.644	1.138	1.392
19	F	.265	.562	1.431	1.000	.706	1.265	1.453
21	G	.297	.625	1.492	1.062	.769	1.393	1.609
23	H	.328	.703	1.492	1.141	.847	1.488	1.656
25	J	.359	.765	1.492	1.203	.909	1.616	1.719

Millimeters

Finish	10-No Suffix
Olive Drab, Cadmium Nickel Base	-XX9
Electroless Nickel	-XXG

Shell Size	MS Shell Size Code	F <sup>1</sup> Min. Dia. Cable	F <sup>2</sup> Max. Dia. Cable	L Max.	U Max.	V Thread Metric	FF Dia. Max.	KK Dia. Max.	LL Max.
9	A	2.39	5.16	36.35	16.66	M12X1-6H	8.81	15.98	25.78
11	B	3.58	6.35	36.35	17.48	M15X1-6H	10.01	19.20	26.97
13	C	4.37	8.20	36.35	19.05	M18X1-6H	11.86	22.43	28.58
15	D	5.16	10.72	36.35	21.82	M22X1-6H	14.38	25.68	33.73
17	E	5.94	12.70	36.35	23.80	M25X1-6H	16.36	28.91	35.36
19	F	6.73	14.27	36.35	25.40	M28X1-6H	17.93	32.13	36.91
21	G	7.54	15.88	37.90	26.97	M31X1-6H	19.53	35.38	40.87
23	H	8.83	17.86	37.90	28.98	M34X1-6H	21.51	37.80	42.06
25	J	9.12	19.43	37.90	30.56	M37X1-6H	23.09	41.05	43.66

All dimensions for reference only.

- 38999 III
- 26482 Matrix 2
- 83723 III Pyle
- 5015 Crimp Rear Release Matrix
- 26500 Pyle
- Printed Circuit Board
- EMI Filter Transient
- Fiber Optics
- High Speed Contacts
- Options Others

# MIL-DTL-38999, Series III TV

## Contacts, Sealing Plugs, Protective Caps



Series III TV

### STANDARD 500 CYCLE CONTACTS FOR TV AND CTV, P & S

Contact Size	TV/CTV Pins		TV/CTV Sockets	
	Military No.	Supersedes	Military No.	Supersedes
8 (Coax)*	M39029/60-367	MS27536	M39029/59-366	MS27535
8 (Power)	Contact Factory	NA	NA	NA
8 (Twinax)**	M39029/90-529	N/A	M39029/91-530	N/A
10 (Power)	M39029/58-528	N/A	M39029/56-527	N/A
12	M39029/58-365	MS27493-12	M39029/56-353	MS27490-12
16	M39029/58-364	MS27493-16	M39029/56-352	MS27490-16
20	M39029/58-363	MS27493-20	M39029/56-351	MS27490-20
22D	M39029/58-360	MS27493-22D	M39029/56-348	MS27490-22D
4	N/A	N/A	N/A	N/A
0	N/A	N/A	N/A	N/A

Above part numbers include standard 500 cycle finish designation - gold plating over suitable underplate in accordance with SAE AS39029. For other finish variations, consult Powell.

\*For use with RG180B/U and RG195A/U cable. For other size 8 coax or optional sizes 12 and 16 coax contacts available for use in MIL-DTL-38999 Series III connectors, see the High Speed Contact section of this catalog consult Powell Electronics.

\*\* For use with M17/M176-00002 cable. For other contact options available for use in Tri-Start connectors, (wire wrap, thermocouple, fiber optic) consult Powell Electronics.

### 1500 CYCLE CONTACTS FOR CTV, CLASSES H & J

Contact Size	CTV Pins			CTV Sockets		
	Commercial No.	Military No.	Supersedes	Commercial No.	Military No.	Supersedes
12	10-597072-2X	M39029/107-623	-	10-597073-2X	M39029/106-617	-
16	10-597068-2X	M39029/107-622	-	10-597069-2X	M39029/106-616	-
20	10-597064-2X	M39029/107-621	-	10-597065-2X	M39029/106-615	-
22D	10-597058-3X	M39029/107-620	-	10-597061-2X	M39029/106-614	-

### PLASTIC PROTECTION CAPS

Shell Size	Plug	Receptacle
9	10-70506-14	10-70500-10
11	10-70506-16	10-70500-12
13	10-70500-18	10-70500-14
15	10-70500-20	10-70500-16
17	10-70500-22	10-70500-19
19	10-70500-24	10-70500-20
21	10-70524-1	10-70500-22
23	10-70506-28	10-70500-24
25	10-70500-28	10-70524-1

### MS METAL PROTECTION CAPS

Shell Size	MS Shell Size Code	MS Plug Protection Cap	MS Receptacle Protection Cap
9	A	D38999/32W9X*	D38999/33W9X*
11	B	D38999/32W11X*	D38999/33W11X*
13	C	D38999/32W13X*	D38999/33W13X*
15	D	D38999/32W15X*	D38999/33W15X*
17	E	D38999/32W17X*	D38999/33W17X*
19	F	D38999/32W19X*	D38999/33W19X*
21	G	D38999/32W21X*	D38999/33W21X*
23	H	D38999/32W23X*	D38999/33W23X*
25	J	D38999/32W25X*	D38999/33W25X*

\* To complete order number, replace X with applicable letter as follows:  
 R - designates eyelet type  
 N - designates washer type

MS metal protection caps are supplied with service class W which designates corrosion resistant olive drab cadmium plate aluminum. Consult Powell Electronics for more detailed information on ordering MS Metal protection caps.

### SEALING PLUGS

Contact Size	Commercial No.	Military No.
8 (Coax)	10-482099-8	N/A
8 (Twinax)	T3-4008-59P	N/A
8 (Power)	10-405996-83	MS27488-8-3
10 (Power)	T3-4010-59P	M85049/81-10
12	10-405996-122	MS27488-12-2
16	10-405996-162	MS27488-16-2
20	10-405996-202	MS27488-20-2
22D	10-405996-222	MS27488-22-2
4	10-405996-43	MS27488-4-3
0	10-405996-03	MS27488-0-3

III  
II  
I  
SJT  
38999

Matrix 2  
26482

Matrix  
Pyle  
83723 III

Crimp Rear  
Release Matrix  
5015

Pyle  
26500

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others



# MIL-DTL-38999, Series II JT Plug Protection Cap

## Series II JT

38999  
SJT I II III

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear  
Release Matrix

26500 Pyle

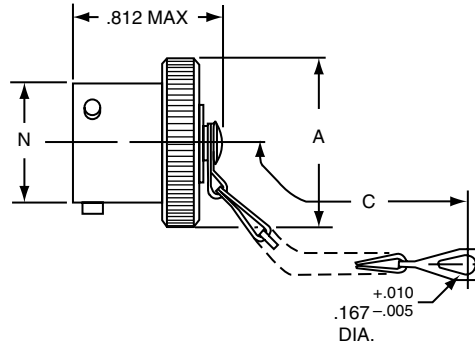
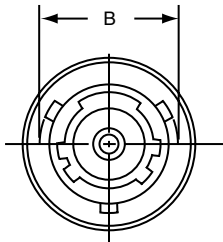
Printed  
Circuit Board

EMI Filter  
Transient

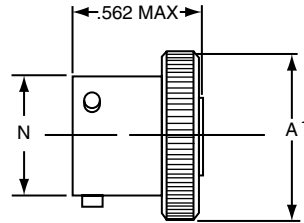
Fiber Optics

High Speed  
Contacts

Options  
Others



\* 10-547138-XXX (MS27510XXXC)



\* 10-241853-XXX (MS27510XXXA)

For MS stamping identification, accessories must be ordered by MS part number.

If ordered by 10- part number, they will be stamped with said number.

\* To complete order number, add shell size and suffix number.

For example, shell size 10 with cadmium plate, nickel base would be 10-241853-107, MS27510A10C or MS27510A10A).

Shell Size	A Dia. Max.	A' Dia. Max.	B +.000 -.016	C Approx.	N Dia. +.001 -.005
8	.719	.703	.563	3.000	.473
10	.844	.828	.680	3.000	.590
12	1.000	.984	.859	3.500	.750
14	1.125	1.109	.984	3.500	.875
16	1.250	1.234	1.108	3.500	1.000
18	1.375	1.359	1.233	3.500	1.125
20	1.500	1.484	1.358	4.000	1.250
22	1.625	1.609	1.483	4.000	1.375
24	1.750	1.734	1.610	4.000	1.500

Finish	10-Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic coating	-XX5	CXXC	CXXA
Cadmium Plate Nickel base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless Nickel	-XXG	FXXC	FXXA

All dimensions for reference only.

# MIL-DTL-38999, Series II JT

## Receptacle Protection Cap



Series II JT

III  
II  
I  
SJT

**38999**

Matrix 2

**26482**

Matrix

Pyle

**83723 III**

Crimp Rear

Release Matrix

**5015**

**26500** Pyle

Printed

Circuit Board

EMI Filter

Transient

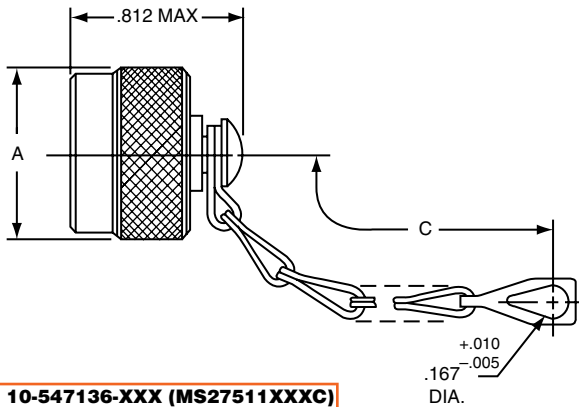
Fiber Optics

High Speed

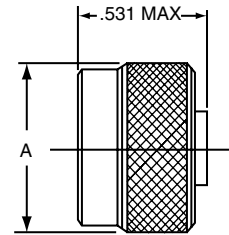
Contacts

Options

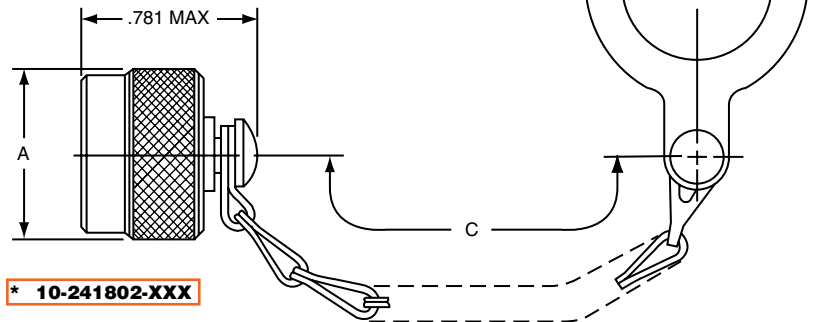
Others



\* 10-547136-XXX (MS27511XXXC)



\* 10-241856-XXX (MS27511XXXA)



\* 10-241802-XXX

For MS stamping identification, accessories must be ordered by MS part number.

If ordered by 10- part number, they will be stamped with said number.

\* To complete order number, add shell size and suffix number.

For example, shell size 10 with cadmium plate, nickel base would be 10-241802-107, MS27511A10C, MS27511A10A

Shell Size	A Dia. Max.	C Approx.	D +.010 - .000
8	.719	3.000	.891
10	.844	3.000	1.016
12	1.000	3.500†	1.141
14	1.125	3.500	1.266
16	1.250	3.500	1.391
18	1.375	3.500	1.516
20	1.500	4.000	1.641
22	1.625	4.000	1.766
24	1.750	4.000	1.891

†3.000 for MS27511

All dimensions for reference only.

Finish	10-Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic Coating	-XX5	CXXC	CXXA
Cadmium Plate Nickel Base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless nickel	-XXG	FXXC	FXXA

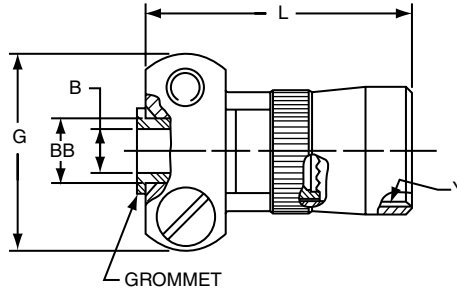


# MIL-DTL-38999, Series II JT MIL-DTL-38999, Series I LJT

## Strain relief (crimp type)

Series II JT

Series I LJT



\* 10-405982-XXX (MS27506XXX-2 reference M85049/49)

For MS stamping identification, accessories must be ordered by MS part number.

If ordered by 10-part number, they will be stamped with said number.

\*To complete order number, add shell size and suffix number.

Finish	10-Number Suffix	MS27506 Suffix	M85049/49 Suffix
Chromate treat	-XX0		NA
Anodic coating	-XX5	CXX-2	(-2-XXA)
Cadmium plate nickel base	-XX7	AXX-2	NA
Olive drab, cadmium, nickel base	-XX9	BXX-2	(-2-XXW)
Electroless nickel	-XXG	FXX-2	(-2-XXN)

For example: Shell size 10 with cadmium plate, nickel base would be

10-405982-107 or M85049/49-2-10W

Shell Size	B Dia. +.010-.025	G Max.	L Max.	Y Thread (Modified)		BB Dia. +.000 -.011	Screw Size
				Size Class 2B	Modified Minor Dia.		
8	.125	.775	.984	.4375-28UNEF	.399 - .405	.250	6-32UNC
10	.188	.837	.984	.5625-24UNEF	.524 - .529	.312	6-32UNC
12	.312	.963	.984	.6875-24UNEF	.649 - .654	.438	6-32UNC
14	.375	1.087	1.234	.8125-20UNEF	.766 - .771	.562	6-32UNC
16	.500	1.150	1.234	.9375-20UNEF	.891 - .896	.625	6-32UNC
18	.625	1.400	1.234	1.0625-18UNEF	1.002 - 1.007	.750	8-32UNC
20	.625	1.400	1.234	1.1875-18UNEF	1.135 - 1.140	.750	8-32UNC
22	.750	1.587	1.359	1.3125-18UNEF	1.252 - 1.257	.938	8-32UNC
24	.800	1.681	1.281	1.4375-18UNEF	1.377 - 1.382	1.000	8-32UNC

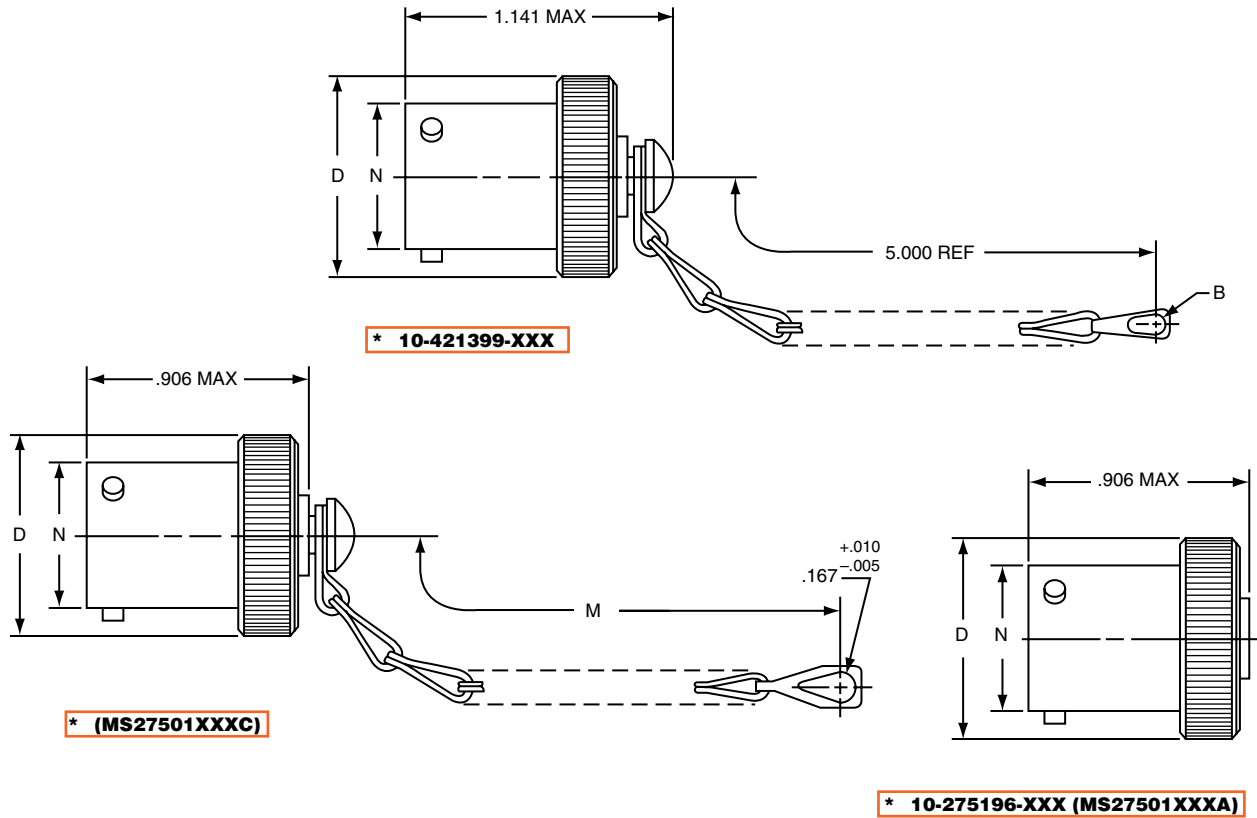
All dimensions for reference only.

Note: For solder type cable clamp 10-241055-XXX (M85049/49) consult Powell Electronics.

# MIL-DTL-38999, Series I LJT Plug Protection Cap



Series I LJT



III  
II  
I  
SJT

38999  
26482  
Matrix 2

83723 III  
Matrix  
Pyle

5015  
Crimp Rear  
Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others

\*To complete order number, add shell size and suffix number.

For example, shell size 11 with cadmium plate, nickel base would be 10-421399-117, MS27501A11C, MS27501A11A.

Shell Size	B Dia. Ref	D Dia. Max.	M ±.250	N Dia. +.001 - .005
9	.180	.812	3.000	.572
11	.180	.938	3.000	.700
13	.180	1.062	3.500	.850
15	.180	1.188	3.500	.975
17	.180	1.312	3.500	1.100
19	.209	1.438	3.500	1.207
21	.209	1.562	4.000	1.332
23	.209	1.688	4.000	1.457
25	.209	1.812	4.000	1.582

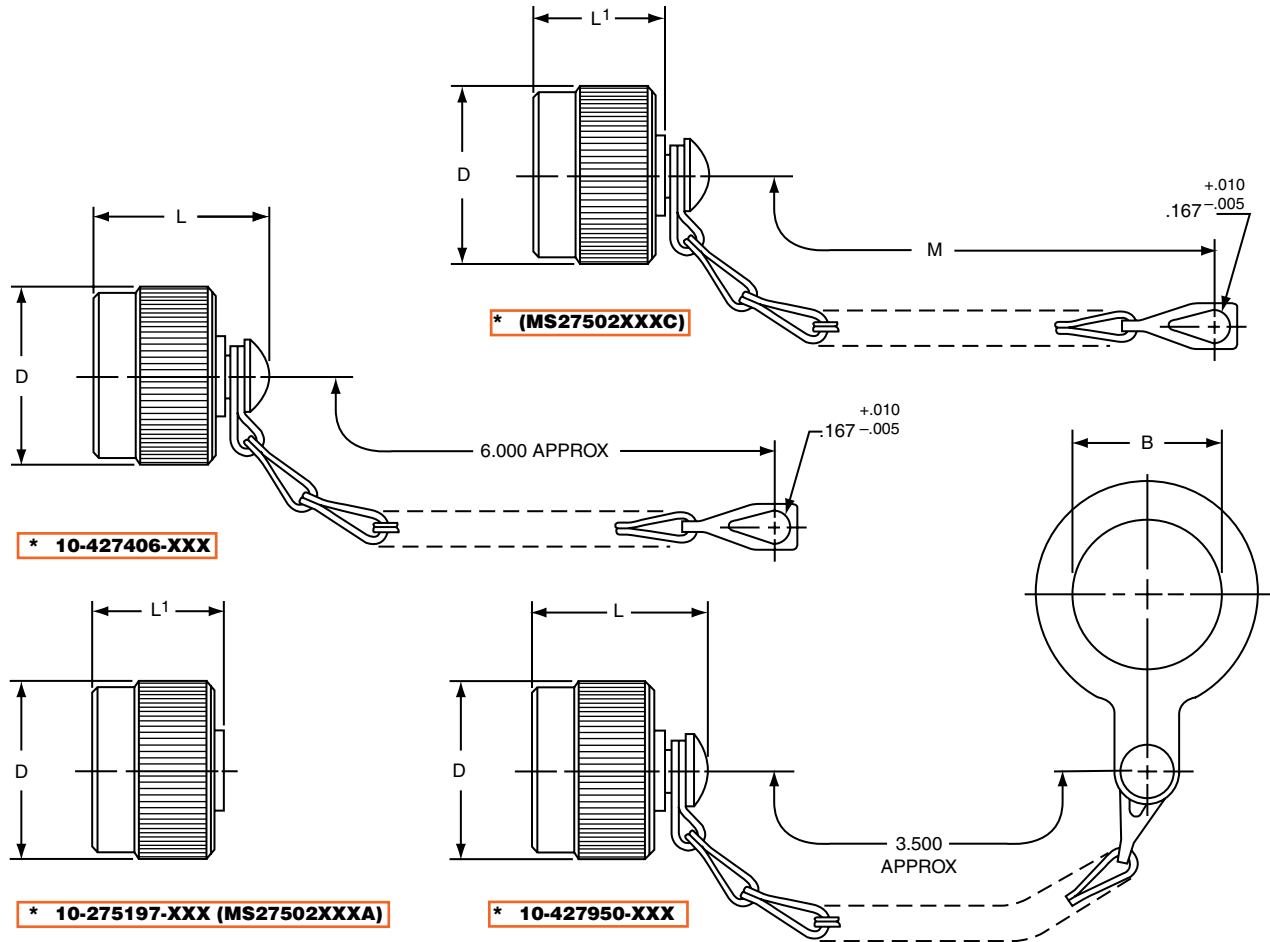
Finish	10- Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic coating	-XX5		
Cadmium Plate Nickel base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless nickel	-XXG	FXXC	FXXA

All dimensions for reference only.



# MIL-DTL-38999, Series I LJT Receptacle Protection Cap

## Series I LJT



For MS stamping identification, accessories must be ordered by MS part number.  
If ordered by 10- part number, they will be stamped with said number.

\*To complete order number, add shell size and suffix number.

For example, shell size 11 with cadmium plate, nickel base would be 10-427406-117, MS27502A11C, MS27502A11A.

Shell Size	B Dia. $+0.010$ $-0.000$	D Dia. Max.	L Max.	L' Max	M $\pm 0.250$
9	.703	.844	1.070	.844	3.000
11	.844	.969	1.070	.844	3.000
13	1.016	1.125	1.070	.844	3.500
15	1.141	1.250	1.070	.844	3.500
17	1.266	1.406	1.070	.844	3.500
19	1.391	1.500	1.070	.844	3.500
21	1.516	1.625	1.070	.844	4.000
23	1.641	1.750	1.070	.844	4.000
25	1.766	1.875	1.089	.875	4.000

Finish	10-Number Suffix	MS Number Suffix with chain	MS Number Suffix without chain
Chromate treat	-XX0		
Anodic coating	-XX5	CXXC	CXXA
Cadmium Plate Nickel base	-XX7	AXXC	AXXA
Olive Drab, Cadmium, Nickel base	-XX9	BXXC	BXXA
Electroless Nickel	-XXG	FXXC	FXXA

All dimensions for reference only.

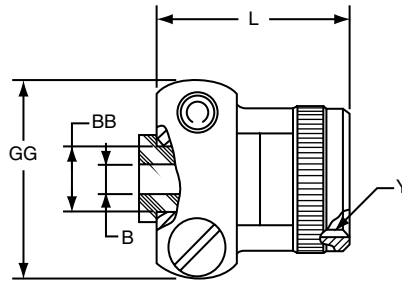
- 38999  
SJT I II III
- 26482  
Matrix 2
- 83723 III  
Matrix Pyle
- 5015  
Crimp Rear Release Matrix
- 26500 Pyle
- Printed  
Circuit Board
- EMI Filter  
Transient
- Fiber Optics
- High Speed  
Contacts
- Options  
Others

# MIL-DTL-38999, Series I LJT

## Strain Relief (Solder Type)



Series I LJT



**\* 10-436792-XXX**

For military type cable clamp see MS27506 or M85049/49 on page 98.

\*To complete order number, add shell size and suffix number.

Finish	10-Number Suffix
Chromate treat	-XX0
Anodic coating	-XX5
Cadmium Plate Nickel base	-XX7
Olive Drab, Cadmium, Nickel base	-XX9
Electroless Nickel	-XXG

For example: Shell size 11 with cadmium plate, nickel base would be **10-436792-117**.

Shell Size	B Dia. +.010 - .025	L Max.	Y Thread Class 2B (Plated)	GG Max.	BB Dia. +.000 - .011
9	.125	.859	.4375-28 UNEF	.775	.250
11	.188	.859	.5625-24 UNEF	.837	.312
13	.312	.859	.6875-24 UNEF	.963	.438
15	.375	1.109	.8125-20 UNEF	1.087	.562
17	.500	1.109	.9375-20 UNEF	1.150	.625
19	.625	1.109	1.0625-18 UNEF	1.400	.750
21	.625	1.109	1.1875-18 UNEF	1.400	.750
23	.750	1.234	1.3125-18 UNEF	1.587	.938
25	.800	1.234	1.4375-18 UNEF	1.681	1.000

All dimensions for reference only.

III  
II  
I  
SJT

38999  
26482  
Matrix 2

83723 III  
Matrix  
Pyle

5015  
Crimp Rear  
Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others



# MIL-DTL-38999, Series I LJT, II JT MIL-DTL-38999, Series I LJT, II JT

## Thermocouple Contacts, Plastic Caps, Sealing Plugs

Series II JT

Series I LJT

### THERMOCOUPLE CONTACTS

Contact Size	Material	JT/LJT Pins	JT Sockets	LJT Sockets
20	Chromel	10-407862-310	10-407863-310	10-407236-310
	Alumel	10-407862-320	10-407863-320	10-407865-320
	Iron	10-407862-335	10-407863-335	10-407865-335
	Constantan	10-407862-342	10-407863-342	10-407865-342

Partial Listing. If you do not see the contact for your application, consult Powell Electronics.

### THERMOCOUPLE CONTACTS PYLE VERSION

Contact Size	Pins (JT/LJT)		Sockets (LJT)		Material
	Spec Number	Pyle Number	Spec Number	Pyle Number	
22D	M39029/87-472	T3-4022-10P	M39029/88-484	T3-4122-10P	CHROMEL
22D	M39029/87-471	T3-4022-10R	M39029/88-483	T3-4122-10R	ALUMEL
20	M39029/87-476	T3-4020-10P	M39029/88-488	TS-4120-10P	CHROMEL
20	M39029/87-475	T3-4020-10R	M39029/88-487	T3-4120-10R	ALUMEL
16	M39029/87-480	T3-4016-10P	M39029/88-492	T3-4116-10P	CHROMEL
16	M39029/87-479	T3-4016-10R	M39029/88-491	T3-4116-10R	ALUMEL

### PLASTIC PROTECTION CAPS

Shell Size	Plug	Receptacle
8	10-70500-10	10-70506-10S
9	10-70506-14	10-70500-10
10	10-70506-14	10-70506-12
11	10-70506-16	10-70500-12
12	10-70506-16	10-70506-14
13	10-70506-18	10-70500-14
14	10-70506-18	10-70506-16
15	10-70506-20	10-70500-16
16	10-70506-20	10-70506-18
17	10-70506-22	10-70500-18
18	10-70506-22	10-70506-20
19	10-70506-24	10-70500-20
20	10-70506-24	10-70506-22
21	10-70576-24	10-70500-22
22	10-70576-24	10-70506-24
23	10-70506-28	10-70500-24
24	10-70506-28	10-70576-24
25	10-558651-25	10-70506-28

### SEALING PLUGS

Contact Size	Commercial No.	Military No.
8 (Coax)	10-482099-8	MS27488-8
8 (Twinax)	T3-4008-59P	N/A
10 (Power)	10-576225	N/A
12	10-405996-12	MS27488-12
16	10-405996-16	MS27488-16
20	10-405996-20	MS27488-20
22	10-405996-22	MS27488-22
22M	10-405996-22	MS27488-22
22D	10-405996-22	MS27488-22

38999  
SJT I II III

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear  
Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others



SJT

38999  
III  
II  
I  
SJT

26482  
Matrix 2

83723 III  
Matrix  
Pyle

5015  
Crimp Rear  
Release Matrix

26500 Pyle

Printed  
Circuit Board

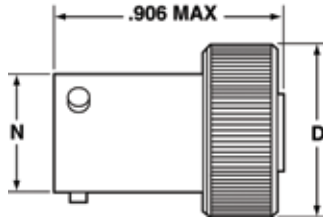
EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

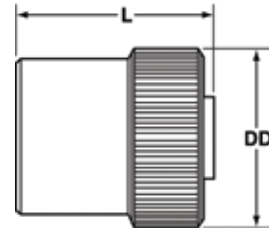
Options  
Others

### PLUG PROTECTION CAP

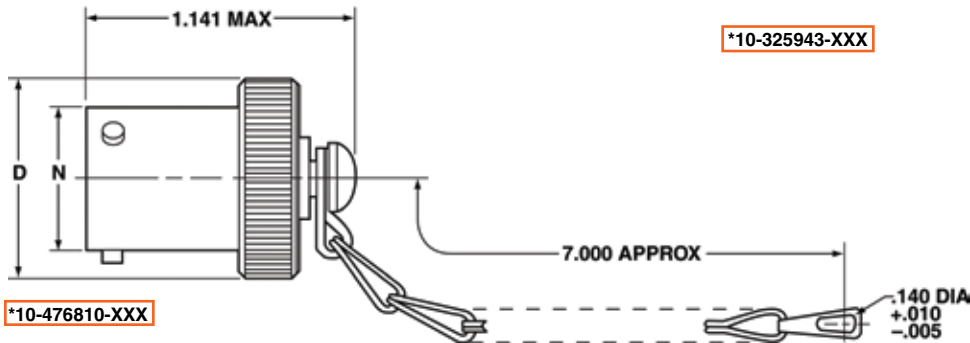


\*10-476801-XXX

### RECEPTACLE PROTECTION CAP



\*10-325943-XXX



\*10-476810-XXX

\*To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, [10-476810-107](#).

Plug Shell Size	D Dia. Max.	N Dia. +.001 - .005
8	.688	.473
10	.812	.590
12	.969	.750
14	1.094	.875
16	1.219	1.000
18	1.344	1.125
20	1.469	1.250
22	1.594	1.375
24	1.719	1.500

All dimensions for reference only

\*To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, [10-325943-107](#).

Receptacle Shell Size	DD Dia. Max.	L Max.
8	.734	.828
10	.844	.828
12	1.016	.828
14	1.141	.828
16	1.265	.828
18	1.391	.828
20	1.500	.828
22	1.625	.828
24	1.750	.859

Finish  
Bright Cadmium Plated Nickel Base  
Anodic Coating (Alumilite)  
Chromate Treated (Iridite 14-2)  
Olive Drab Cadmium Plate Nickel Base  
Electroless Nickel Coating

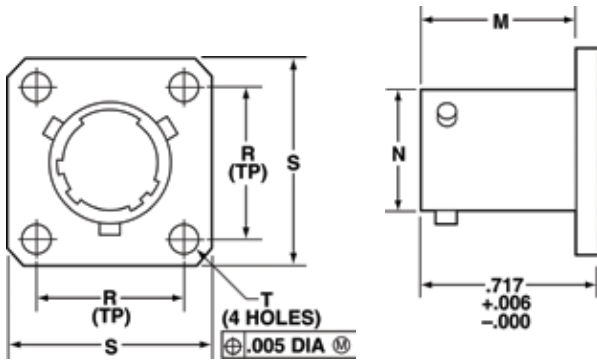
Suffix  
XX7  
XX5  
XX0  
XX9  
XXG



# SJT Dummy Receptacle, Cable Clamp

SJT

## DUMMY RECEPTACLE



\*10-476807-XXX

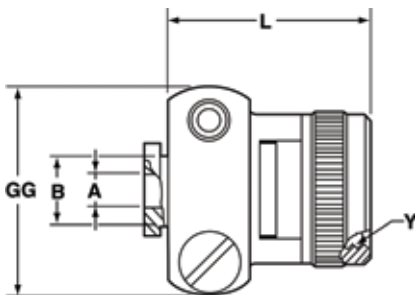
Finish	Suffix
Bright Cadmium Plated Nickel Base	XX7
Anodic Coating (Alumilite)	XX5
Chromate Treated (Iridite 14-2)	XX0
Olive Drab Cadmium Plate Nickel Base	XX9
Electroless Nickel Coating	XXG

\* To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, 10-476807-107.

Dummy Receptacle Shell Size	D Dia. Max.	L Max.
8	.734	.828
10	.844	.828
12	1.016	.828
14	1.141	.828
16	1.265	.828
18	1.391	.828
20	1.500	.828
22	1.625	.828
24	1.750	.859

All dimensions for reference only

## CABLE CLAMP



\*10-476808-XXX

Finish	Suffix
Bright Cadmium Plated Nickel Base	XX7
Anodic Coating (Alumilite)	XX5
Chromate Treated (Iridite 14-2)	XX0
Olive Drab Cadmium Plate Nickel Base	XX9
Electroless Nickel Coating	XXG

\* To complete order number, add shell size and suffix number. For example, shell size 10 with bright cadmium plated nickel base, 10-476808-107.

Cable Clamp Shell Size	A Dia. +.010 - .025	B Dia. +.000 - .011	L Max.	Y Thread Class 2B UNEF (Plated)	GG Max.
8	.125	.250	.922	.4375-28	.775
10	.188	.312	.922	.5625-24	.837
12	.312	.438	.922	.6875-24	.963
14	.375	.562	1.172	.8125-20	1.087
16	.500	.625	1.172	.9375-20	1.150
18	.625	.750	1.172	1.0625-18	1.400
20	.625	.750	1.172	1.1875-18	1.400
22	.750	.938	1.297	1.3125-18	1.587
24	.800	1.000	1.297	1.4375-18	1.681

All dimensions for reference only

- 38999 III
- SJT I II III
- 26482 Matrix 2
- 83723 III Pyle Matrix
- 5015 Crimp Rear Release Matrix
- 26500 Pyle
- Printed Circuit Board
- EMI Filter Transient
- Fiber Optics
- High Speed Contacts
- Options Others



SJT

III  
II  
I  
SJT  
38999

Matrix 2  
26482

Matrix  
Pyle  
83723 III

Release Matrix  
Crimp Rear  
5015

Pyle  
26500

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others

### CONTACTS & SEALING PLUGS

Contact Size	SJT Pins	SJT Sockets	Sealing Plugs
8 (Coax)	21-33102-21**	21-33101-21**	10-482099-8
8 (Twinax)	21-33190-529†	21-33191-530†	10-482099-8
10 (Power)	10-251415-105	10-407035-105	Not Available
12	10-251415-12H	10-407035-125	10-405996-12 Yellow
16	10-251415-165	10-407035-165	10-405996-16 Blue
20	10-251415-205	10-407035-205 10-497403-205††	10-405996-20 Red
22*	10-251415-225	10-407035-225	10-405996-22 Black
22M*	10-251415-235	10-407035-235	10-405996-22 Black
22D	10-251415-725	10-407035-725	10-405996-22 Black

Above part numbers include standard finish designation – gold plating over suitable underplate in accordance with SAE AS39029. For other finish variations, consult Powell Electronics.

\* Inactive for new design.

\*\* 21-33102-21 and 21-33101-21 are for use with RG180B/U and RG195A/U cable. For other size 8 coax or optional sizes 12 and 16 coax contacts available for use in SJT connectors, see catalog 12-130 or consult Powell Electronics.

† 21-33190-529 and 21-33191-530 are for use with M17/176-00002 cable.

†† Optional design – see slash sheet MS39029.

For other contact options available for use in SJT connectors, (wire-wrap, thermocouple, fiber optic) consult Powell Electronics.

### PLASTIC PROTECTION CAPS

Shell Size	Plug	Receptacle
8	10-70500-10	10-70506-10S
10	10-70500-14	10-70506-12
12	10-70500-16	10-70506-14
14	10-70500-18	10-70506-16
16	10-70500-20	10-70506-18
18	10-70500-22	10-70506-20
20	10-70500-24	10-70506-22
22	10-70524-1	10-70506-24
24	10-70506-28	10-70524-1



# MIL-DTL-38999, Series III TV, II JT, I LJT Universal "Header Assembly"

## for Flex Print or PC Board

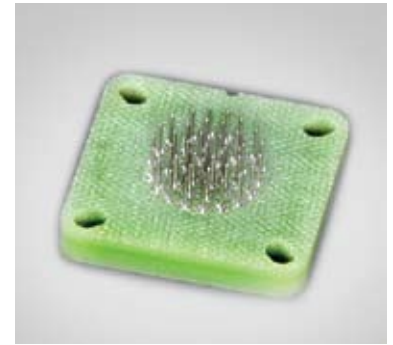
Series III TV

Series II JT

Series I LJT

### Mounts to all MIL-DTL-38999 and \*MIL-DTL-26482 Connectors

Termination of PC tail connectors to a flex print or a printed circuit board represents a major cost in the manufacturing process for users. When adding flex or printed circuit board assemblies to an expensive filter or filter/transient protection connector, the total cost of a failed solder joint, a bent pin, or an unanticipated electrical failure becomes prohibitive. The universal header assembly from Amphenol provides for easy separation of the connector from the board on these occasions. The header assembly is comprised of a short pin/socket contact. The tail end of the contact is soldered to the through hole of the flex or printed circuit board. The socket is embedded in the insulator, making electrical contact with the printed circuit tail of the connector.



Headers provide easy separation of the connector from the PC board.

### Header Assemblies Provide Cost Savings

Incorporation of the header assembly provides the user with time and cost saving potentials. These header assemblies can be vapor phase or wave soldered to flex or printed circuit boards prior to the receipt of the EMI/EMP connector. Headers can be installed to standard connectors, allowing for electrical testing that would adversely affect the sensitive diodes, MOV's or capacitors in the EMI/EMP connectors. Expensive connector assemblies can be easily removed from and reattached to the header assembly as the manufacturing process dictates.

### Mounting Applications

Shell modifications are recommended, but are not necessary. The header assembly can be attached to connectors with standard flange placement or directly to the circuit board. The ideal application would involve either a single flange moved all the way to the rear of the connector or a double flange. Cinch nuts can be installed in either flange to allow easier mounting to the panel or the header assembly. The forward flange would mount the connector to the panel; the rear flange would be used to mount the header assembly. Various types of captivated or loose attaching screws can be utilized for unique applications.

Amphenol universal headers are slotted to allow mounting to all series of MIL-DTL-38999 or MIL-DTL-26482\* connectors without special alterations. They are of similar dimension as the flange of the mounting connector and are approximately .185 inches (4.70 mm) thick.

\* For information on Header Assemblies for MIL-DTL-26482 connector consult Powell Electronics.

### Cylindrical Configuration

- 3 PCB stickout dimensions are available.
- Size 22 contacts use .175 thick headers
- Size 16 to 20 contacts use .195 thick headers
- Consult Powell Electronics for additional configurations.
- Headers for cylindrical connectors accommodate up to 128 pins. For MIL-DTL-38999 insert arrangements chart see pages 4-7 and insert drawings on pages 8-14.

### Mounting to Rectangular ARINC Connectors

- Headers for ARINC connector arrangements accommodate up to 150 pins
- Consult Powell Electronics for ARINC configurations and detailed dimensions.

### Materials

- Body is molded or machined from FR-4.
- Electrical engagement areas of the header contact are plated with .00003 inches minimum of gold over .00005 inches minimum of nickel.

See drawing of standard header on next page.

38999  
SJT I II III

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others

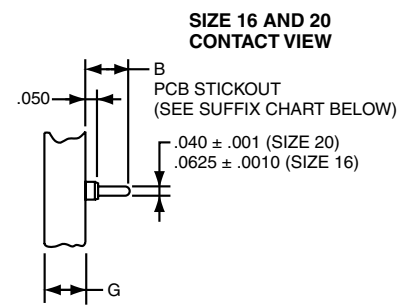
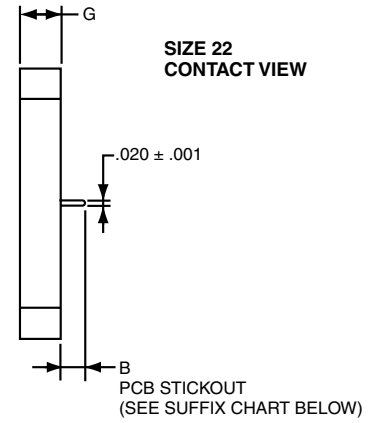
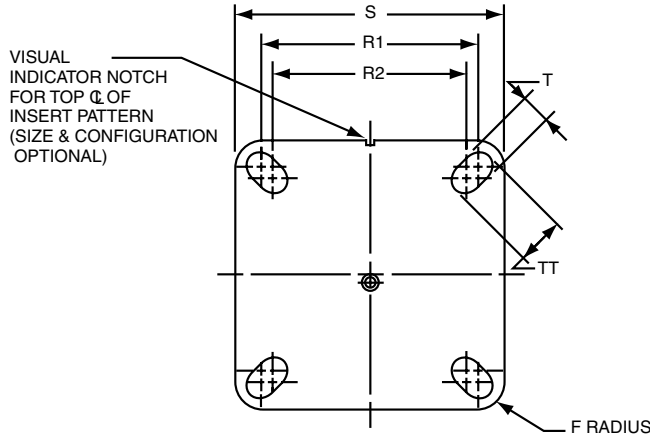
# MIL-DTL-38999, Series III TV, II JT, I LJT

## Universal "Header Assembly" for Flex Print or PC Board Connectors



**Series III TV**    **Series II JT**    **Series I LJT**

The drawing below shows the standard header assembly for use with MIL-DTL-38999 connectors. Consult Powell Electronics for drawings of headers for ARINC configurations.



Assembly Part Number	Shell Size	F Radius	G ± .005	S ± .005	T + .008 - .006	R1 TP†	R2 TP†	TT + .008 - .006
21-904008-XX()	8/9	.094		.938	.128	.719	.594	.216
21-904010-XX()	10/11	.094		1.031	.128	.812	.719	.194
21-904012-XX()	12/13	.094		1.125	.128	.906	.812	.194
21-904014-XX()	14/15	.125		1.219	.128	.969	.906	.173
21-904016-XX()	16/17	.125		1.312	.128	1.062	.969	.194
21-904018-XX()	18/19	.125		1.438	.128	1.156	1.062	.194
21-904020-XX()	20/21	.125		1.562	.128	1.250	1.156	.194
21-904022-XX()	22/23	.125		1.688	.154	1.375	1.250	.242
21-904024-XX()	24/25	.125		1.812	.154	1.500	1.375	.242

See Suffix Chart

Assemblies containing Size 22 contacts only: .175  
Assemblies containing Size 16 or 20 contacts: .195

† TP designates true position dimensioning.

NOTE:  
Size 22 accepts .018 to .022 dia. PCB tails.  
Size 16 accepts .048 to .064 dia. PCB tails.  
Size 20 accepts .037 to .043 dia. PCB tails.

### HOW TO ORDER INFORMATION

#### For Header Assembly with MIL-DTL-38999 Connectors

Use coded number as follows:

**21-9040 XX - XX X**

Designates Amphenol Header Assembly \_\_\_\_\_  
Shell size designation for MIL-DTL-38999 Series I, II, III and IV see Suffix chart. \_\_\_\_\_  
Arrangement number - See MIL-STD-1560 or MIL-STD-1669. See insert availability charts on pages 4-7. \_\_\_\_\_  
Contact PCB Stickout designation See Suffix chart. \_\_\_\_\_

For how to order information on adapters to be used with ARINC connectors, consult Powell Electronics.

### ASSEMBLY NUMBER SUFFIX CHART

Shell Size Designation*	Arrangement Number Suffix***	Contact PCB Stickout**	
		Suffix	B ± .015 Stickout
08	Insert Arrangement Suffix from MIL-STD-1560 or MIL-STD-1669	1	.120
10		2	.185
12		3	.270
14			
16			
18			
20			
24			

\*Shell size designation for MIL-DTL-38999 Series I, II, III and IV and MIL-DTL-26482 Series 1 and 2.

Examples: Shell size 9 use 08. Shell size 25 use 24.

\*\* Size 22 contacts available in all 3 stickout lengths. Size 16 and 20 contacts available only in .185 and .270 lengths.

\*\*\* Insert arrangement 14-97 and 15-97 are not available at this time. Consult Powell Electronics for information.

- 38999
- III
- II
- I
- SJT
- 26482 Matrix 2
- 83723 III Matrix Pyle
- 5015 Crimp Rear Release Matrix
- 26500 Pyle
- Printed Circuit Board
- EMI Filter Transient
- Fiber Optics
- High Speed Contacts
- Options Others



# MIL-DTL-38999, Series I LJT, II JT, III TV, & SJT Application Tools

Series III TV	Series II JT	Series I LJT	SJT
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The following data includes information pertaining to the application tools which have been established for crimping, inserting, and removing contacts incorporated in the TV, CTV and MIL-DTL-38999 Series III connectors. For additional information on coax, twinax and triax contact tools see High Speed Contact section of this catalog. All crimping tools included are the "full cycling" type and when

used as specified in the installation instructions (L-624 and L-844) covering the TV, CTV and MS series connectors, will provide reliable crimped wire to contact terminations. There is a possibility of additional crimping tools other than those included being available at present or in the future for this specific application.

### CRIMPING TOOLS

Contact Size/Type	Crimping Tool	Turret Die or Positioner
12 Pin and Socket	M22520/1-01	M22520/1-04
16 Pin and Socket	M22520/1-01 M22520/7-01	M22520/1-04 M22520/7-04
20 Pin and Socket	M22520/1-01 M22520/2-01 M22520/7-01	M22520/1-04 M22520/2-10 M22520/7-08
22, 22D, 22M Pin	M22520/2-01 M22520/7-01	M22520/2-09 M22520/7-07
22, 22D, 22M Socket Series I, III	M22520/2-01 M22520/7-01	M22520/2-07 M22520/7-05
22D Socket Series II	M22520/2-01 M22520/7-01	M22520/2-06 M22520/7-06
8 Twinax Center Pin and Socket	M22520/2-01	M22520/2-37
8 Twinax Intermediate Outer Pin & Socket	M22520/5-01	M22520/5-200

Contact Size/Type	Crimping Tool	Turret Die or Positioner
8 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-31
8 Coaxial Outer Pin and Socket	M22520/5-01	M22520/5-05 Die Closure B
	M22520/5-01	M22520/5-41 Die Closure B
	M22520/10-01	M22520/10-07 Die Closure B
16 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-35
16 Coaxial Outer Pin and Socket	M22520/4-01	M22520/4-02
12 Coaxial Inner Pin and Socket	M22520/2-01	M22520/2-34
12 Coaxial Outer Pin and Socket	M22520/31-01	M22520/31-02
10 (Power)	TP-201423	

Where 2 or 3 tools are listed for a contact size, only one tool and its die or positioner are required to crimp the contact. The above crimping tools and positioners are available from the approved tool manufacturer.

### INSERTION TOOLS

Use with Contact Size	Plastic Tools		Metal Tools			
	MS Part Number	Color	Angle Type		Straight Type	Color
			MS Part No.	Commercial Part No.	Commercial Part No.	
10 (Power)	M81969/14-05*	Gray / (White)	M81969/8-11	†	†	Green
12	M81969/14-04*	Yellow / (White)	M81969/8-09	11-8674-12	11-8794-12	Yellow
16	M81969/14-03*	Blue / (White)	M81969/8-07	11-8674-16	11-8794-16	Blue
20	M81969/14-10*	Red / (Orange)	M81969/8-05	11-8674-20	11-8794-20	Red
22	M81969/14-09	Brown/White	M81969/8-03	11-8674-22	11-8794-22	Brown
22D, 22M	M81969/14-01*	Green / (White)	M81969/8-01	11-8674-24	11-8794-24	Black
8 Coaxial	None Required					
8 Twinax	None		M81969/46-06**	None		Red

### REMOVAL TOOLS

Use with Contact Size	Plastic Tools			Metal Tools			
	MS Part Number	Color	For Unwired Contacts Commercial Part No.	Angle Type		Straight Type	Color
				MS Part No.	Commercial Part No.	Commercial Part No.	
10 (Power)	M81969/14-05*	(Gray) / White	†	M81969/8-12	†	†	Green / White
12	M81969/14-04*	(Yellow) / White	11-10050-11	M81969/8-10	11-8675-12	11-8795-12	Yellow / White
16	M81969/14-03*	(Blue) / White	11-10050-10	M81969/8-08	11-8675-16	11-8795-16	Blue / White
20	M81969/14-10*	(Orange) / Red	11-10050-9	M81969/8-06	11-8675-20	11-8795-20	Red / Orange
22	M81969/14-09*	(Brown)/White	11-10050-8	M81969/8-04	11-8675-22	11-8795-22	Brown/White
22D, 22M	M81969/14-01*	(Green) / White	11-10050-7	M81969/8-02	11-8675-24	11-8795-24	Green / White
8 Coaxial	M81969/14-12	Green	None	None	11-9170	DRK264-8††	N/A
8 Twinax	M81969/14-12	Green	None	M81969/46-12**	11-9170	N/A	N/A

The M81969/8, 11-8674, 11-8675, and 11-8794 metal contact insertion and removal tools will accommodate wires having the maximum outside diameter as follows: Contact size 12: dia. is .155, size 16: dia. is .109, size 20: dia. is .077, size 22D: dia. is .050. When wire diameters exceed those specified, the plastic tools must be used.

\* Double end insertion/removal tool.

\*\* Twinax insertion tools are available only in a straight type, metal version.

† To be determined.

†† Contact Daniels Manufacturing Co. for availability.

38999  
SJT I II III

26482  
Matrix 2

83723 III  
Matrix Pyle

5015  
Crimp Rear Release Matrix

26500 Pyle

Printed  
Circuit Board

EMI Filter  
Transient

Fiber Optics

High Speed  
Contacts

Options  
Others