

# Amphenol JT MIL-DTL-38999 Series II



## LIGHT-WEIGHT, SPACE-SAVING DESIGN

Amphenol's MIL-DTL-38999 series II JT miniature connectors offer high-density contact arrangements in a small size. They were designed for high-performance requirements, including military and commercial aviation applications. They are environmentally-sealed and have a wide operating temperature range.

- Intermateable with Deutsch, ITT Cannon, Souriau and all MIL-DTL-38999 series II connectors
- Formerly MIL-C-38999

## APPLICATIONS

- High-performance military aircraft
- Commercial airlines
- Communications equipment
- Missiles
- Test equipment
- Ships

## FEATURES

### HIGH-RELIABILITY

MIL-DTL-38999 series II - JT style connectors are used in performance aircraft that demand reliable connections in some of the most rigorous environments. The connectors must perform flawlessly under wide temperature ranges, high vibrations, and be resistant to a vast array of contaminants.

### LOW-PROFILE CONNECTOR DESIGN

JT's require a fraction of the space needed to mate most other high-performance connectors, permitting use in areas that would be impossible for other mating systems.

### LIGHT-WEIGHT

Today's aircraft designs require connectors that are very light-weight. Saving weight on the connector systems allows the aircraft to carry more fuel, maximizing its range or payload-carrying capacity.

### HIGH-DENSITY CONNECTORS

JT connectors offer up to 128 contacts per connector. Ideally-suited for the demands of today's digital electronics that are used on fly-by wire aircraft, advanced robotics, and critical industrial equipment.

### OPERATES AT EXTREME TEMPERATURES

These connectors will operate in temperatures from -85°F to +392°F (-65°C to +200°C)

### QUICK-MATING COUPLING SYSTEMS

Three-point bayonet coupling nuts provide fast, one-third-turn connector mating. Mating is easily verified with an audible and tactile "click" and a bayonet pin sighting hole located in the coupling nut.

### BROAD RANGE OF MILITARY AND COMMERCIAL ACCESSORIES

Many military-standard endbells to MIL-C-85049 specifications and a wide array of cable termination styles are available. Straight, 45- and 90-degree endbells come in many styles from low-cost, standard clamp to shielded, environmentally-sealed.

### MIL-DTL-38999 APPROVED

JT's are fully-intermateable and intermountable with all other MIL-DTL-38999 series II connectors.

## TECHNICAL SPECIFICATIONS

## MATERIALS AND FINISHES

Shell	Aluminum alloy
Platings	A - Clear chromate over cadmium over electroless nickel per QQ-P-416 B - Olive drab chromate over cadmium over electroless nickel per QQ-P-416 F - Electroless nickel per QQ-N-290 C - Hard, anodic, non-conductive in accordance with MIL-A-862 W52 - Olive drab zinc cobalt
Contacts	Copper alloy
Plating	Gold-plated, 50 microinches per MIL-G-45204 type II, grade C, class 1
Insulator	Hard dielectric wafer that contains metal retention tines for high-reliability retention of crimp contacts
Grommet & Seals	Silicone-based elastomer
Grounding Springs	Beryllium copper (Grounded plug only)

## ELECTRICAL DATA

Operating Voltage &amp; Test Voltage (unmated condition)

TEST VOLTAGES	N	SERVICE RATING M	I	II
SEA LEVEL	1000	1300	1800	2300
100,000 FEET	200	200	200	200

Current Rating by Contact Size &amp; Wire Accommodation (Test Amps)

WIRE SIZE	22D	22M*	22 *	20	16	12
28	1.5	1.5	-	-	-	-
26	2.0	2.0	2.0	-	-	-
24	3.0	3.0	3.0	3.0	-	-
22	5.0	-	5.0	5.0	-	-
20	-	-	-	7.5	7.5	-
18	-	-	-	-	10.0	-
16	-	-	-	-	13.0	-
14	-	-	-	-	-	17.0
12	-	-	-	-	-	23.0

Contact Resistance of Mated Contacts End-to-End

CONTACT SIZE	MAXIMUM MILLIVOLT DROP
22D	73
22M*	45
22*	73
20	55
16	49
12	42

Insulation Resistance 5,000 megohms minimum

## MECHANICAL

Operating Temperature	A - Plating -65°C to 150°C (-85°F to 302°F) B - Plating -65°C to 175°C (-85°F to 347°F) F - Plating -65°C to 200°C (-85°F to 392°F) C - Anodic (non-conductive) -65°C to 200°C (-85°F to 392°F) W52 - Plating -65°C to 150°C (-85°F to 302°F)
Sealing	Against sand, dust per MIL-STD-202 & ice resistance
Wire Sealing Range	

CONTACT SIZE	MINIMUM INCHES	MAXIMUM INCHES	MINIMUM MM	MAXIMUM MM
22D	0.030	0.054	0.76	1.37
22M*	0.030	0.050	0.76	1.27
22*	0.034	0.060	0.60	1.52
20	0.040	0.083	1.02	2.11
16	0.065	0.109	1.65	2.77
12	0.097	0.142	2.46	3.61

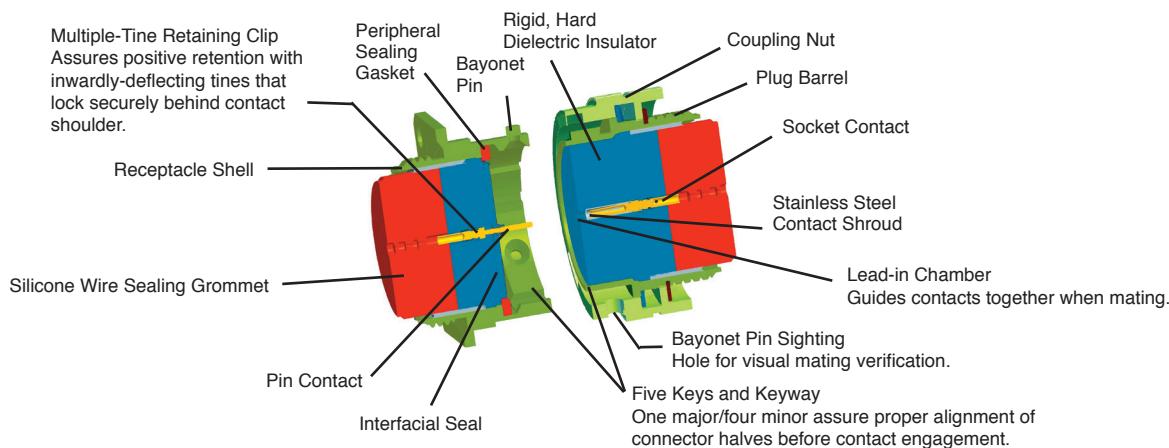
## TECHNICAL SPECIFICATIONS

	Insulation Strip Length	CONTACT SIZE	STRIP LENGTH															
		22*, 22D or 22M*	.125 (3.18)															
		20	.188 (4.77)															
		16	.188 (4.77)															
		12	.188 (4.77)															
Mating Life	500 cycles minimum: 250 for plug with grounding fingers (JTG06)																	
Salt Spray	Finish A: 48-hour per MIL-STD-1344A method 1001 condition B Finish B: 500-hour per MIL-STD-1344A method 1001 condition C Finish F: 48-hour per MIL-STD-1344A method 1001 condition B Finish C: 500-hour per MIL-STD-1344A method 1001 condition C Finish W52: 48-hour																	
Heat	Finish A: 150°C (302°F) Finish B: 175°C (347°F) Finish F: 200°C (392°F) 1000 hours to MIL-STD-1344 method 1005 Finish C: 200°C (392°F) Finish W52: 175°C (347°F)																	
Chemical Resistance	Lubricating oils, hydraulic fluids, coolants, deicing fluids per MIL-STD-1344A Method 1016 condition A-1																	
Sine Vibration	Not applicable																	
Random Vibration	43.7 grms at ambient temperatures																	
Shock	300g ±15% for 3 ±1 milliseconds per MIL-DTL-38999L 4.7.23																	
EMI-Shielding Effectiveness	100 MHz to 10 GHz - minimum attenuation of 45dB																	
Contact Type	Crimp, fibre optic, coax, twinax, or printed circuit																	
Number of Circuits	2 to 128																	
Contact Insertion	Rear insertion/rear extraction with simple plastic or high-quality metal hand-tools.																	
Contact Retention	Per MIL-C-38999L tested to MIL-STD-1344A method 2007																	
	<table border="1"><thead><tr><th>CONTACT</th><th>AXIAL LOAD NEWTONS ±10%</th><th>AXIAL LOAD POUNDS ±10%</th></tr></thead><tbody><tr><td>22*, 22D, 22M*</td><td>44</td><td>10</td></tr><tr><td>20</td><td>67</td><td>15</td></tr><tr><td>16</td><td>111</td><td>25</td></tr><tr><td>12</td><td>111</td><td>25</td></tr></tbody></table>	CONTACT	AXIAL LOAD NEWTONS ±10%	AXIAL LOAD POUNDS ±10%	22*, 22D, 22M*	44	10	20	67	15	16	111	25	12	111	25		
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22*, 22D, 22M*	44	10																
20	67	15																
16	111	25																
12	111	25																
Polarization	Three-point bayonet coupling, five keyways with optional master keyway rotations, note insert and four fixed minor keyways.																	
Approvals	MIL-DTL-38999L																	

\* Inactive for new designs

All dimensions in inches (millimeters in parenthesis)

## CROSS-SECTION



## CREATE YOUR PART NUMBER

1	2	3A	4	3B	5	6	7
MS27474	T	24	F	35	P	A	-LC

SHELL STYLE CLASS SIZE PLATING LAYOUT CONTACT POLARIZATION (OMIT FOR NORMAL) MODIFIER

(military part number example) \*Note: Out of sequence

1	2	3	5	6	4*	7
JT07	RE-	24-35	P	A	-014	-LC

SHELL STYLE CLASS LAYOUT CONTACT POLARIZATION (OMIT FOR NORMAL) PLATING\* MODIFIER

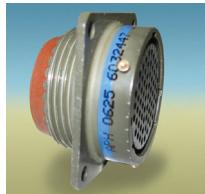
(Commercial part number example)

## STEP 1: SELECT SHELL STYLE, PLUG OR RECEPTACLE

## RECEPTACLES

Mates with

## PLUGS



**MS27472  
(JT00R)**

Front Mount with Accessory Threads.



**MS27497  
(JTPQ00R)**

Rear Mount with Accessory Threads.



**JT01R**

In-line with Accessory Threads.



**MS27473  
(JT06R)**

Standard



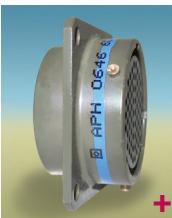
**MS27484  
(JTG06R)**

With Grounding Spring.



**MS27499E  
(JT02R)**

Front Mount. No Accessory Threads.



**MS27513E  
(JT02RE)**

Front Mount.



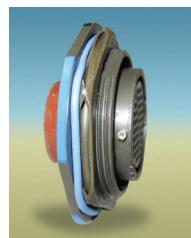
**MS27508E  
(JTP02RE)**

Rear Mount. No Accessory Threads.



**MS27500  
(JT08R)**

Available with PC pins. Contact us for details.



**MS27474  
(JTL07)**

Rear Mount. Jam Nut with Accessory Threads.  
Contact Us for Details

## STEP 2: SELECT CLASS



**E°** = Grommet & Compression Nut (not applicable to box mount receptacles)

**P°** = Potting Ring & Cup

**T°** = No Rear Accessories

**RE\*** = Grommet & Compression Nut (not applicable to box mount receptacles)

**RP\*** = Potting Ring & Cup

**RT\*** = No Rear Accessories

\* Most Popular Military Only=(°) Commercial=(\*)

### STEP 3: SELECT LAYOUT (LISTED BY SIZE)

For listing by # of contacts, see pages 206-208.

LAYOUT NUMBER	SERVICE RATING	CONTACTS						
		TOTAL NUMBER	22D	22M	22	20	16	12
8-35	M	6	6					
8-44	M	4			4			
8-98	I	3				3		
8-6	M	6		6				
10-4P•♦	I	4				4		
10-5	I	5				5		
10-13	M	13		13				
10-35	M	13	13					
10-98	I	6				6		
10-99	I	7				7		
12-3	II	3					3	
12-4	I	4					4	
12-8	I	8				8		
12-22	M	22		22				
12-35	M	22	22					
12-98	I	10				10		
14-4P•♦	I	4						4
14-5	II	5					5	
14-15	I	15				14	1	
14-18	I	18				18		
14-19•	I	19				19		
14-35	M	37	37					
14-37	M	37		37				
14-68P•♦	I	8					8	
14-97•	I	12				8	4	
16-6	I	6						6
16-8	II	8					8	
16-13P•♦	I	13						13
16-26	I	26				26		
16-35	M	55	55					
16-42	M	42			42			
16-55	M	55		55				
16-99	I	23				21	2	
18-11	II	11					11	
18-28	I	28				26	2	
18-30	I	30				29	1	
18-32	I	32				32		
18-35	M	66	66					
18-53	M	53				53		
18-66	M	66		66				
18-68P•♦	I	18					18	
18-96♦	I	9						9
20-1	M	79		79				
20-2	M	65			65			
20-11P•♦	I	11						11
20-16	II	16					16	
20-35	M	79	79					
20-39	I	39				37	2	
20-41	I	41				41		
22-1	M	100		100				
22-2	M	85			85			
22-14P•♦	I	14						14
22-21	II	21					21	
22-32	I	32				32		
22-35	M	100	100					
22-53P•♦	I	53				53		
22-55	I	55				55		
24-1	M	128		128				
24-2	M	100			100			
24-4	I	56				48	8	
24-19•	I	19						19
24-24	I	24					12	12
24-29	I	29					29	
24-35	M	128	128					
24-37	I	37						37
24-43P•♦	I	43				23	20	
24-61	I	61				61		

• NOT QPL'D ♦ Not Toolled for RP or 02RE P = Pin Insert Only

### STEP 4: SELECT PLATING

Finish	Military	Commerical	Commerical + SR
Cadmium-plated nickel base	A	-	SR
Olive drab cadmium-plated nickel base	B	014	386
Electroless nickel	F	023	424
Electroless nickel space-compatible	-	453	467
Anodic coating (Alumilite)	C	005	300
Chromate-tested (Iridite 14-2)	-	011	344
Passivated steel (Hermetic only)	E	-	-
Stainless steel	-	155	-
Olive drab zinc cobalt	-	W52	-

SR = Strain Relief

### STEP 5: SELECT CONTACT

Note: See Step 7 if not ordering contacts with part.

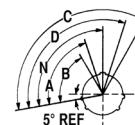
P = Pin  
S = Socket

A = Less Pin Contacts  
B = Less Socket Contact

### STEP 6: SELECT POLARIZATION

N = Normal Standard (Omit for normal)

A = Highly-Popular  
B = Limited Availability  
C = Check for Availability  
D = Check for Availability



Mating Face of Receptacle

SHELL SIZE	NORMAL	A	B	C	D
8	100	82	-	-	118
10	100	86	72	128	114
12	100	80	68	132	120
14	100	79	66	134	121
16	100	82	70	130	118
18	100	82	70	130	118
20	100	82	70	130	118
22	100	85	74	126	115
24	100	85	74	126	115

### STEP 7: SELECT MODIFIER

Note: LC is not marked on part

Omit for standard contacts  
LC = Less contacts, wire hole fillers and plastic insertion/extraction tool.  
(Purchase Order must state "Less Contacts")

## LAYOUT BY NUMBER OF CONTACTS

View of mating-face of pin insert



12 16 20 22 22D 22M

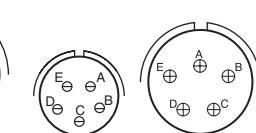
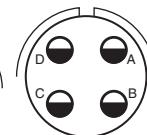
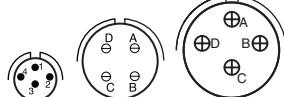
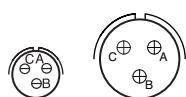
CONTACTS

3

4

5

6

Inactive.  
Use 8-35

LAYOUT  
# OF CONTACTS  
SERVICE RATING

8-98  
3-#20  
I12-3  
3-#16  
II8-44  
4-#22  
M10-4P♦  
4-#20  
I12-4  
4-#16  
I14-4♦  
4-#12  
I10-5  
5-#20  
I14-5  
5-#16  
II8-6  
6-#22M  
M8-35  
6-#22D  
M

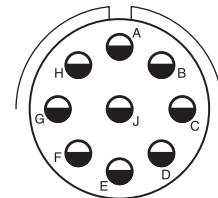
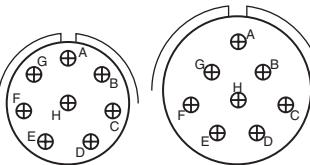
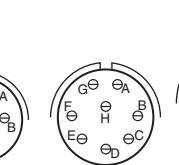
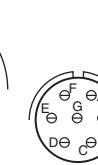
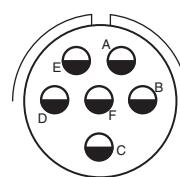
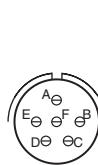
CONTACTS

6

7

8

9



LAYOUT  
# OF CONTACTS  
SERVICE RATING

10-98  
6-#20  
I16-6  
6-#12  
I10-99  
7-#20  
I12-8  
8-#20  
I14-68♦  
8-#16  
I16-8  
8-#16  
II18-96♦  
9-#12  
I

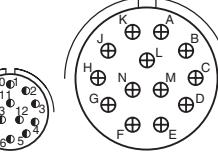
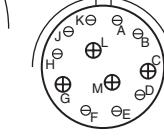
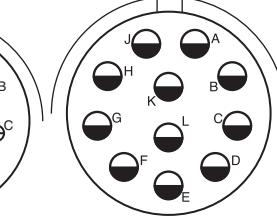
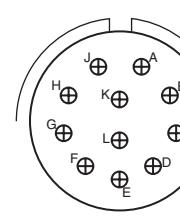
CONTACTS

10

11

12

13

Inactive.  
Use 10-35

LAYOUT  
# OF CONTACTS  
SERVICE RATING

12-98  
10-#20  
I18-11  
11-#16  
II20-11P♦  
11-#12  
I14-97•  
8-#20, 4-#16  
I10-13  
13-#22M  
M10-35  
13-#22D  
M16-13♦  
13-#16  
M

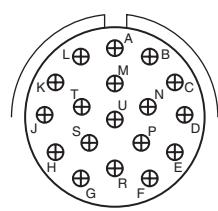
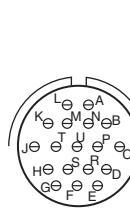
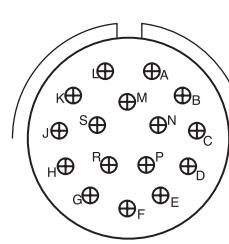
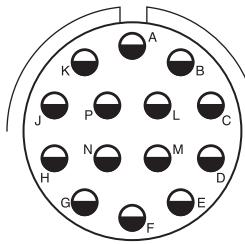
CONTACTS

14

15

16

18



LAYOUT  
# OF CONTACTS  
SERVICE RATING

22-14♦  
14-#12  
I14-15  
14-#20, 1-#16  
I20-16  
16-#16  
II14-18  
18-#20  
I18-68♦  
18-#16  
I

• NOT QPL'D ♦Not Toolled for RP or 02RE P = Pin Insert Only

Contact us for more information.

## LAYOUT BY NUMBER OF CONTACTS

View of mating-face of pin insert

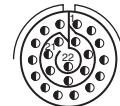
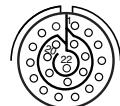
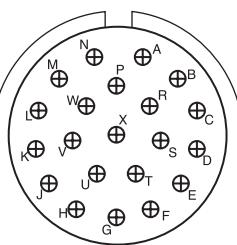
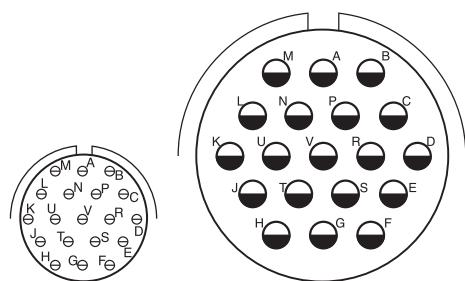
● ○ + - • • ◊ ◊  
12 16 20 22 22D 22M

CONTACTS

19

21

22

Inactive.  
Use 12-35

LAYOUT

# OF CONTACTS  
SERVICE RATING

14-19\*

19-#20

I

24-19\*

19-#12

I

22-21

21-#16

II

12-22

22-#22M

M

12-35

22-#22D

M

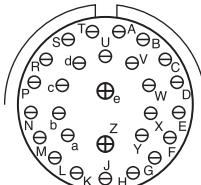
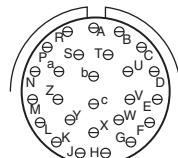
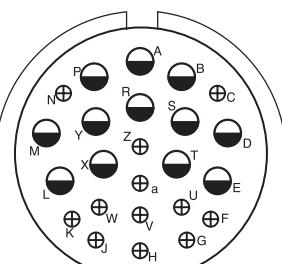
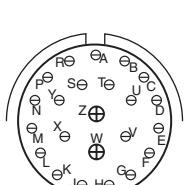
CONTACTS

23

24

26

28



LAYOUT

# OF CONTACTS  
SERVICE RATING

16-99

21-#22, 2-#16

I

24-24

12-#16, 12-#12

I

16-26

26-#20

I

18-28

26-#20, 2-#16

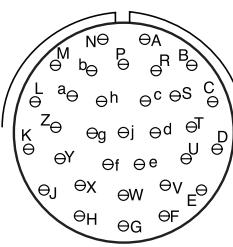
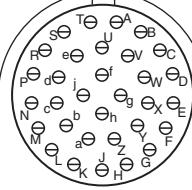
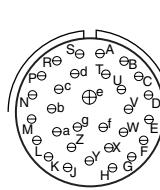
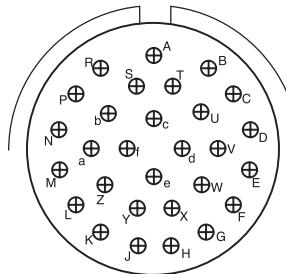
I

CONTACTS

29

30

32



LAYOUT

# OF CONTACTS  
SERVICE RATING

24-29

29-#16

I

18-30

29-#20, 1-#16

I

18-32

32-#20

I

22-32

32-#20

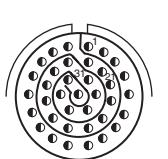
I

CONTACTS

37

39

41

Inactive.  
Use 14-35

14-35

37-#22D

M

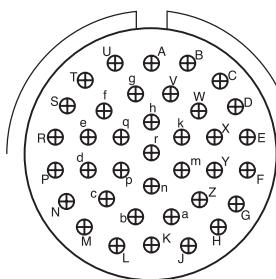
M

14-37

37-#22M

M

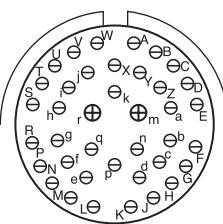
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24-37

37-#16

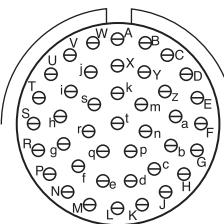
I



20-39

37-#20, 2-#16

I



20-41

41-#20

I

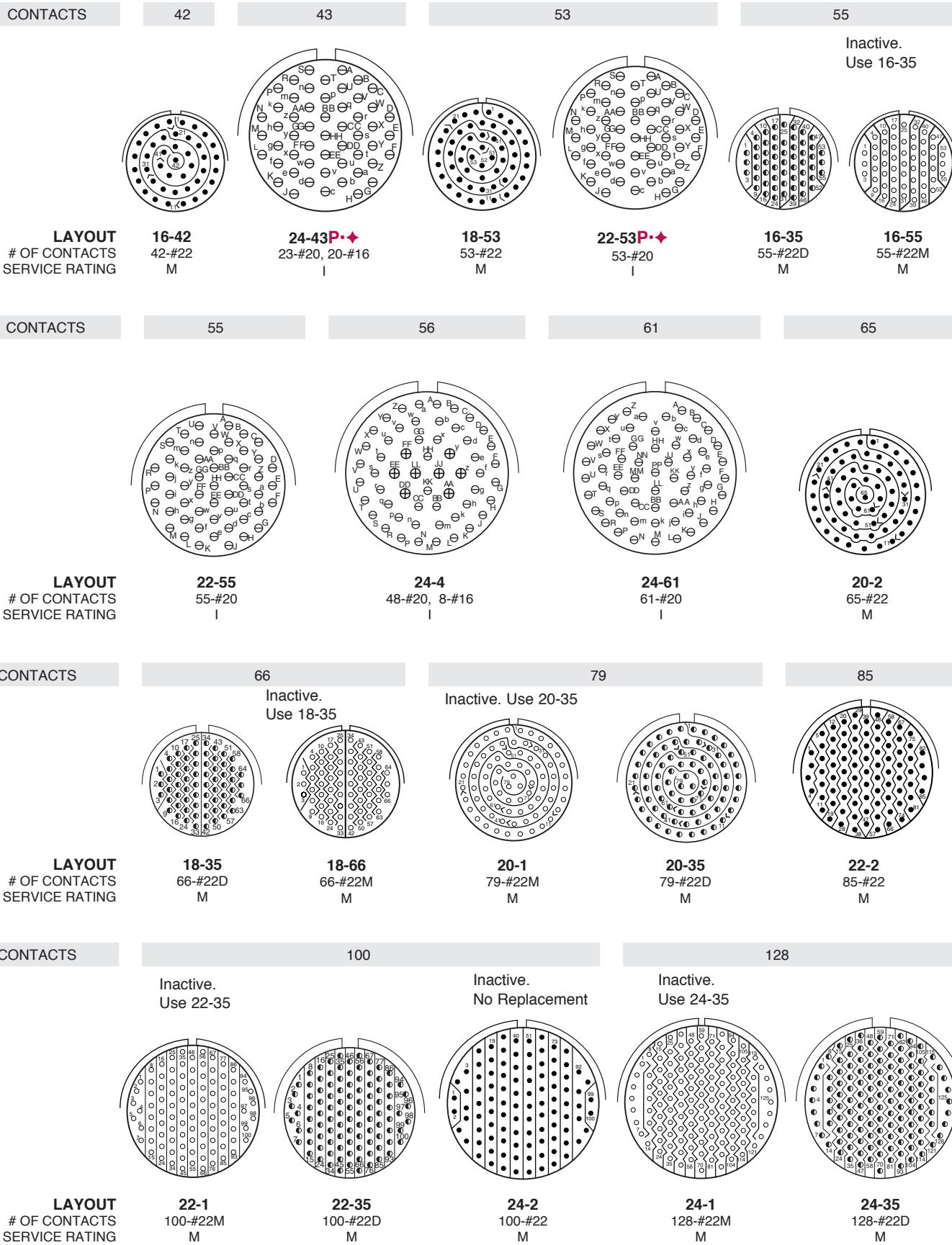
• NOT QPL'D ♦Not Toolled for RP or 02RE P = Pin Insert Only

Contact us for more information.

## LAYOUT BY NUMBER OF CONTACTS

View of mating-face of pin insert

● + ⊖ • ● ○  
 12 16 20 22 22D 22M

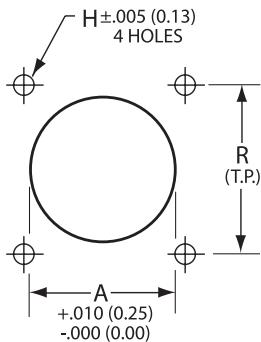


• NOT QPL'D ♦Not Toolled for RP or O2RE P = Pin Insert Only

Contact us for more information.

## PANEL CUTOUTS AND PANEL THICKNESS

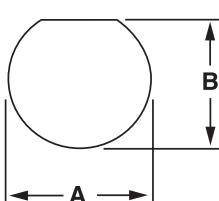
## FLANGED PANEL CUTOUTS



SHELL SIZE	A FRONT DIA. MIN.	A BACK DIA. MIN.	H +/- .005	R
8	0.516 (13.11)	0.557 (14.15)	0.125 (3.18)	0.594 (15.09)
10	0.625 (15.88)	0.682 (17.32)	0.125 (3.18)	0.719 (18.26)
12	0.750 (19.05)	0.854 (21.69)	0.125 (3.18)	0.812 (20.62)
14	0.906 (23.01)	0.979 (24.87)	0.125 (3.18)	0.906 (23.01)
16	1.016 (25.81)	1.104 (28.04)	0.125 (3.18)	0.969 (24.61)
18	1.141 (28.98)	1.229 (31.22)	0.125 (3.18)	1.062 (26.97)
20	1.266 (32.16)	1.354 (34.39)	0.125 (3.18)	1.156 (29.36)
22	1.375 (34.93)	1.479 (37.57)	0.125 (3.18)	1.250 (31.75)
24	1.484 (37.69)	1.760 (44.70)	0.152 (3.86)	1.375 (34.93)

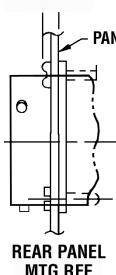
⇒ See page 490 for Nut Plates and Sealing Screws.

## JAM NUT PANEL CUTOUTS



Shell Size	A Diameter +.10 (.25) -0 (0)	B Flat +.00 (0.0) -.010 (-.25)
8	0.885 (22.48)	0.830 (21.08)
10	1.010 (25.64)	0.955 (24.26)
12	1.135 (28.83)	1.085 (27.56)
14	1.260 (32.01)	1.210 (30.73)
16	1.385 (35.18)	1.335 (33.91)
18	1.510 (38.35)	1.460 (37.08)
20	1.635 (41.53)	1.585 (40.26)
22	1.760 (44.70)	1.710 (43.43)
24	1.885 (47.88)	1.835 (46.61)

## PANEL THICKNESS



SHELL SIZE	MS27497 JTPQ00R	MS27508 JTP02RE
8	.147 (3.73)	
10		
12		
14		
16		.152 (3.86)
18	.142 (3.01)	
20		
22		
24		.179 (4.55)
		.169 (4.29)

## TOOLING ACCESSORIES

## TG70 STRAP WRENCH

The strap wrench is used to connect or disconnect coupling nuts in a confined space, or to tighten or loosen endbells without damaging the connector plating. It also increases torque, allowing you to easily mate or unmate a connector. Do not substitute tools (pipe wrench or pliers), as severe damage may occur.



## TG69P NON-MARRING ADJUSTABLE ENDBELL PLIERS FOR FIELD SERVICE



These pliers have resilient jaws and are used to tighten or remove endbells without damaging the connector plating. They are adjustable and accommodate all connector sizes in this catalog. Do not substitute tools (pipe wrench or pliers), as severe damage may occur. Replacement jaws, part number G77015, are available.

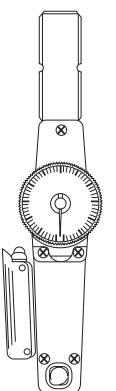
## 600 SERIES PRODUCTION SYSTEM

The 600 series is a complete system for the proper assembly and torquing of connector endbells. The system includes a bench-mounted or hand-held torque wrench, plug and receptacle holders, and a range of endbell tightening tools. Each item is shipped with instructions.



600-007

Bench Mounted Torque Wrench



600-004

Hand Held Torque Wrench

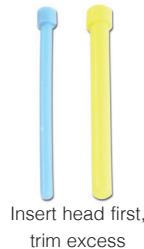
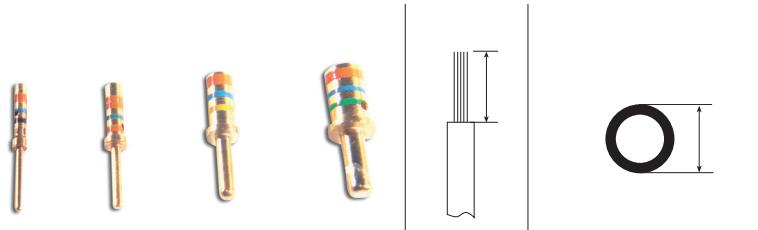
## Plug and Receptacle Holders

SERIES II SIZE	MIL-DTL-38999 FOR JT	
	RECEPTACLES	PLUGS
9	600FF005-8R#	600FF005-8P#
11	600FF005-10R#	600FF005-10P#
13	600FF005-12R#	600FF005-12P#
15	600FF005-14R#	600FF005-14P#
17	600FF005-16R#	600FF005-16P#
19	600FF005-18R#	600FF005-18P#
21	600FF005-20R#	600FF005-20P#
23	600FF005-22R#	600FF005-22P#
25	600FF005-24R#	600FF005-24P#

# Add polarizations: N, A, B, C, D, E

## CONTACTS

## PINS

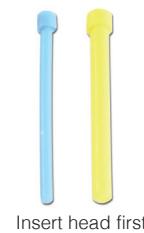
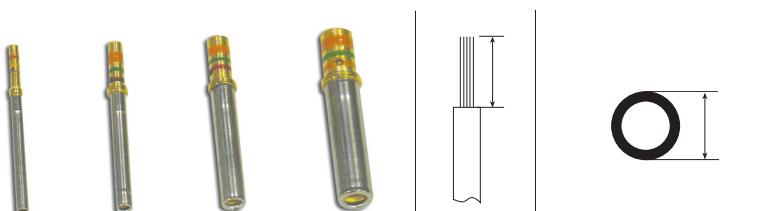


Insert head first,  
trim excess

CONTACT SIZE	WIRE SIZE AWG	PIN CONTACT PART NUMBER	COLOR BANDS			WIRE STRIP LENGTHS	WIRE RANGE		WIRE HOLE FILLER	COLOR
			1	2	3		MIN.	MAX.		
22D	28,26,24&22	M39029/58-360	Orange	Blue	Black	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-2	Black
*22M	28,26&24	M39029/58-361	Orange	Blue	Brown	.125 (3.18)	.030 (0.76)	.050 (1.27)	MS27488-22-2	Black
*22	26,24&22	M39029/58-362	Orange	Blue	Red	.125 (3.18)	.034 (0.86)	.060 (1.52)	MS27488-22-2	Black
20	20,22&24	M39029/58-363	Orange	Blue	Orange	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-2	Red
16	16,18&20	M39029/58-364	Orange	Blue	Yellow	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-2	Blue
12	12&14	M39029/58-365	Orange	Blue	Green	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-2	Yellow

\* Inactive for new design

## SOCKETS



Insert head first,  
trim excess

CONTACT SIZE	WIRE SIZE AWG	SOCKET CONTACT PART NUMBER	COLOR BANDS			WIRE STRIP LENGTHS	WIRE RANGE		WIRE HOLE FILLER	COLOR
			1	2	3		MIN.	MAX.		
22D	28,26,24&22	M39029/57-354	Orange	Green	Yellow	.125 (3.18)	.030 (0.76)	.054 (1.37)	MS27488-22-2	Black
*22M	28,26&24	M39029/57-355	Orange	Green	Green	.125 (3.18)	.030 (0.76)	.050 (1.27)	MS27488-22-2	Black
*22	28,26&24	M39029/57-356	Orange	Green	Blue	.125 (3.18)	.034 (0.86)	.060 (1.52)	MS27488-22-2	Black
20	20,22&24	M39029/57-357	Orange	Green	Violet	.188 (4.77)	.040 (1.02)	.083 (2.11)	MS27488-20-2	Red
16	16,18&20	M39029/57-358	Orange	Green	Gray	.188 (4.77)	.065 (1.65)	.109 (2.77)	MS27488-16-2	Blue
12	12&14	M39029/57-359	Orange	Green	White	.188 (4.77)	.097 (2.46)	.142 (3.61)	MS27488-12-2	Yellow

\* Inactive for new design

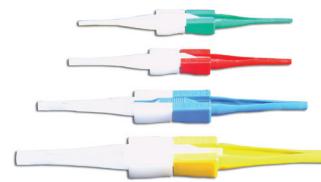
## CONTACT COLOR CODES

0	Black	5	Green
1	Brown	6	Blue
2	Red	7	Violet
3	Orange	8	Gray
4	Yellow	9	White

All dimensions in inches (millimeters in parenthesis)

## CONTACT TOOLS

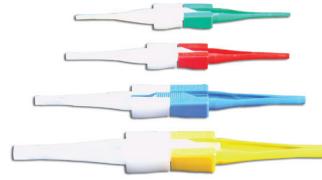
## PINS



CONTACT SIZE	HAND-CRIMP TOOL	POWER CRIMP TOOL	TURRET HEADS	USE LOCATOR COLOR	PLASTIC INSERTION/EXTRACTION TOOL	INSERTION TIP COLOR	EXTRACTION TIP COLOR	METAL INSERTION TOOL	COLOR BAND	METAL EXTRACTION TOOL	COLOR BAND
*22D	M22520/2-01	WA22H†	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black White
*22M	M22520/2-01	WA22H†	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black White
*22	M22520/2-01	WA22H†	M22520/2-09	-	M81969/14-01	Green	White	MS27495A22	Black	MS27495R22	Brown White
20	M22520/1-01	WA27FH†	M22520/1-04	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red White
16	M22520/1-01	WA27FH†	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Red White
12	M22520/1-01	WA27FH†	M22520/1-04	Yellow	M81969/14-04	Yellow	White	MS27495A12	Yellow	MS27495R12	Blue White

† Contact us for more tool accessories. \* Inactive for new design

## SOCKETS



CONTACT SIZE	HAND-CRIMP TOOL	POWER CRIMP TOOL	TURRET HEADS	USE LOCATOR COLOR	PLASTIC INSERTION/EXTRACTION TOOL	INSERTION TIP COLOR	EXTRACTION TIP COLOR	METAL INSERTION TOOL	COLOR BAND	METAL EXTRACTION TOOL	COLOR BAND
*22D	M22520/2-01	WA22H†	M22520/2-06	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black White
*22M	M22520/2-01	WA22H†	M22520/2-06	-	M81969/14-01	Green	White	MS27495A22M	Black	MS27495R22M	Black White
*22	M22520/2-01	WA22H†	M22520/2-06	-	M81969/14-01	Green	White	MS27495A22	Black	MS27495R22	Brown White
20	M22520/1-01	WA27FH†	M22520/1-06	Red	M81969/14-10	Red	Orange	MS27495A20	Red	MS27495R20	Red White
16	M22520/1-01	WA27FH†	M22520/1-04	Blue	M81969/14-03	Blue	White	MS27495A16	Blue	MS27495R16	Red White
12	M22520/1-01	WA27FH†	M22520/1-04	Yellow	M81969/14-04	Yellow	White	MS27495A12	Yellow	MS27495R12	Blue White

† Contact us for more tool accessories. \* Inactive for new design

All dimensions in inches (millimeters in parenthesis)

## CONTACTS

## COAX CONTACTS

		Coax Pin	Coax Socket	Crimping Tools	
COAX CONTACT SIZE	CABLE TYPE	CONTACT PART NUMBER		CRIMPING TOOLS	
		PIN	SOCKET	INNER CONTACT	CRIMP FERRULE
16	RG-178B/U, RG-196A/U	21-033122-564 (M39029/76-425)	21-033121-564 (M39029/78-433)	M22520/2-01 w/ Positioner M22522/2-35 or w/ Daniels Positioner K532	M22520/4-01 w/ Positioner M22520/4-02
	RG-174A/U, RG-188A/U, RG-161/U, RG-187A/U, RG-316/U, RG-179B/U	21-033122-563 (M39029/76-424)	21-033121-563 (M39029/78-432)		
12	RG-180B/U, RG-195A/U	21-033122-546 (M39029/28-211)	21-033121-546 (M39029/27-210)	M22520/2-01 w/ Positioner M22520/2-34 or w/ Daniels Positioner K323	M22520/31-01 w/ Positioner M22520/31-02 or Daniels GS-200 Tool w/ Positioner G2P330
		21-033122-541 (M39029/28-409)	21-033121-541 (M39029/27-420)		

## PRINTED CIRCUIT BOARD CONTACTS - PIN

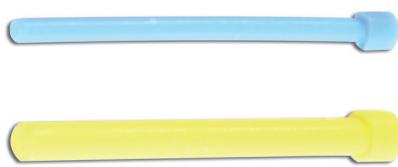
PCB PIN CONTACTS	SIZE	TAIL DIAMETER +/- .001	CONTACT STICKOUT MAX./MIN.					
			MS27472 JT00RT	MS27497 JTPQ00RT	MS27499 JT02RE	MS27508 JTP02RE	MS27473 JT06RT	MS27474 JT07RT
10-407552-015	22M	0.019	.379 / .317	.379 / .317	.577 / .520	.577 / .520	.379 / .317	.379 / .317
10-407552-055	22M	0.019	.268 / .206	.268 / .206	.466 / .409	.466 / .409	.268 / .206	.268 / .206
10-407552-085	22M	0.019	.104 / .047	.104 / .047	.302 / .250	.302 / .250	.104 / .047	.104 / .047
10-407552-115	22M	0.019	.042 / NS	.042 / NS	.240 / .188	.240 / .188	.042 / NS	.042 / NS
10-497640-015	20	0.019	.392 / .335	.392 / .335	.590 / .538	.590 / .538	.392 / .335	.392 / .335
10-497640-025	20	0.019	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.257 / .200	.257 / .200
10-497640-045	20	0.019	NS	NS	.192 / .140	.192 / .140	NS	NS
10-497596-015	20	0.025	.102 / .049	.102 / .049	.300 / .252	.300 / .252	.102 / .049	.102 / .049
10-497596-025	20	0.025	.192 / .139	.192 / .139	.390 / .342	.390 / .342	.192 / .139	.192 / .139
10-497596-035	20	0.025	.273 / .220	.273 / .220	.471 / .423	.471 / .423	.273 / .220	.273 / .220
10-497596-055	20	0.025	.390 / .337	.390 / .337	.588 / .540	.588 / .540	.390 / .337	.390 / .337
10-497695-015	16	0.040	.299 / .242	.299 / .242	.497 / .445	.497 / .445	.229 / .242	.229 / .242
10-497630-035	16	0.062	.104 / .047	.104 / .047	.302 / .250	.302 / .250	.104 / .047	.104 / .047
10-497630-055	16	0.062	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.272 / .215	.272 / .200
10-597502-015	12	0.081	.272 / .215	.272 / .215	.470 / .418	.470 / .418	.272 / .215	.272 / .215

= Standard PC tail used

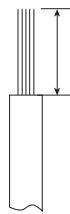
All dimensions in inches

## CONTACTS

Wire Hole Filler



Wire Strip Length



Wire Sealing Range

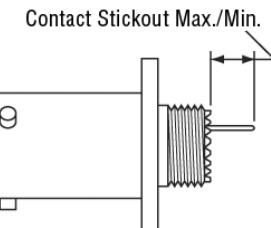


INSTALLATION TOOLS		WIRE STRIP LENGTHS	WIRE SEALING RANGE	
INSERTION	REMOVAL		MIN.	MAX.
M81969/8-07 or M81969/14-03	M81969/8-08 or M81969/14-03	Contact us for details	.065 (1.65)	.109 (2.77)
M81969/8-09 or M81969/14-04	M81969/8-10 or M81969/14-04	Contact us for details	.097 (2.46)	.142 (3.61)

All dimensions in inches (millimeters in parenthesis)

## PRINTED CIRCUIT BOARD CONTACTS - SOCKET

PCB SOCKET CONTACTS	SIZE	TAIL DIAMETER +/- .001	CONTACT STICKOUT MAX./MIN.					
			MS27472 JT00RT	MS27497 JTPQ00RT	MS27499 JT02RE	MS27508 JTP02RE	MS27473 JT06RT	MS27474 JT07RT
10-597880-051	22M	0.019	.268 / .194	.268 / .194	.466 / .395	.466 / .395	.268 / .194	.268 / .194
10-597880-171	22M	0.019	.268 / .178	.268 / .178	.466 / .409	.466 / .409	.268 / .178	.268 / .178
10-597880-081	22M	0.019	.104 / .035	.104 / .035	.302 / .236	.302 / .236	.104 / .035	.104 / .035
10-497641-025	20	0.019	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.257 / .200	.257 / .200
10-497631-055	16	0.062	.257 / .200	.257 / .200	.455 / .403	.455 / .403	.257 / .200	.257 / .200



All dimensions in inches

## EXCERPT FROM MIL-DTL-38999K

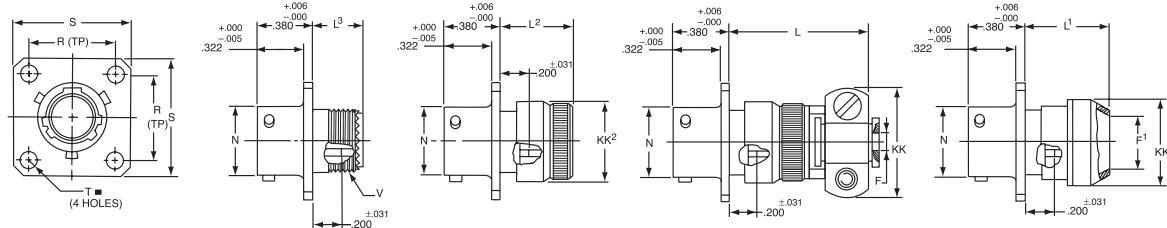
3.43.2 JAN brand. The United States Government has adopted, and is exercising legitimate control over the certification marks "JAN" and "J", respectively, to indicate that items so marked or identified are manufactured to, and meet all the requirements of military specification. Accordingly, items acquired to, and meeting all of the criteria specified herein and in applicable specifications shall bear the certification mark "JAN" except that items too small to bear the certification mark "JAN" shall bear the letter "J". The "JAN" or "J" shall be placed immediately before the PIN except that if such location would place a hardship on the manufacturer in connection with such marking, the "JAN" or "J" may be located on the first line above or below the PIN. Items furnished under contracts or orders which either permit or require deviation from the conditions or requirements specified herein or in applicable specifications shall not bear "JAN" or "J". In the event an item fails to meet the requirements of this specification and the applicable specification sheets or associated detail specifications, the manufacturer shall remove the "JAN" or the "J" from the sample tested and also from all items represented by the sample. The "JAN" or "J" certification mark shall not be used on products acquired to contractor drawings or specification. The United States Government has obtained Certificate of Registration No. 504,860 for the certification mark "JAN".

Note: The "JAN" or "J" is not part of the PIN but indicates a certification.

PIN = Part Identification Number

## DIMENSIONS

## RECEPTACLES



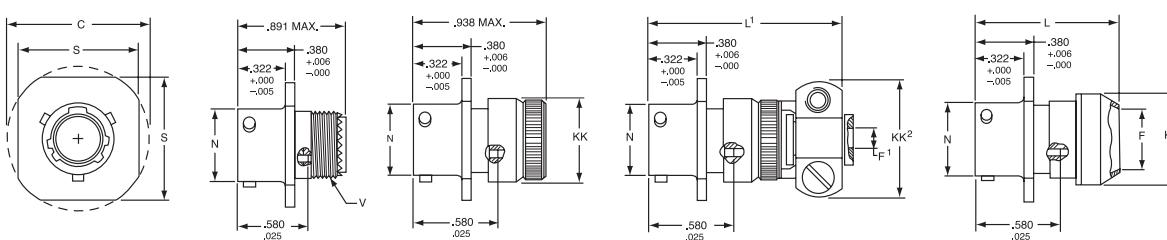
JT00RT (MS27472T)

JT00RE (MS27472E)

JT00RE\_-SR

JT00RP(MS27472P)

Shell Size	F Diameter +.010/-0.025 (+.254/-0.635)	F1 Diameter +.010 (+.254)	L Max.		L1 Max.		L2 Max. MS27472/ JT00R	L3 Max. MS27497/ JTPQ00R	N +.001/-0.005 (+.025/-1.127)	P Max.
			MS27472/ JT00R	MS27497/ JTPQ00R	MS27472/ JT00R	MS27497/ JTPQ00R				Panel Thickness
8	0.125 (3.2)	0.444 (11.3)	1.094 (27.8)	1.140 (29.0)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.473 (12.0)	0.142 (3.6)
10	0.188 (4.8)	0.558 (14.2)	1.094 (27.8)	1.140 (29.0)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.590 (15.0)	0.142 (3.6)
12	0.312 (7.9)	0.683 (17.3)	1.094 (27.8)	1.140 (29.0)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.750 (19.1)	0.142 (3.6)
14	0.375 (9.5)	0.808 (20.5)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	0.875 (22.2)	0.142 (3.6)
16	0.500 (12.7)	0.909 (23.1)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.000 (25.4)	0.142 (3.6)
18	0.625 (15.9)	1.034 (26.3)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.125 (28.6)	0.142 (3.6)
20	0.625 (15.9)	1.159 (29.4)	1.344 (34.1)	1.375 (34.9)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.250 (31.8)	0.142 (3.6)
22	0.750 (19.1)	1.284 (32.6)	1.469 (37.3)	1.516 (38.5)	0.609 (15.5)	0.468 (11.9)	0.547 (13.9)	0.500 (12.7)	1.375 (34.9)	0.142 (3.6)
24	0.800 (20.3)	1.409 (35.8)	1.469 (37.3)	1.500 (38.1)	0.688 (17.5)	0.540 (13.7)	0.547 (13.9)	0.500 (12.7)	1.500 (38.1)	0.142 (3.6)



JT01RT

JT01RE

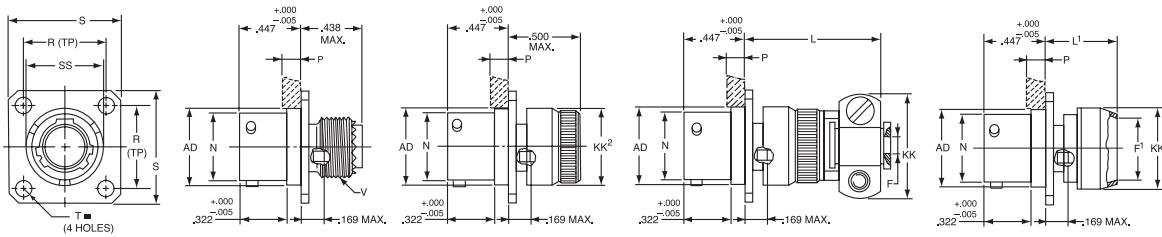
JT01RE -SR

JT01RP

Shell Size	C Max.	F Diameter +.010 (-.254)	F1 Diameter +.010/-0.025 (+.254/-0.635)	L Max.	L1 Max.	N Diameter +.001/-0.005 (+.025/-0.127)	S +.017/-0.016 (+.431/-0.406)	KK Diameter Max.	KK1 Diameter Max.	KK2 Max.	V Thread Class 2A (Plated)
8	0.965 (24.5)	0.444 (11.3)	0.125 (3.2)	1.031 (26.2)	1.562 (39.7)	0.473 (12.0)	0.812 (20.6)	0.578 (14.7)	0.625 (15.9)	0.812 (20.6)	.4375-28 UNEF
10	1.089 (27.7)	0.558 (14.2)	0.188 (4.8)	1.031 (26.2)	1.562 (39.7)	0.590 (15.0)	0.938 (23.8)	0.703 (17.9)	0.750 (19.1)	0.875 (22.2)	.5625-24 UNEF
12	1.183 (30.0)	0.683 (17.3)	0.312 (7.9)	1.031 (26.2)	1.562 (39.7)	0.750 (19.1)	1.031 (26.2)	0.828 (21.0)	0.875 (22.2)	1.000 (25.4)	.6875-20 UNEF
14	1.277 (32.4)	0.808 (20.5)	0.375 (9.5)	1.031 (26.2)	1.812 (46.0)	0.875 (22.2)	1.125 (28.6)	0.953 (24.2)	1.000 (25.4)	1.125 (28.6)	.8125-20 UNEF
16	1.371 (34.8)	0.909 (23.1)	0.500 (12.7)	1.031 (26.2)	1.812 (46.0)	1.000 (25.4)	1.219 (31.0)	1.078 (27.4)	1.125 (28.6)	1.188 (30.2)	.9375-20 UNEF
18	1.465 (37.2)	1.034 (26.3)	0.625 (15.9)	1.031 (26.2)	1.812 (46.0)	1.125 (28.6)	1.312 (33.3)	1.203 (30.6)	1.250 (31.8)	1.438 (36.5)	1.0625-18 UNEF
20	1.589 (40.4)	1.159 (29.4)	0.625 (15.9)	1.031 (26.2)	1.812 (46.0)	1.250 (31.8)	1.438 (36.5)	1.328 (33.7)	1.375 (34.9)	1.438 (36.5)	1.1875-18 UNEF
22	1.715 (43.6)	1.284 (32.6)	0.750 (19.1)	1.031 (26.2)	1.938 (49.2)	1.375 (34.9)	1.562 (39.7)	1.453 (36.9)	1.500 (38.1)	1.625 (41.3)	1.3125-18 UNEF
24	1.838 (46.7)	1.409 (35.8)	0.800 (20.3)	1.109 (28.2)	1.938 (49.2)	1.500 (38.1)	1.688 (42.9)	1.578 (40.1)	1.625 (41.3)	1.719 (43.7)	1.4375-18 UNEF

All dimensions in inches (millimeters in parenthesis)

## DIMENSIONS



JTPQ00RT (MS27497T)

JTPQ00RE (MS27497E)

JTPQ00RE\_SR

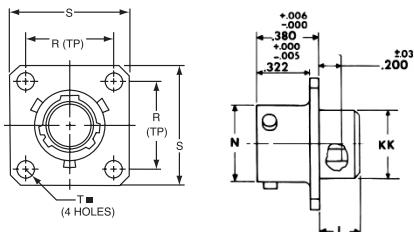
JTPQ00RP (MS27497P)

Shell Size	R (TP)	S ±.016 (±.406)	T Diameter ±.005 (±.127)	V Thread Class 2A (Plated)	AD Diameter ±.005 (±.127)	KK Max.		KK1 Diameter Max.	KK2 Diameter Max.	SS Diameter +.000/-016 (+.000/-406)
					MS27497/ JTPQ00R	MS27472/ JTPQ00R	MS27497/ JTPQ00R			MS27497/ JTPQ00R
8	0.594 (15.1)	0.812 (20.6)	0.120 (3.0)	.4375-28 UNEF	0.516 (13.1)	0.812 (20.6)	0.781 (19.8)	0.625 (15.9)	0.578 (14.7)	0.563 (14.3)
10	0.719 (18.3)	0.938 (23.6)	0.120 (3.0)	.5625-24 UNEF	0.633 (16.1)	0.875 (22.2)	0.844 (21.4)	0.750 (19.1)	0.703 (17.9)	0.680 (17.3)
12	0.812 (20.6)	1.031 (26.2)	0.120 (3.0)	.6875-24 UNEF	0.802 (20.4)	1.000 (25.4)	0.969 (24.6)	0.875 (22.2)	0.828 (21.0)	0.85 (21.8)
14	0.906 (23.0)	1.125 (28.6)	0.120 (3.0)	.8125-20 UNEF	0.927 (23.5)	1.125 (28.6)	1.094 (27.8)	1.000 (25.4)	0.953 (24.2)	0.98 (25.0)
16	0.969 (24.6)	1.219 (31.0)	0.120 (3.0)	.9375-20 UNEF	1.052 (26.7)	1.188 (30.2)	1.154 (29.3)	1.125 (28.6)	1.078 (27.4)	1.10 (28.1)
18	1.062 (27.0)	1.312 (33.3)	0.120 (3.0)	1.0625-18 UNEF	1.177 (29.9)	1.438 (36.5)	1.406 (35.7)	1.250 (31.8)	1.203 (30.6)	1.23 (31.3)
20	1.156 (29.4)	1.438 (36.5)	0.120 (3.0)	1.1875-18 UNEF	1.302 (33.1)	1.438 (36.5)	1.406 (35.7)	1.375 (34.9)	1.328 (33.7)	1.35 (34.5)
22	1.250 (31.8)	1.562 (39.7)	0.120 (3.0)	1.3125-18 UNEF	1.427 (36.2)	1.625 (41.3)	1.594 (40.5)	1.500 (38.1)	1.453 (36.9)	1.48 (37.7)
24	1.375 (34.9)	1.688 (42.9)	0.147 (3.0)	1.4375-18 UNEF	1.552 (39.4)	1.719 (43.7)	1.688 (42.9)	1.625 (41.3)	1.578 (40.1)	1.61 (40.9)

JT02RE (MS27499)

JT02RE -053 (MS27513E)

JTP02RE (MS27508E)



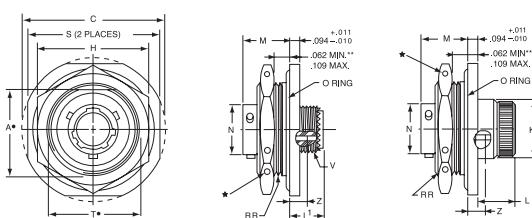
Shell Size	L Max.		N +.001/-005 (+.025/-0.127)	P Max. Panel Thickness MS27508/ JTP02RE	R (TP)	S ±.016 (±.406)	T Diameter ±.005 (±.127)	AD Diameter ±.005 (±.127)	KK Diameter Max.	
	MS27499/ JT02RE	MS27508/ MS27513/ JT02RE							MS27499/ JT02RE MS27513/ JT02RE	MS27508/ JTP02RE
8	0.286 (7.3)	0.225 (5.7)	0.473 (12.0)	0.147 (3.7)	0.594 (15.1)	0.812 (20.6)	0.120 (3.0)	0.516 (13.1)	0.438 (11.1)	0.531 (13.5)
10	0.286 (7.3)	0.225 (5.7)	0.590 (15.0)	0.152 (3.9)	0.719 (18.3)	0.938 (23.8)	0.120 (3.0)	0.633 (16.1)	0.563 (14.3)	0.656 (16.7)
12	0.286 (7.3)	0.225 (5.7)	0.750 (19.1)	0.152 (3.9)	0.812 (20.6)	1.031 (26.2)	0.120 (3.0)	0.802 (20.4)	0.688 (17.5)	0.828 (21.0)
14	0.286 (7.3)	0.225 (5.7)	0.875 (22.2)	0.152 (3.9)	0.906 (23.0)	1.125 (28.6)	0.120 (3.0)	0.927 (23.5)	0.813 (20.7)	0.953 (24.2)
16	0.286 (7.3)	0.225 (5.7)	1.000 (25.4)	0.152 (3.9)	0.969 (24.6)	1.219 (31.0)	0.120 (3.0)	1.052 (26.7)	0.938 (23.8)	1.078 (27.4)
18	0.286 (7.3)	0.225 (5.7)	1.125 (28.6)	0.152 (3.9)	1.062 (27.0)	1.312 (33.3)	0.120 (3.0)	1.177 (29.9)	1.047 (26.6)	1.203 (30.6)
20	0.286 (7.3)	0.225 (5.7)	1.250 (31.8)	0.179 (4.5)	1.156 (29.4)	1.438 (36.5)	0.120 (3.0)	1.302 (33.1)	1.172 (29.8)	1.328 (33.7)
22	0.286 (7.3)	0.225 (5.7)	1.375 (34.9)	0.179 (4.5)	1.250 (31.8)	1.562 (39.7)	0.120 (3.0)	1.427 (36.2)	1.297 (32.9)	1.453 (36.9)
24	0.286 (7.3)	0.225 (5.7)	1.500 (38.1)	0.169 (4.3)	1.375 (34.9)	1.688 (42.9)	0.147 (3.7)	1.552 (39.4)	1.422 (36.1)	1.578 (40.1)

All dimensions in inches (millimeters in parenthesis)

## DIMENSIONS

## RECEPTACLES

JT07RT (MS27474T) JT07RE (MS27474E)

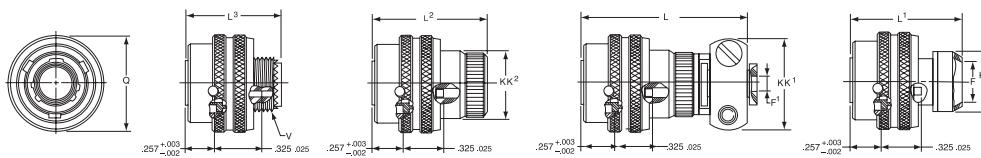


SHELL SIZE	A <sup>*</sup> +.000/-0.010 (+.000/-0.254)	C MAX.	F DIAMETER .010/.025 (+.254/-0.635)	F1 DIAMETER	H HEX. .017/.016 (+.432/-0.406)	L MAX.	L1 MAX.	L2 MAX.	L3 MAX.
8	0.830 (21.1)	1.390 (35.3)	0.125 (3.2)	0.444 (11.3)	1.062 (27.0)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.047 (26.6)
10	0.955 (24.3)	1.515 (38.5)	0.188 (4.8)	0.558 (14.2)	1.188 (30.2)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.047 (26.6)
12	1.084 (27.5)	1.640 (41.7)	0.312 (7.9)	0.683 (17.3)	1.312 (33.3)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.047 (26.6)
14	1.208 (30.7)	1.765 (44.8)	0.375 (9.5)	0.808 (20.5)	1.438 (36.5)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.297 (32.9)
16	1.333 (33.9)	1.953 (49.6)	0.500 (12.7)	0.909 (23.1)	1.562 (39.7)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.297 (32.9)
18	1.459 (37.1)	2.031 (51.6)	0.625 (15.9)	1.034 (26.3)	1.688 (42.9)	0.484 (12.3)	0.453 (11.5)	0.563 (14.3)	1.297 (32.9)
20	1.576 (40.0)	2.156 (54.8)	0.625 (15.9)	1.159 (29.4)	1.812 (46.0)	0.453 (11.5)	0.422 (10.7)	0.531 (13.5)	1.266 (32.2)
22	1.701 (43.2)	2.280 (57.9)	0.750 (19.1)	1.284 (32.6)	2.000 (50.8)	0.453 (11.5)	0.422 (10.7)	0.531 (13.5)	1.391 (35.3)
24	1.826 (46.4)	2.405 (61.1)	0.800 (20.3)	1.409 (35.8)	2.125 (54.0)	0.375 (9.5)	0.422 (10.7)	0.609 (15.5)	1.391 (35.3)

## PLUGS

• "D" shaped mounting hole dimensions

JT06RT (MS27473T) JT06RE (MS27473E) JT06RE\_SR JT06RP (MS27473P)



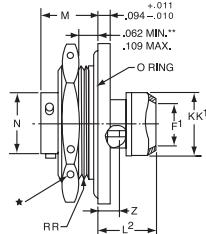
Shell Size	F Dia.	F1 Diameter .010/.025 (+.254/-0.635)	L Max.		L1 Max.	L2 Max.	L3 Max.	Q	V Thread Modified	KK Dia. Max.	KK <sup>1</sup> Max.		KK2 Max.	
			MS27473/ JT06R	MS27473/ JT06R							MS27473/ JT06R	MS27473/ JT06R		
8	0.444 (11.3)	0.125 (3.2)	1.562 (39.7)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	0.734 (18.6)	.4375-28	.421 - .417 (10.69 - 10.59)	0.625 (15.9)	0.812 (20.6)	0.578 (14.7)	0.578
10	0.558 (14.2)	0.188 (4.8)	1.562 (39.7)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	0.844 (21.4)	.5625-24	.542 - .538 (13.77 - 13.67)	0.750 (19.1)	0.875 (22.2)	0.703 (17.9)	0.703
12	0.683 (17.3)	0.312 (7.9)	1.562 (39.7)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.016 (25.8)	.6875-24	.667 - .663 (16.94 - 16.84)	0.875 (22.2)	1.000 (25.4)	0.828 (21.0)	0.828
14	0.808 (20.5)	0.375 (46.0)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.141 (29.0)	.8125-20	.791 - .787 (20.09 - 19.99)	1.000 (25.4)	1.125 (28.6)	0.953 (24.2)	0.953
16	0.909 (23.1)	0.500 (46.0)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.265 (32.1)	.9375-20	.916 - .912 (23.27 - 23.16)	1.125 (28.6)	1.188 (30.2)	1.078 (27.4)	1.078
18	1.034 (26.3)	0.625 (46.0)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.391 (35.3)	1.0625-18	1.034 - 1.030 (26.26 - 26.16)	1.250 (31.8)	1.438 (36.5)	1.203 (30.6)	1.203
20	1.159 (29.4)	0.625 (46.0)	1.812 (46.0)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.500 (38.1)	1.1875-18	1.158 - 1.154 (29.41 - 29.31)	1.375 (34.9)	1.438 (36.5)	1.328 (33.7)	1.328
22	1.284 (32.6)	0.750 (49.2)	1.938 (49.2)	0.891 (22.6)	1.000 (25.4)	0.938 (23.8)	0.891 (22.6)	1.625 (41.3)	1.3125-18	1.283 - 1.279 (32.59 - 32.49)	1.500 (38.1)	1.625 (41.3)	1.453 (36.9)	1.453
24	1.409 (35.8)	0.800 (20.3)	1.938 (49.2)	0.891 (22.6)	1.062 (27.0)	0.938 (23.8)	0.891 (22.6)	1.750 (44.5)	1.4375-18	1.408 - 1.404 (35.76 - 35.66)	1.625 (41.3)	1.719 (43.7)	1.578 (40.1)	1.578

All dimensions in inches (millimeters in parenthesis)

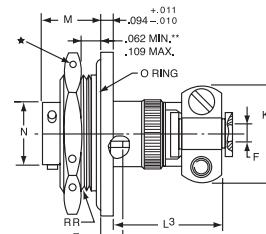
## DIMENSIONS

## RECEPTACLES

JT07RP (MS27474P)



JT07RE-SR

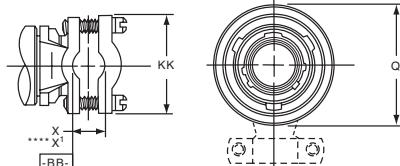


Shell Size	M ±.005 (±.127)	N +.001/-0.005 (+.025/-1.027)	S ±.016 (±.406)	T. .010/-0.000 (+.254/-0.000)	V Thread Class 2A (Plated)	Z ±.031 (±.787)	KK Max.	KK1 Dia. Max.	KK2 Dia. Max.	RR Thread Class 2A (Plated)
8	0.438 (11.1)	0.473 (12.0)	1.250 (31.8)	0.884 (22.5)	.4375-28 UNEF	0.144 (3.7)	0.812 (20.6)	0.625 (15.9)	0.578 (14.7)	.8750-20UNEF
10	0.438 (11.1)	0.590 (15.0)	1.375 (34.9)	1.007 (25.6)	.5625-24 UNEF	0.144 (3.7)	0.875 (22.2)	0.750 (19.1)	0.703 (17.9)	1.0000-20UNEF
12	0.438 (11.1)	0.750 (19.1)	1.500 (38.1)	1.134 (28.8)	.6875-24 UNEF	0.144 (3.7)	1.000 (25.4)	0.875 (22.2)	0.828 (21.0)	1.1250-18UNEF
14	0.438 (11.1)	0.875 (22.2)	1.625 (41.3)	1.259 (32.0)	.8125-20 UNEF	0.144 (3.7)	1.125 (28.6)	1.000 (25.4)	0.953 (24.2)	1.2500-18UNEF
16	0.438 (11.1)	1.000 (25.4)	1.781 (45.2)	1.384 (35.2)	.9375-20 UNEF	0.144 (3.7)	1.188 (30.2)	1.125 (28.6)	1.078 (27.4)	1.3750-18UNEF
18	0.438 (11.1)	1.125 (28.6)	1.890 (48.0)	1.507 (38.3)	1.0625-18 UNEF	0.144 (3.7)	1.438 (36.5)	1.250 (31.8)	1.203 (30.6)	1.5000-18UNEF
20	0.464 (11.8)	1.250 (31.8)	2.016 (51.2)	1.634 (41.5)	1.1875-18 UNEF	0.188 (4.8)	1.438 (36.5)	1.375 (34.9)	1.328 (33.7)	1.6250-18UNEF
22	0.464 (11.8)	1.375 (34.9)	2.140 (54.4)	1.759 (44.7)	1.3125-18 UNEF	0.188 (4.8)	1.625 (41.3)	1.500 (38.1)	1.453 (36.9)	1.7500-18UNS
24	0.464 (11.8)	1.500 (38.1)	2.265 (57.5)	1.884 (47.9)	1.4375-18 UNEF	0.188 (4.8)	1.719 (43.7)	1.625 (41.3)	1.578 (40.1)	1.8750-16UN

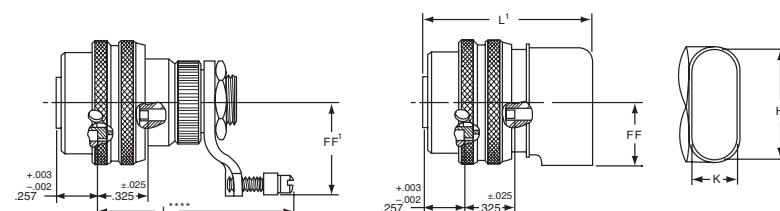
• "D" shaped mounting hole dimensions

## PLUGS

JT08RE (MS27500E)



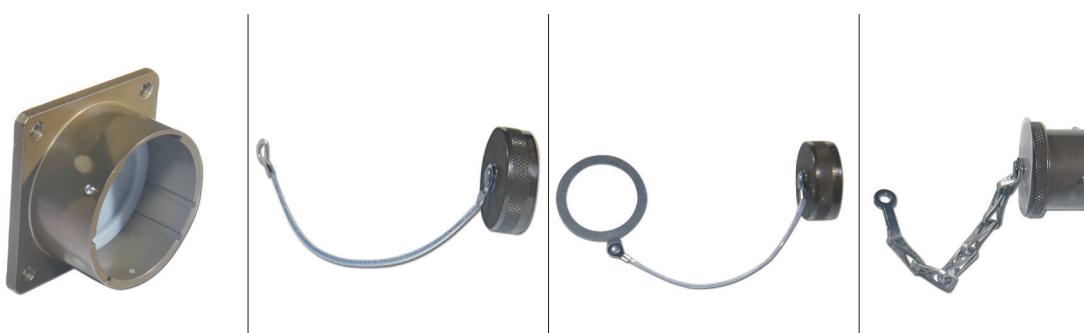
JT08RP



SHELL SIZE	H +.010 (+.254)	K +.010 (+.254)	L MAX.	L1 MAX.	Q DIAMETER MAX.	X MIN. CABLE	X1 MAX. CABLE	FF MAX.	FF1 MAX.	KK MAX.
8	0.547 (13.9)	0.156 (4.0)	1.578 (40.1)	1.125 (28.6)	0.734 (18.6)	0.082 (2.1)	0.234 (5.9)	0.438 (11.1)	0.984 (25.0)	0.755 (19.2)
10	0.709 (18.0)	0.188 (4.8)	1.578 (40.1)	1.156 (29.4)	0.844 (21.4)	0.082 (2.1)	0.234 (5.9)	0.516 (13.1)	1.016 (25.8)	0.755 (19.2)
12	0.829 (21.1)	0.281 (7.1)	1.656 (42.1)	1.250 (31.8)	1.016 (25.8)	0.114 (2.9)	0.328 (8.3)	0.594 (15.1)	1.078 (27.4)	0.817 (20.8)
14	1.000 (25.4)	0.438 (11.1)	1.844 (46.8)	1.406 (35.7)	1.141 (29.0)	0.176 (4.5)	0.457 (11.6)	0.656 (16.7)	1.203 (30.6)	0.943 (24.0)
16	1.021 (25.9)	0.500 (12.7)	2.000 (50.8)	1.469 (37.3)	1.265 (32.1)	0.238 (6.0)	0.634 (16.1)	0.719 (18.3)	1.265 (32.1)	1.067 (27.1)
18	1.145 (29.1)	0.562 (14.3)	2.046 (52.0)	1.531 (38.9)	1.391 (35.3)	0.208 (5.3)	0.614 (15.6)	0.781 (19.8)	1.328 (33.7)	1.149 (29.2)
20	1.270 (32.3)	0.625 (15.9)	2.125 (54.0)	1.594 (40.5)	1.500 (38.1)	0.302 (7.7)	0.608 (15.4)	0.844 (21.4)	1.359 (34.5)	1.399 (35.5)
22	1.395 (35.4)	0.688 (17.5)	2.250 (57.2)	1.656 (42.1)	1.625 (41.3)	0.302 (7.7)	0.823 (20.9)	0.906 (23.0)	1.421 (36.1)	1.399 (35.5)
24	1.520 (38.6)	0.750 (19.1)	2.422 (61.5)	1.797 (45.6)	1.750 (44.5)	0.332 (8.4)	0.853 (21.7)	0.969 (24.6)	1.703 (43.3)	1.587 (40.3)

All dimensions in inches (millimeters in parenthesis)

## ACCESSORIES



JT SHELL SIZE	DUMMY RECEPTACLES	RECEPTACLE DUST CAPS		PLUG CAP
		FOR FLANGED	FOR JAM NUT	
8	M38999/10-8B	MS27511**8C	MS27511**8N	MS27510**8CL
10	M38999/10-10B	MS27511**10C	MS27511**10N	MS27510**10CL
12	M38999/10-12B	MS27511**12C	MS27511**12N	MS27510**12CL
14	M38999/10-14B	MS27511**14C	MS27511**14N	MS27510**14CL
16	M38999/10-16B	MS27511**16C	MS27511**16N	MS27510**16CL
18	M38999/10-18B	MS27511**18C	MS27511**18N	MS27510**18CL
20	M38999/10-20B	MS27511**20C	MS27511**20N	MS27510**20CL
22	M38999/10-22B	MS27511**22C	MS27511**22N	MS27510**22CL
24	M38999/10-24B	MS27511**24C	MS27511**24N	MS27510**24CL

\*\* Select code for plating

B = Olive Drab Chromate over Cadmium over Nickel (500-Hour Salt Spray) (Most Popular)

F = Electroless Nickel (Fluid Resistant)

A = Gold Iridite over Cadmium Nickel

C = Hard Anodize

JT SHELL SIZE	ENDBELLS		CABLE RANGE	
	STRAIGHT LOW-COST	RIGHT ANGLE LOW-COST	MIN.	MAX.
8	M85049/49-2-8**	M85049/47**8	.098 (2.49)	.234 (5.94)
10	M85049/49-2-10**	M85049/47**10	.153 (3.89)	.234 (5.94)
12	M85049/49-2-12**	M85049/47**12	.190 (4.83)	.328 (8.33)
14	M85049/49-2-14**	M85049/47**14	.260 (6.60)	.457 (11.61)
16	M85049/49-2-16**	M85049/47**16	.283 (7.19)	.614 (15.60)
18	M85049/49-2-18**	M85049/47**18	.325 (8.25)	.634 (16.10)
20	M85049/49-2-20**	M85049/47**20	.343 (8.71)	.698 (17.73)
22	M85049/49-2-22**	M85049/47**22	.381 (9.68)	.823 (20.90)
24	M85049/49-2-24**	M85049/47**24	.418 (10.62)	.853 (21.67)

\*\* Select code for connector plating

W = Olive Drab Chromate over Cadmium over Nickel (1000-Hour Salt Spray)

N = Electroless Nickel (Fluid Resistant)

A = Black Anodize

All dimensions in inches (millimeters in parenthesis)

## ACCESSORIES

		Straight		Right Angle	
JT SHELL SIZE		SELF-LOCKING ENDBELLS, STRAIGHT	CABLE RANGE, RIGHT ANGLE	MIN.	MAX.
8		M85049/49-2S8**	M85049/47S**8	.098 (2.49)	.234 (5.94)
10		M85049/49-2S10**	M85049/47S**10	.153 (3.89)	.234 (5.94)
12		M85049/49-2S12**	M85049/47S**12	.190 (4.83)	.328 (8.33)
14		M85049/49-2S14**	M85049/47S**14	.260 (6.60)	.457 (11.61)
16		M85049/49-2S16**	M85049/47S**16	.283 (7.19)	.614 (15.60)
18		M85049/49-2S18**	M85049/47S**18	.325 (8.25)	.634 (16.10)
20		M85049/49-2S20**	M85049/47S**20	.343 (8.71)	.698 (17.73)
22		M85049/49-2S22**	M85049/47S**22	.381 (9.68)	.823 (20.90)
24		M85049/49-2S24**	M85049/47S**24	.418 (10.62)	.853 (21.67)

\*\* Select code for connector plating

W = Olive Drab Chromate over Cadmium over Nickel (1000-Hour Salt Spray)

N = Electroless Nickel (Fluid Resistant)

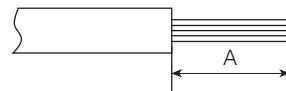
S = 300-Series Steel, Passivated

	SEALED	EMI/RFI	ORIENTATION S = STRAIGHT A = 90° B = 45°	ENDBELL TYPE	DESCRIPTION
M85049/62	Y	N	S	Heat Shrink Boot Adapters	Designed for use with straight or right angle shrink boots. A knurled rear section with a boot groove provides an excellent surface for the boot to grab the metal endbell. Available with lock wire and drain holes. See Heat Shrink Boots on  pages 491-492.
M85049/33 M85049/32	N	Y	S A	Shield-Termination Back Shell	Non-environmental designed for use with jacketed cable. Allow extra space to break out the wires and still provide strain relief clamping to the outside of the cable jacket.
M85049/17	Y	Y	S	Extender Back Shell	This EMI/RFI-shielding, environmentally sealed endbell features a standard-style cable clamp with gland seal at the end of an extender-style backshell.
M85049/29	N	N	S	Extender Back Shell	This non-environmentally-sealed endbell features a standard-style cable clamp.
Banding	Y	Y		Banding Adapter	Banding adapters utilize a band of metal that fastens and grounds cable shields to the outside of endbells. This method of terminating shields has advantages in that they typically use tools to tighten and trim the bands. These tools make the termination tight, repeatable, reworkable (if you make a mistake, just cut the band off and start again) and facilitates service. Banding adapters help lower the total applied cost by having simpler designs that have fewer parts with uncomplicated assembly procedures.
M85049/85 M85049/86 M85049/87			S B A		If the military-standard endbells don't fit your needs, contact us and we will customize an endbell solution. Most of these customized endbells are typically assembled in 4-8 weeks or sooner!
Custom			SAB	Custom Designs  Contact us	
M85049/27	N	N	S	E-Nut	Wire seal compression nut

## ASSEMBLY INSTRUCTIONS

## WIRE STRIPPING

Strip insulation from end of wire to be crimped. (See table for proper stripping dimensions.) Do not cut or damage wire strands.



WIRE SIZE	A
22, 22M, 22D	.125 (3.18)
20	.188 (4.77)
16	.188 (4.77)
12	.188 (4.77)

## CONTACT CRIMPING



**STEP 1:** Insert wire into rear of contact. Wire insulation must press against rear of contact. Wire must be visible through inspection hole.

**STEP 2:** M22520 series crimp tool and locator is recommended. See Contact and Tool Table on [pages 210-211](#), for choice of turret head and selection setting according to contact size, part number and wire gauge size.

**STEP 3:** Insert contact and wire into tool jaws. To crimp, squeeze handles together fully until ratchet releases and allows handles to expand; otherwise, contact cannot be extracted from tool jaws. Maintain slight insertion pressure on wire while crimping contact to wire.

## CONTACT INSERTION



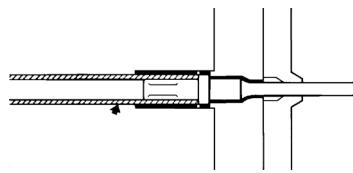
**STEP 1:** Remove hardware from plug or receptacle and slip over wire bundle in proper order for reassembly.



**STEP 2:** Using proper plastic or metal insertion tool for corresponding contact, position wire in tip of the tool so that the tool tip presses against the contact shoulder.



**STEP 3:** Press tool against contact shoulder and, with firm and even pressure, insert wired contact and tool tip into center contact cavity.



**STEP 4:** When contact bottoms, a slight "click" can be heard as tines of metal retaining clip snap into place behind contact shoulder.



**STEP 5:** Remove tool and pull back lightly on wire to make sure contact is properly seated. Repeat operation with remainder of contacts to be inserted, beginning with the center cavity and working outward in alternating rows.

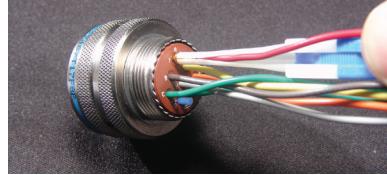


**STEP 6:** After all contacts are inserted, fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.

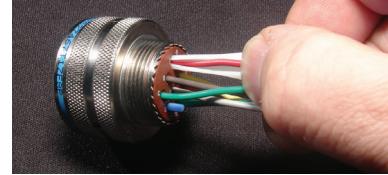
## CONTACT EXTRACTION



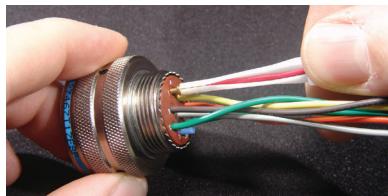
**STEP 1:** Remove hardware from plug or receptacle and slide hardware back along wire bundle.



**STEP 2:** Using plastic or metal extraction tool with proper color code corresponding to contact size, place wire in tool.



**STEP 3:** Insert tool into contact cavity until tool tip bottoms against the contact shoulder, expanding clip retaining tines.



**STEP 4:** Hold wire firmly in tool and extract wired contact and tool. Repeat operation for all contacts to be extracted.



**STEP 5:** Fill any empty cavities with wire sealing plugs. Reassemble plug or receptacle hardware.

All dimensions in inches (millimeters in parenthesis)