Connectors and Accessories Selection Guide
D38999 Series I

For Military, Aerospace & Harsh Environments

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MATEC Electronics

About MATEC

MATEC Electronics is an authorized and leading distributor, that specializes on the design and custom-engineered connectors, cables and electronic interconnect solutions for Military-Aerospace, Industrial and Telecom market fields. MATEC's deep technical and commercial knowledge on it's concentrated product portfolio has made the company the chosen distributor of the customers in the region it serves, Turkey, Middle East, Africa and Eastern Europe. Headquarted in Istanbul, MATEC also has a branch office in Ankara and warehouses in Istanbul and NY, U.S.A. With it's highly experienced team, knowledge on dynamic supply chain solutions and rich inventory, MATEC has provided it's customer with the best technical and commercial service along with the quality products since it was founded in 2011. Our first priority is complete customer satisfaction. While MATEC's IPC/WHMA-A-620 certified technical team acts as design partner in your projects, the company commercial team ensures that the service given has it is highest achievable standards. Due to the fact that MATEC Electronics works with the world's well-known companies, it offers its products with proven quality to its customers. We are ISO 9001:2015 registered and dedicated to use those guidelines for your satisfaction.

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How We Serve

As a leading and authorized distributor, MATEC Electronics supports all types electrical interconnect requirements of Mil-Aero projects. MATEC is not only able to provide solutions to electronic interconnect requirements technically, but it also provides best commercial experience to it's customers with dynamic team.

5015 Series Connectors

Backshells

26482 Series Connectors

Inventory Solutions

In addition to commercial and customized harsh environment Mil-Aero series, MATEC also offers most popular qualified Mil-Spec versions for all type of your projects from it's inventory. MATEC also supports all type of connector accessory requirements like strain reliefs, backshells, heat shrink tubes and contacts, providing order-to-manufacture kit solutions.

D38999 Series Connectors

Boots

2M Series Connectors

MIL-DTL-D38999 Series I

Amphenol LJT subminiature cylindrical connectors are qualified to MIL-DTL-38999 Series I .These connectors were developed to meet the needs of the military and aerospace industry and provided the impetus for the development of the MIL-C-38999 specifications, which has been superseded by MIL-DTL-38999. Meeting or exceeding MIL-DTL-38999 Series I requirements, these connectors offer:

-**Lightweight, Space Saving Design**

-**Quick Positive Coupling** - 3 point bayonet lock system

-**EMI Shielding** - Standart grounding fingers

-**Nine shell sizes and a Variety of Shell Styles**

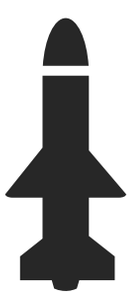
-**Contact Options** - Size 8, 10, 12, 16, 20, 22M and 22D crimp, solder, PCB, Wire wrap, Coax, Twinax, Triax, Thermocouple, Fiber Optic and Filter

-**Contact Protection** - 100% scoop-proof LJT design prevents bent pins and short circuits during mating

-**Fixed Solder Contacts** - Amphenol MIL-DTL-38999 Series I LJT, is avaliable in solder versions as commercial and military qualified to MIL-DTL-27599

-**RoHS Compliant Product Available** - Consult MATEC Electronics

Contact Size	Test Current (Amps)		Maximum Millivolt Drop Crimp*	Maximum Millivolt Drop	Contact Resistance	Contact Retention Force
	Crimp	Hermetic		Hermetic*		
22M	3	2	45	60	8	45
22D	5	3	73	85	8	45
22	5	3	73	85		
20	7.5	5	55	60	5	67
16	13	10	49	85	3	110
12	23	17	42	85	2	110
10 (Power)	33	NA	33	NA	2	
8 (Power)	46	NA	26	NA	2	150
4	80	NA	23	NA	2	150
0	150	NA	21	NA	2	150



MIL-DTL-D38999 Series I

Service Rating	Suggested Oper. Voltage (Sea Level)		Test Voltage (Sea Level)	Test Voltage (50.000 ft)	Test Voltage (70.000 ft)	Test Voltage (110.000 ft)
	AC (RMS)	DC				
N	400	550	1300 VRMS	550 VRMS	350 VRMS	200 VRMS
M	300	450	1000 VRMS	400 VRMS	260 VRMS	200 VRMS
I	600	850	1800 VRMS	600 VRMS	400 VRMS	200 VRMS
II	900	1250	2300 VRMS	800 VRMS	500 VRMS	200 VRMS

Shell Material	Shell Finish	Salt Spray Exposure per EIA364.26	Class Norm	Amphenol	Operating Temperature	
					Min	Max
Aluminium	Electroless Nickel	48 H	F	023	-65°C	+200°C
	O.D Cadmium	500 H	B	014	-65°C	+175°C
	Black Zinc Nickel	96 H	Z	033K	-65°C	+175°C
Bronze*	-	1000 H			-65°C	+200°C

*Contact us

Contact Size	Contact Diameter (mm)	Acceptable Cables						
		Gauge AWG Section (mm^2)				Outside Diameter (mm)		
						Min	Average	Max
22D	0.76	22	24	26	28	0.76	1.20	1.37
		0.38	0.22	0.15	0.095			
20	1	20	22	24	-	1.02	1.83	2.11
		0.60	0.38	0.22	-			
16	1.57	16	18	20	-	1.68	2.41	2.77
		1.34	0.93	0.60	-			
12	2.36	12	14	-	-	2.46	3.20	3.61
		3.30	1.94	-	-			
8	3.60	8				4.50	-	5.20
		8.98 Max Acceptable: $10mm^2$						
4	5.70	4				7.73	-	8.40
		21.10						
0	10.30	0				13.30	-	14.70
		100						

MIL-DTL-D38999 Series I

How to Order

MILITARY DESIGNATION

MS27466 E 13 B 35 P A BK4S-B1-DC-CG

Shell Type:

MS27466: Crimp Wall Mount Receptacle
MS27656: Crinp Wall Mount Receptacle (Back Panel Mounting)
MS27496: Crimp Box Mount Receptacle
MS27505: Crimp Box Mount Receptacle (Back Panel Mounting)
MS27467: Crimp Straight Plug
MS27468: Crimp Jam Nut Receptacle
*For Solder Types, Please Consult Us

Service Class:

E: Environmental Crimp Applications
P: Potting Crimp Applications, Supplied with Spacer Grommet and Potting Boot*
T: Environmental Applications, Supplied without Rear Accessories,
Design Provides Serrations on Rear Threads of Shells*
*Not Applicable for Box Mount Types

Shell Size:

09 11 13 15 17 19 21 23 25

Finish:

A: Cadmium Plated Nickel Base 175°C
B: Olive Drab Cadmium Plate Nickel Base 175°C
F: Electroless Nickel 200°C
C: Anodic Coating (Alumilite) 200°C
E: Passivated Steel 200°C

Insert Arrangement:

See Section "Insert Arrangements"

Contact Type:

P: With Pin Contacts
S: With Socket Contacts

Polarization:

Omit for Normal or A, B, C, D

Backshell Type:

BK4S: Straight Direct Coupling EMI Backshell with Constant Force Spring and Conductive Tape
BK4R: 90 Degree Spin Coupling EMI Backshell with Band for Braid Fixing (Please consult us for cable entry)
*Omit for No Backshell

Boot Type:

B1: Straight Boot
B2: 90 Degree Boot
*Omit for No Boot

Dust Cap:

Metallic Dust Cap
*Omit for No Cap

Conductive Gasket:

Conductive Gasket
*Omit for No Gasket

MIL-DTL-D38999 Series I

How to Order

AMPHENOL DESIGNATION

LJT 06 RT 13-35 P A BK4S-B2-DC-CG

Series:

Shell Type:

00: Wall Mounting Receptacle
PQ00: Wall Mounting Receptacle (Back Panel)
01: Inline Receptacle
06: Straight Plug
07: Jam Nut Receptacle

Service Class:

RT: Environmental Applications, Supplied without Rear Accessories
Design Provides Serrations on Rear Threads of Shells
RE: Environmental Crimp Applications
RP: Potting Crimp Applications, Supplied with Spacer Grommet and Potting Boot*
*Not Applicable for Box Mount Types
**For Other Contact Types, Please Consult Us.

Shell Size and Insert Arrangement:

09 11 13 15 17 19 21 23 25

*** See Section "Insert Arrangements"

Contact Type:

P: With Pin Contacts
S: With Socket Contacts

Polarization:

Omit for Normal or A, B, C, D

Backshell Type:

BK4S: Straight Direct Coupling EMI Backshell with Constant Force Spring and Conductive Tape
BK4R: 90 Degree Spin Coupling EMI Backshell with Band for Braid Fixing (Please consult us for cable entry)
*Omit for no backshell

Boot Type:

B1: Straight Boot
B2: 90 Degree Boot
*Omit for No Boot

Dust Cap:

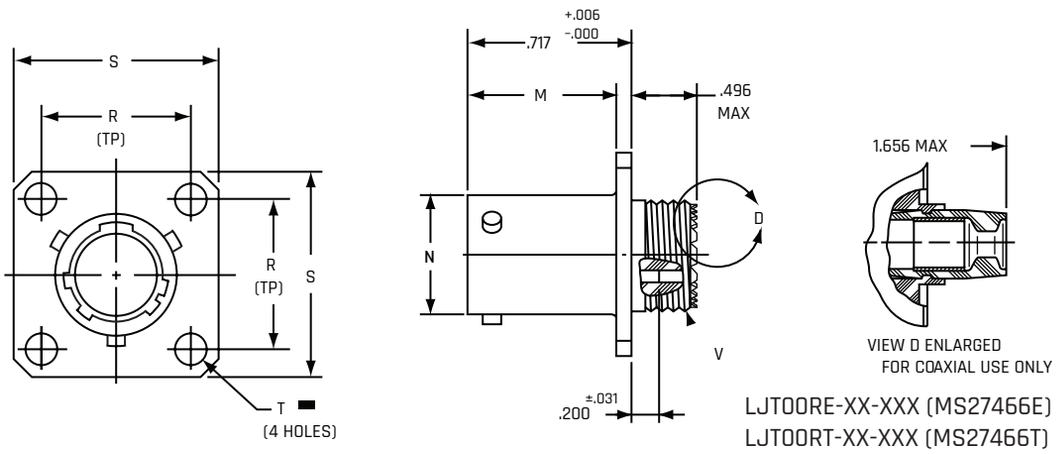
Metallic Dust Cap
*Omit for No Cap

Conductive Gasket:

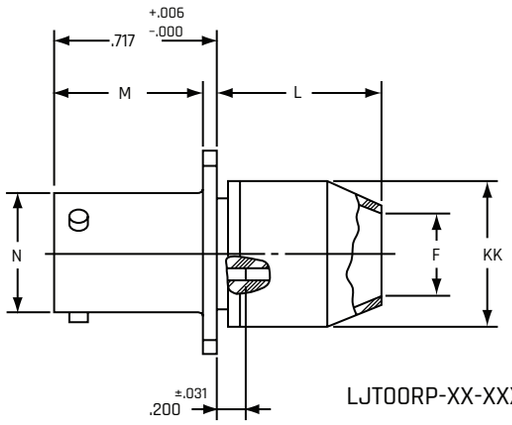
Conductive Gasket
*Omit for No Gasket

MIL-DTL-D38999 Series I

Wall Mount Receptacle



LJT00RE-XX-XXX (MS27466E)
LJT00RT-XX-XXX (MS27466T)

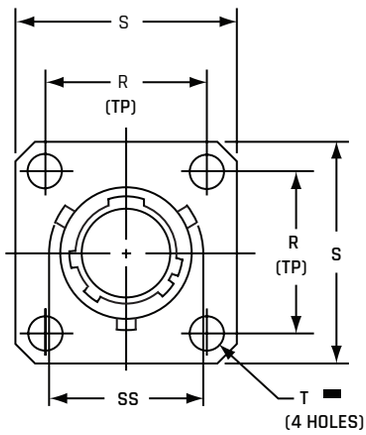


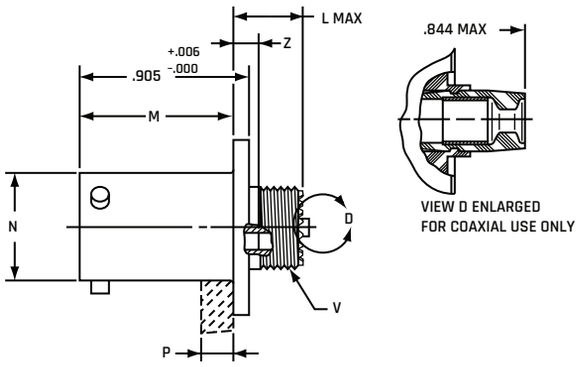
LJT00RP-XX-XXX (MS27466P)

Shell Size	F Dia ±.010	L Max	M +.000 -.005	N +.001 -.005	R (TP)	S ±.016	T Dia. ±.005	V Thread Class 2A (Plated)	KK Dia Max.
9	.444	.813	.632	.572	.719	.938	.128	.4375-28 UNEF	.608
11	.558	.813	.632	.700	.812	1.031	.128	.5625-24 UNEF	.734
13	.683	.813	.632	.850	.906	1.125	.128	.6875-24 UNEF	.858
15	.808	.813	.632	.975	.969	1.219	.128	.8125-20 UNEF	.984
17	.909	.813	.632	1.100	1.062	1.312	.128	.9375-20 UNEF	1.110
19	1.034	.813	.632	1.207	1.156	1.438	.128	1.0625-18 UNEF	1.234
21	1.159	.906	.602	1.332	1.250	1.562	.128	1.1875-18 UNEF	1.360
23	1.284	.906	.602	1.457	1.375	1.688	.147	1.3125-18 UNEF	1.484
25	1.409	.906	.602	1.582	1.500	1.812	.147	1.4375-18 UNEF	1.610

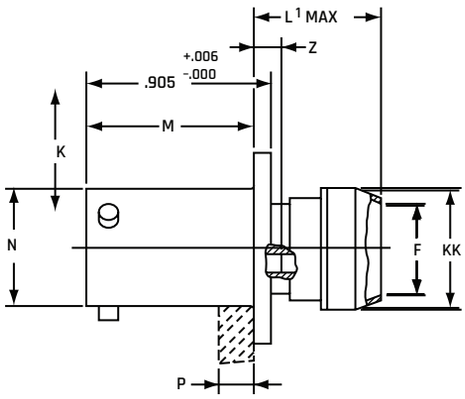
MIL-DTL-D38999 Series I

Wall Mount Receptacle (Back Panel Mounting)





LJTPQ00RE-XX-XXX (MS27656E)
LJTPQ00RT-XX-XXX (MS27656T)

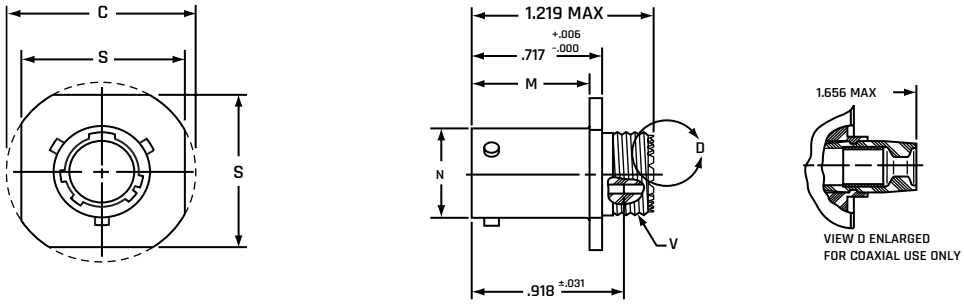


LJTPQ00RP-XX-XXX (MS27656P)

Shell Size	F Dia ±.010	L Max	L[1] Max	M +.000 -.005	N Dia	P Max Panel Thickness	R(TP)	S +.011 -.010	T Dia ±.005	V Thread Class 2A (Plated)	Z Max	KK Dia Max	SS Dia +.000 .016
9	.444	.453	.641	.820	.572	.234	.719	.938	.128	.4375-28 UNEF	.138	.625	.662
11	.558	.453	.641	.820	.700	.234	.812	1.031	.128	.5625-24 UNEF	.138	.750	.810
13	.683	.453	.641	.820	.850	.234	.906	1.125	.128	.6875-24 UNEF	.138	.875	.960
15	.808	.453	.641	.820	.975	.234	.969	1.219	.128	.8125-20 UNEF	.138	1.000	1.085
17	.909	.453	.641	.820	1.100	.234	1.062	1.312	.128	.9375-20 UNEF	.138	1.125	1.210
19	1.034	.453	.641	.820	1.207	.234	1.156	1.438	.128	1.0625-18 UNEF	.138	1.250	1.317
21	1.159	.484	.672	.790	1.332	.204	1.250	1.562	.128	1.1875-18 UNEF	.168	1.375	1.442
23	1.284	.484	.672	.790	1.457	.204	1.375	1.688	.147	1.3125-18 UNEF	.168	1.500	1.567
25	1.409	.484	.672	.790	1.582	.193	1.500	1.812	.147	1.4375-18 UNEF	.168	1.625	1.692

MIL-DTL-D38999 Series I

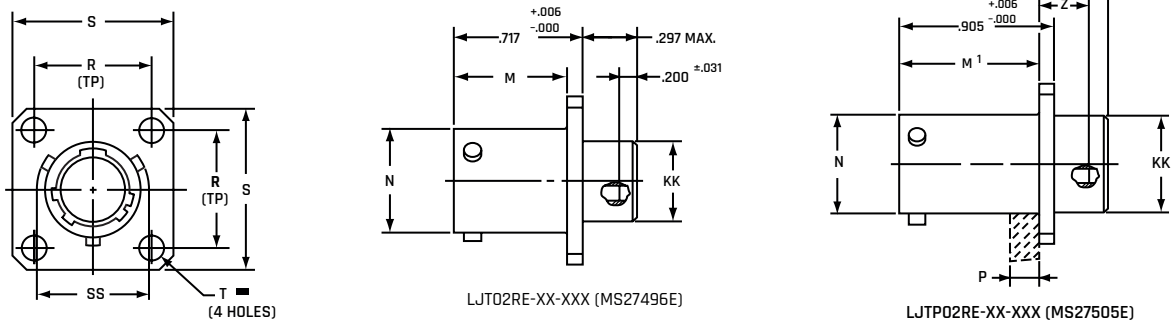
Inline Receptacle



LJT01RE-XX-XXX
LJT01RT-XX-XXX

Shell Size	C Max	M +.000 -.005	N +.000 -.005	S ±.016	V Thread Class 2A (Plated)
9	1.094	.632	.572	.938	.4375-28 UNEF
11	1.188	.632	.700	1.031	.5625-24 UNEF
13	1.281	.632	.850	1.125	.6875-24 UNEF
15	1.375	.632	.975	1.219	.8125-20 UNEF
17	1.469	.632	1.100	1.312	.9375-20 UNEF
19	1.594	.632	1.207	1.438	1.0625-18 UNEF
21	1.719	.602	1.332	1.562	1.1875-18 UNEF
23	1.844	.602	1.457	1.688	1.3125-18 UNEF
25	1.969	.602	1.582	1.812	1.4375-18 UNEF

Box Mount Receptacle (Back Panel Mounting)



LJT02RE-XX-XXX (MS27496E)

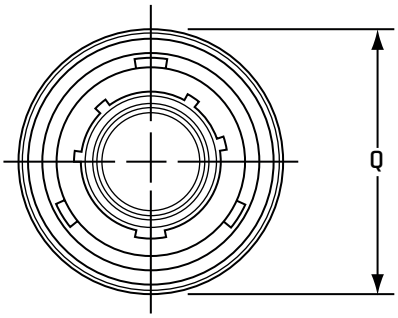
LJTP02RE-XX-XXX (MS27505E)

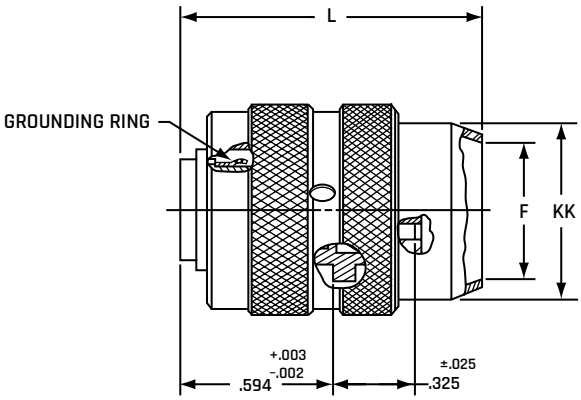
Shell Size	L Max	M +.000 -.005	M[1] +.001 -.005	N Dia +.001 -.005	P Max Panel Thickness	R(TP)	S +.011 -.010	T Dia ±.005	Z ±.031	KK Dia +.006 .005	SS Dia +.000 .016
9	.203	.632	.820	.572	.234	.719	.938	.128	.107	.433	.662
11	.203	.632	.820	.700	.234	.812	1.031	.128	.107	.557	.810
13	.203	.632	.820	.850	.234	.906	1.125	.128	.107	.676	.960
15	.203	.632	.820	.975	.234	.969	1.219	.128	.107	.801	1.085
17	.203	.632	.820	1.100	.234	1.062	1.312	.128	.107	.926	1.210
19	.203	.632	.820	1.207	.234	1.156	1.438	.128	.107	1.032	1.317
21	.234	.602	.790	1.332	.204	1.250	1.562	.128	.137	1.157	1.442
23	.234	.602	.790	1.457	.204	1.375	1.688	.147	.137	1.282	1.567
25	.234	.602	.790	1.582	.193	1.500	1.812	.147	.137	1407	1.692

■ ⌖ .005 DIA Ⓜ

MIL-DTL-D38999 Series I

Straight Plug





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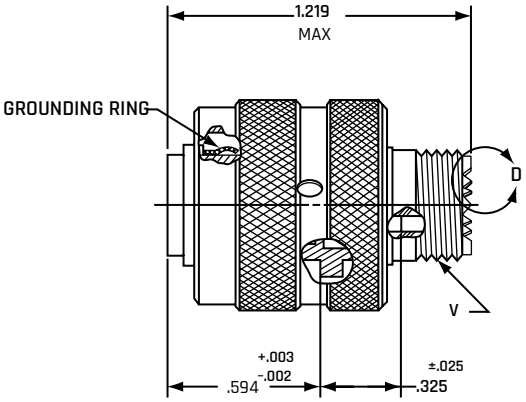
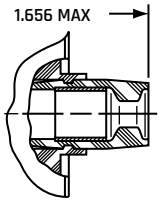


LJT06RE-XX-XXX (MS27467E)
LJT06RT-XX-XXX (MS27467T)



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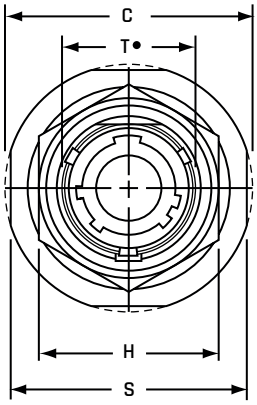
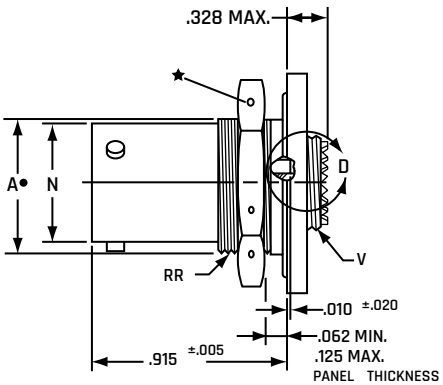
Shell Size	F Dia ±.010	L Max	Q Max	V Thread Class 2A (Plated)	KK Dia Max
9	.444	1.531	.844	.4375-28 UNEF	.608
11	.528	1.531	.969	.5625-24 UNEF	.734
13	.683	1.531	1.141	.6875-24 UNEF	.858
15	.808	1.531	1.266	.8125-20 UNEF	.984
17	.909	1.531	1.391	.9375-20 UNEF	1.110
19	1.034	1.531	1.500	1.0625-18 UNEF	1.234
21	1.159	1.625	1.625	1.1875-18 UNEF	1.360
23	1.284	1.625	1.750	1.3125-18 UNEF	1.484
25	1.409	1.625	1.875	1.4375-18 UNEF	1.610

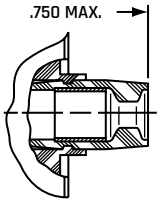
MIL-DTL-D38999 Series I

Jam Nut Receptacle





LJT07RE-XX-XXX (MS27468E)
LJT07RT-XX-XXX (MS27468T)



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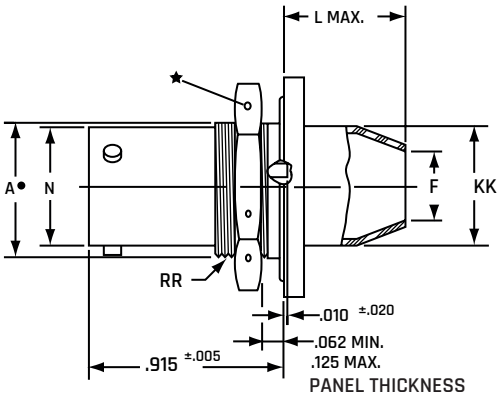


LJT07RP-XX-XXX (MS27468P)

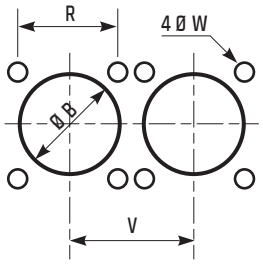
.059 Dia. Min. 3 lockwire holes.
Formed lockwire hole design (6 holes) is optional.
•"D" shaped mounting hole dimensions.

Shell Size	A• +.000 −.010	C Max	F Dia. ±.010	H Hex +.017 −.016	L Max	N +.001 −.005	S ±.016	T• +.010 −.000	V Thread Class 2A (Plated)	KK Dia Max	RR Thread Class 2A (Plated)
9	.669	1.199	.444	.875	.625	.572	1.062	.697	.4375-28 UNEF	.608	.6875-24 UNEF
11	.769	1.386	.558	1.000	.625	.700	1.250	.822	.5625-24 UNEF	.734	.8125-20 UNEF
13	.955	1.511	.683	1.188	.625	.850	1.375	1.007	.6875-24 UNEF	.858	1.0000-20 UNEF
15	1.084	1.636	.808	1.312	.625	.975	1.500	1.134	.8125-20 UNEF	.984	1.1250-18 UNEF
17	1.208	1.761	.909	1.438	.625	1.100	1.625	1.259	.9375-20 UNEF	1.110	1.2500-18 UNEF
19	1.333	1.949	1.034	1.562	.656	1.207	1.812	1.384	1.0625-18 UNEF	1.234	1.3750-18 UNEF
21	1.459	2.073	1.159	1.688	.750	1.332	1.938	1.507	1.1875-18 UNEF	1.360	1.5000-18 UNEF
23	1.580	2.199	1.284	1.812	.750	1.457	2.062	1.634	1.3125-18 UNEF	1.484	1.6250-18 UNEF
25	1.709	2.323	1.409	2.000	.750	1.582	2.188	1.759	1.4375-18 UNEF	1.610	1.7500-18 UNS

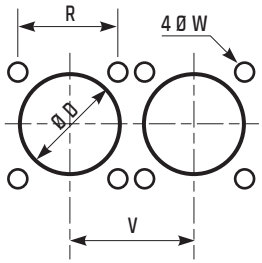
MIL-DTL-D38999 Series I

Panel Drilling

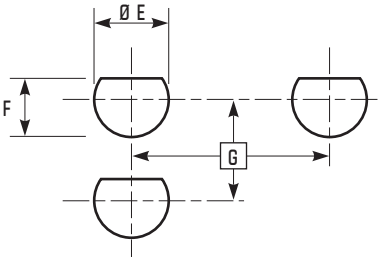
LJT PQ00
Square Flange Receptacle
Back Panel Mounting



LJT 00
Square Flange Receptacle
Front Panel Mounting



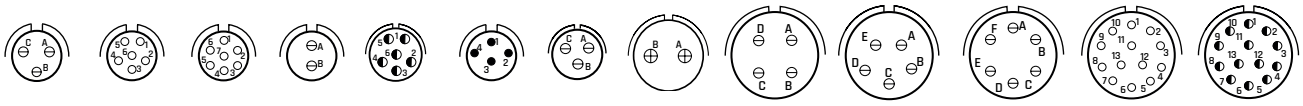
LJT 07
Jam Nut Receptacle
Back Panel Mounting



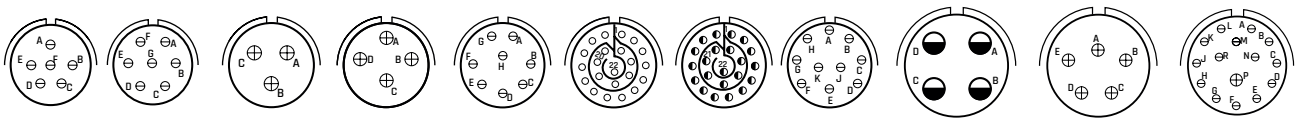
Shell Size	R (mm)	V + 0 - 0.25 (mm)	W + 0 - 0.25 (mm)	G Min (mm)	E Min (mm)	F + 0 - 0.25 (mm)	B + 0 - 0.41 Min (mm)	D + 0 - 0.25 Min (mm)
9	18.26	24.60	3.25	27.80	17.70	16.99	16.81	13.11
11	20.62	27.00	3.25	32.60	20.88	19.53	20.57	15.88
13	23.01	30.20	3.25	36.00	25.58	24.26	24.38	19.05
15	24.61	33.30	3.25	39.60	28.80	27.53	27.56	23.01
17	26.97	36.50	3.25	43.30	31.98	30.68	30.73	25.81
19	29.36	39.30	3.25	47.00	35.16	33.86	33.45	28.98
21	31.75	42.50	3.25	50.60	38.28	37.06	36.53	32.16
23	34.93	45.70	3.73	54.20	41.50	40.01	39.30	34.93
25	38.10	48.80	3.73	59.70	44.68	43.41	42.98	37.69

MIL-DTL-D38999 Series I

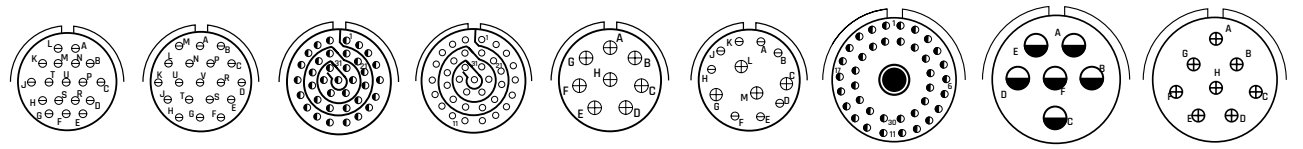
Insert Arrangements (Front face of pin inserts illustrated)



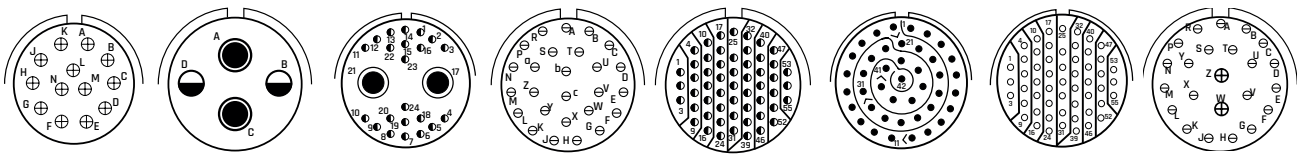
Insert Arrangement	9-3	9-6	9-7	9-22	9-35	9-44	9-98	11-2	11-4	11-5	11-6	11-13	11-35
Service Rating	M	M	M	I	M	M	I	I	I	I	I	M	M
Number of Contacts	3	6	7	2	6	4	3	2	4	5	6	13	13
Contact Size	20	22M	22M	20	22D	22	20	16	20	20	20	22M	22D



Insert Arrangement	11-98	11-99	13-3	13-4	13-8	13-22	13-35	13-98	15-4	15-5	15-15
Service Rating	I	I	II	I	I	M	M	I	I	II	I
Number of Contacts	6	7	3	4	8	22	22	10	4	5	14 1
Contact Size	20	20	16	16	20	22M	22D	20	12	16	20 16



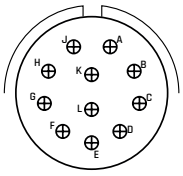
Insert Arrangement	15-18	15-19	15-35	15-37	15-68	15-97	17-2	17-6	17-8
Service Rating	I	I	M	M	I	I	M	I	II
Number of Contacts	18	19	37	37	8	8 4	38 1	6	8
Contact Size	20	20	22D	22M	16	20 16	22D 8 Twinax	12	16



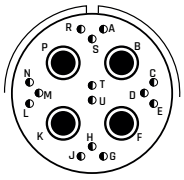
Insert Arrangement	17-13	17-22	17-25	17-26	17-35	17-42	17-55	17-99
Service Rating	I	Coax	M	I	M	M	M	I
Number of Contacts	13	2 2	22 2	26	55	42	55	21 2
Contact Size	16	12 Coax 8 Coax	22D 8 Coax	20	22D	22	22M	20 16

MIL-DTL-D38999 Series I

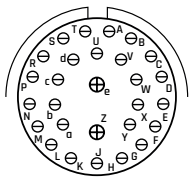
Insert Arrangements (Front face of pin inserts illustrated)



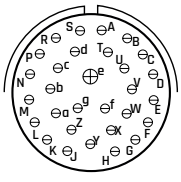
Insert Arrangement	19-11
Service Rating	II
Number of Contacts	11
Contact Size	16



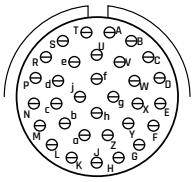
Insert Arrangement	19-18	
Service Rating	M	
Number of Contacts	14	4
Contact Size	22D	8 Twinax



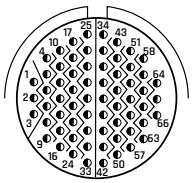
Insert Arrangement	19-28	
Service Rating	M	
Number of Contacts	26	2
Contact Size	20	16



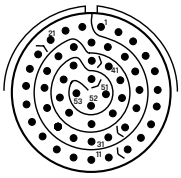
Insert Arrangement	19-30	
Service Rating	I	
Number of Contacts	29	1
Contact Size	20	16



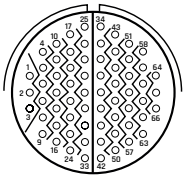
Insert Arrangement	19-32
Service Rating	I
Number of Contacts	32
Contact Size	20



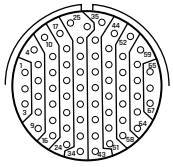
Insert Arrangement	19-35
Service Rating	M
Number of Contacts	66
Contact Size	22D



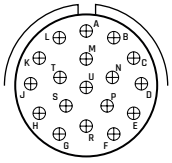
Insert Arrangement	19-53
Service Rating	M
Number of Contacts	53
Contact Size	22



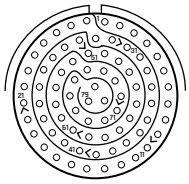
Insert Arrangement	19-66
Service Rating	M
Number of Contacts	66
Contact Size	22M



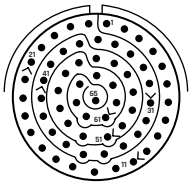
Insert Arrangement	19-67
Service Rating	M
Number of Contacts	67
Contact Size	22M



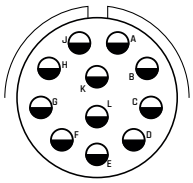
Insert Arrangement	19-68
Service Rating	I
Number of Contacts	18
Contact Size	16



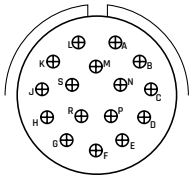
Insert Arrangement	21-1
Service Rating	M
Number of Contacts	79
Contact Size	22M



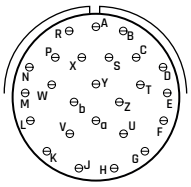
Insert Arrangement	21-2
Service Rating	II
Number of Contacts	65
Contact Size	22



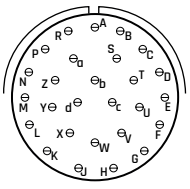
Insert Arrangement	21-11
Service Rating	I
Number of Contacts	11
Contact Size	12



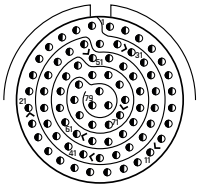
Insert Arrangement	21-16
Service Rating	II
Number of Contacts	16
Contact Size	16



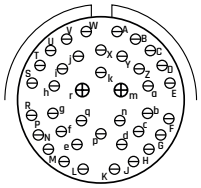
Insert Arrangement	21-25
Service Rating	I
Number of Contacts	25
Contact Size	20



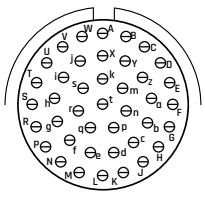
Insert Arrangement	21-27
Service Rating	I
Number of Contacts	27
Contact Size	20



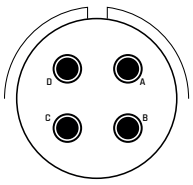
Insert Arrangement	21-35
Service Rating	M
Number of Contacts	79
Contact Size	22D



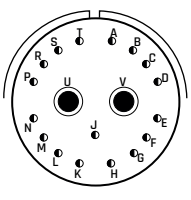
Insert Arrangement	21-39	
Service Rating	I	
Number of Contacts	37	2
Contact Size	20	16



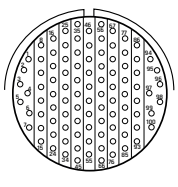
Insert Arrangement	21-41
Service Rating	I
Number of Contacts	41
Contact Size	20



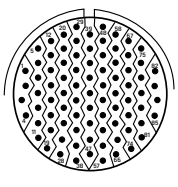
Insert Arrangement	21-75
Service Rating	N
Number of Contacts	4
Contact Size	(See Note)



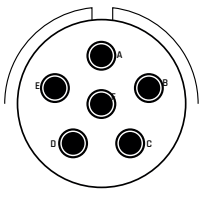
Insert Arrangement	21-79
Service Rating	II
Number of Contacts	17 (See Note)
Contact Size	22D



Insert Arrangement	23-1
Service Rating	M
Number of Contacts	100
Contact Size	22M



Insert Arrangement	23-2
Service Rating	M
Number of Contacts	85
Contact Size	22

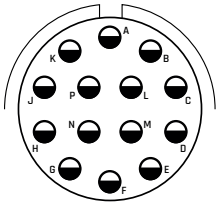


Insert Arrangement	23-6
Service Rating	M
Number of Contacts	6
Contact Size	8 Twinax

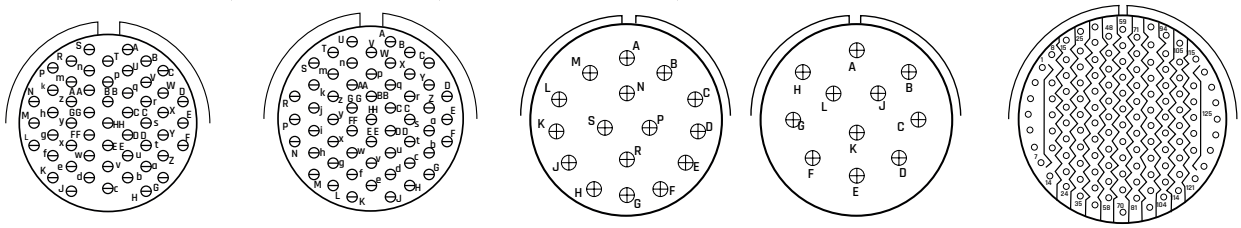
Note: MS connector 21-75 is supplied with four size 8 twinax contacts. Commercial connector 21-75 is supplied with four size 8 coax contacts. MS connector 21-79 has provision for two size 8 coax contacts. Coax contacts are not supplied unless specified by customers.

MIL-DTL-D38999 Series I

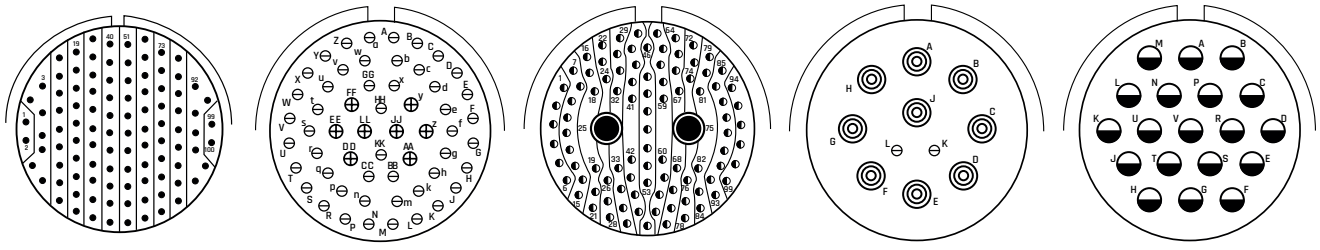
Insert Arrangements (Front face of pin inserts illustrated)



Insert Arrangement	23-14	23-21	23-32	23-34	23-35
Service Rating	I	II	I	I	M
Number of Contacts	14	21	32	34	100
Contact Size	12	16	20	20	22D



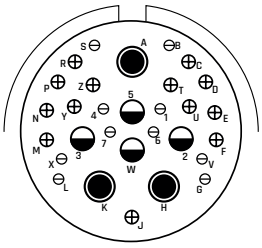
Insert Arrangement	23-53	23-55	23-97	23-99	25-1
Service Rating	I	I	II	II	M
Number of Contacts	53	55	16	11	128
Contact Size	20	20	16	16	22M



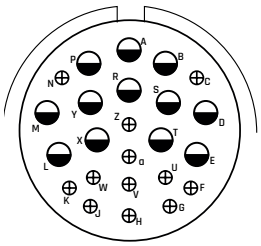
Insert Arrangement	25-2	25-4		25-7		25-11		25-19
Service Rating	M	I		M		N		I
Number of Contacts	100	48	8	97	2	2	9	19
Contact Size	22	20	16	22D	8 Twinax	20	10	12

MIL-DTL-D38999 Series I

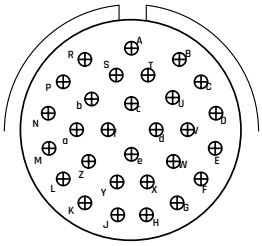
Insert Arrangements (Front face of pin inserts illustrated)



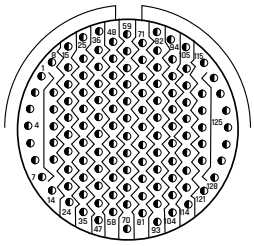
Insert Arrangement	25-20			
Service Rating	N			
Number of Contacts	10	13	3	4
Contact Size	20	16	8 Twinax (With Matched Impedance)	12 Coax



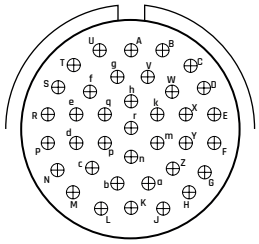
Insert Arrangement	25-24	
Service Rating	I	
Number of Contacts	12	12
Contact Size	16	12



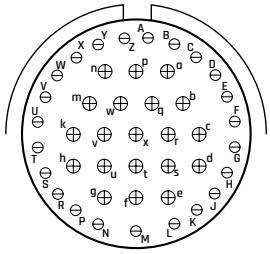
Insert Arrangement	25-29
Service Rating	I
Number of Contacts	29
Contact Size	16



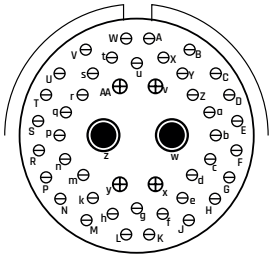
Insert Arrangement	25-35
Service Rating	M
Number of Contacts	128
Contact Size	22D



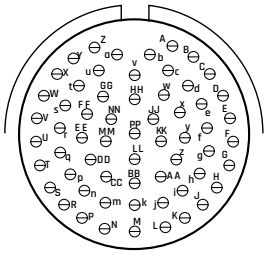
Insert Arrangement	25-37
Service Rating	I
Number of Contacts	37
Contact Size	16



Insert Arrangement	25-43	
Service Rating	I	
Number of Contacts	23	20
Contact Size	20	16



Insert Arrangement	25-46		
Service Rating	I		
Number of Contacts	40	4	2
Contact Size	20	16	8 Coax †



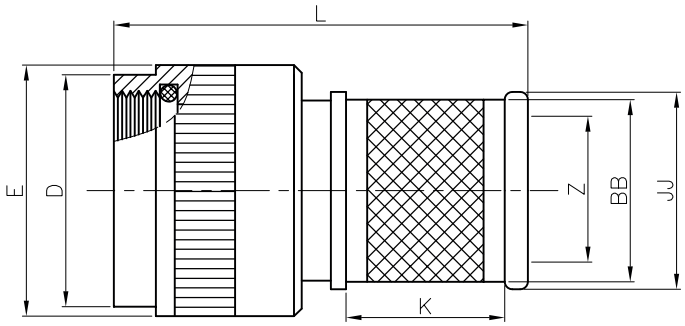
Insert Arrangement	25-61
Service Rating	I
Number of Contacts	61
Contact Size	20

† Coax contacts for RG180/U or RG195/U cable.

MIL-DTL-D38999 Series I

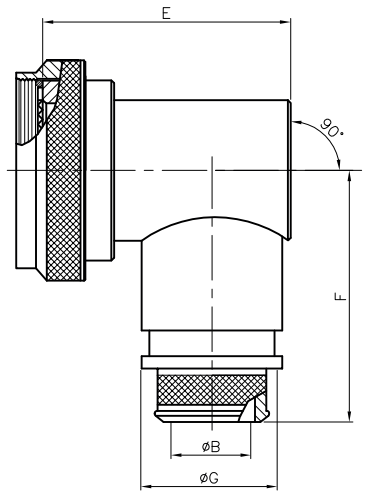
BK4S Backshell

*Constant Force Spring and Shielding Tape Included



Connector Shell Size	ØD ±1.5		ØE +0.20 -0.00		ØZ CABLE MAX		ØBB MAX		ØJJ MAX		K MAX		L MAX	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
09	0.596	15.14	0.674	17.14	0.281	7.2	0.391	9.9	0.486	12.3	0.433	11.0	1.97	50.0
11	0.712	18.11	0.791	20.11	0.338	8.6	0.493	12.5	0.587	14.9	0.433	11.0	2.09	53.1
13	0.829	21.08	0.908	23.08	0.506	12.9	0.665	16.9	0.783	19.9	0.476	12.1	2.1	53.3
15	0.985	25.04	1.064	27.04	0.562	14.3	0.744	18.9	0.862	21.9	0.476	12.1	2.21	56.1
17	1.103	28.02	1.181	30.02	0.619	15.7	0.821	20.9	0.939	23.9	0.476	12.1	2.28	57.9
19	1.220	30.99	1.298	32.99	0.675	17.1	0.891	22.6	1.010	25.6	0.476	12.1	2.36	59.9
21	1.337	33.96	1.415	35.96	0.731	18.6	0.954	24.2	1.072	27.2	0.476	12.1	2.4	61.0
23	1.448	36.80	1.527	38.80	0.843	21.4	1.095	27.8	1.213	30.8	0.476	12.1	2.52	64.0
25	1.566	39.78	1.644	41.78	0.900	22.86	1.160	29.4	1.276	32.4	0.476	12.1	2.52	64.0

BK4R Backshell

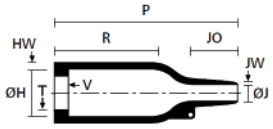


Connector Shell Size	ØA Max		C Max		D Max		F Max		E Max		ØB +0.25 -0.50		ØG Max	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
09	0.859	21.82	0.519	13.20	1.150	29.21	1.279	32.51	0.839	21.33	0.250	6.35	0.547	13.90
11	0.986	25.04	0.540	13.72	1.170	29.72	1.339	34.03	0.970	24.64	0.374	9.52	0.657	16.70
13	1.156	29.36	0.570	14.48	1.200	30.50	1.409	35.81	1.090	27.69	0.500	12.70	0.780	19.80
15	1.281	32.54	0.590	14.99	1.230	31.25	1.469	37.33	1.219	30.98	0.562	14.30	0.843	21.40
17	1.406	35.71	0.620	15.75	1.250	31.75	1.529	38.86	1.339	34.03	0.625	15.88	0.906	23.00
19	1.516	38.51	0.629	16.00	1.259	32.00	1.589	40.38	1.409	35.81	0.688	17.50	0.969	24.60
21	1.641	41.68	0.659	16.76	1.289	32.76	1.659	42.16	1.529	38.86	0.750	19.05	1.031	26.20
23	1.766	44.86	0.681	17.30	1.320	33.53	1.719	43.68	1.659	42.16	0.875	22.23	1.157	29.40
25	1.891	48.03	0.708	18.00	1.339	34.03	1.779	45.21	1.779	45.21	0.938	23.83	1.220	31.00

MIL-DTL-D38999 Series I

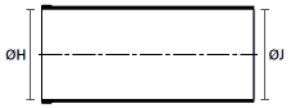
Straight Boot: B1 Style

a: Expanded form (supplied)

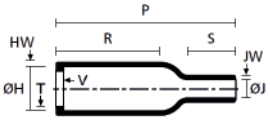


b: Fully recovered form (after heating)

Connector Shell Size	ØH Min. A	ØH Max. B	ØJ Min. A	ØJ Max. B	P ± 10%	R ± 10%	JO ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 20%
B=11	24.0 (.94")	10.5 (.41")	24.0 (.94")	6.0 (.23")	38.0 (1.48")	21.0 (.82")	10.0 (.39")	1.6 (.06")	0.5 (.02")	3.0 (.12")	1.0 (.04")
C=13 / D=15	25.0 (.98")	14.0 (.55")	9.0 (.35")	3.5 (.14")	55.0 (2.15")	28.0 (1.09")	16.0 (.62")	1.8 (.07")	0.5 (.02")	3.0 (.12")	1.0 (.04")
E=17 / F=19	31.0 (1.21")	18.0 (.7")	31.0 (1.21")	7.0 (.27")	67.0 (2.61")	35.0 (1.37")	18.0 (.7")	1.8 (.07")	1.0 (.04")	3.0 (.12")	1.0 (.04")
G=21 / H=23	36.0 (1.4")	22.5 (.88")	36.0 (1.4")	8.5 (.33")	80.0 (3.12")	42.0 (1.64")	20.0 (.78")	2.0 (.08")	1.0 (04")	3.0 (.12")	1.0 (.04")
J=25	43.0 (1.68")	28.0 (1.09")	43.0 (1.68")	10.0 (.39")	79.0 (3.08")	41.0 (1.6")	20.0 (.78")	2.2 (.09")	1.0 (.04")	3.0 (.12")	1.7 (.07")



a: Expanded form (supplied)



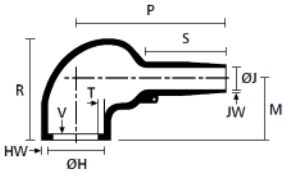
b: Fully recovered form (after heating)

Connector Shell Size	ØH Min. A	ØH Max. B	ØJ Min. A	ØJ Max. B	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 20%	S nom.
A=9	16.5 (.64")	7.9 (.31")	16.5 (.64")	3.8 (.15")	25.4 (.99")	14.2 (.55")	1.3 (.05")	1.3 (.05")	3.0 (.12")	1.0 (.04")	6.9 (.27")

Dimensions in mm, inches in brackets. Subject to technical changes.

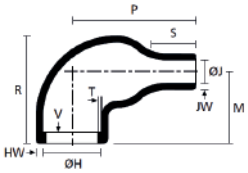
90 Degree Boot: B2 Style

a: Expanded form (supplied)



b: Fully recovered form (after heating)

a: Expanded form (supplied)



b: Fully recovered form (after heating)

Connector Shell Size	ØH Min. A	ØH Max. B	ØJ Min. A	ØJ Max. B	P ± 10%	R ± 10%	HW ± 20%	JW ± 20%	V ± 10%	T ± 20%	M Nom.	S Nom.
B=11 C=13	24.0 (.94")	10.5 (.41")	24.0 (.94")	6.0 (.23")	26.0 (1.01")	25.0 (.98")	1.3 (.05")	0.5 (.02")	3.0 (.12")	1.0 (.04")	19.0 (.74")	10.0 (.39")
D=15	30.0 (1.17")	15.5 (.6")	30.0 (1.17")	6.0 (.23")	32.0 (1.25")	27.0 (1.05")	1.5 (.06")	0.8 (.03")	3.0 (.12")	1.0 (.04")	19.0 (.74")	12.0 (.47")
E=17 F=19	31.0 (1.21")	18.0 (.7")	31.0 (1.21")	7.0 (.27")	40.0 (1.56")	31.0 (1.21")	1.8 (.07")	1.0 (.04")	3.0 (.12")	1.0 (.04")	21.0 (.82")	15.0 (.59")
G=21 H=23	36.0 (1.4")	22.5 (.88")	36.0 (1.4")	8.5 (.33")	46.0 (1.79")	38.0 (1.48")	1.8 (.07")	1.0 (.04")	3.0 (.12")	1.0 (.04")	26.0 (1.01")	15.0 (.59")
J=25	43.0 (1.68")	28.5 (1.11")	43.0 (1.68")	10.0 (.39")	55.0 (2.15")	45.0 (1.76")	2.0 (.08")	1.0 (.04")	3.0 (.12")	1.7 (.07")	30.0 (1.17")	16.0 (.62")

Connector Shell Size	ØH Min. A	ØH Max. B	ØJ Min. A	ØJ Max. B	P ± 10%	R ± 10%	HW ± 20%	M Nom.	JW ± 20%	V ± 10%	T ± 20%	S Nom.
A=9	16.5 (.64")	7.9 (.31")	16.5 (.64")	2.5 (.1")	18.3 (.71")	20.1 (.78")	1.0 (.04")	15.2 (.59")	1.6 (.06")	3.3 (.13")	1.0 (.04")	5.1 (.2")

Material Specifications:

Material Description: Fluid resistant elastomer
Minimum Shrink Temperature: +275°F (+135°C)
Operating Temperature Range: -103°F to +302°F (-75°C to +150°C)

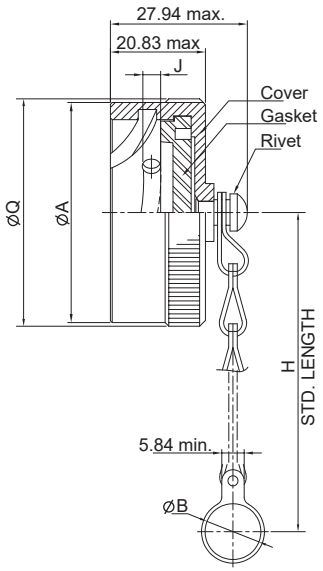
Adhesive Specifications:

Adhesive: High performance, pre-coat, 1 part epoxy
Operating Temperature: -103°F to +392°F (-75°C to +200°C)
Solvent Resistance
De-icing Fluid: Excellent
Petrol: Excellent
Lubricating Oil: Excellent
Hydraulic Oil: Excellent

Dimensions in mm, inches in brackets. Subject to technical changes.

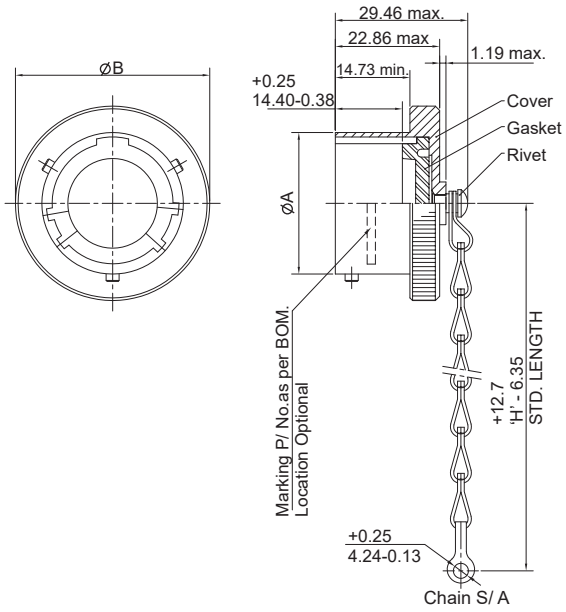
MIL-DTL-D38999 Series I

Dust Cap Drawing For Receptacles



Connector Shell Size	ØA Max	ØB Min	H +12.70 -6.35	J ±0.38	ØB Max
09	19.81	17.78	76.20	2.67	21.84
11	22.99	21.34			24.89
13	26.95	25.65	88.90		29.46
15	30.12	28.96			32.51
17	33.05	32.00			35.81
19	36.12	35.31			38.61
21	39.22	38.35	101.60		41.91
23	42.34	41.66			44.96
25	45.54	44.70		3.51	48.01

Dust Cap Drawing For Plugs



Connector Shell Size	ØA +0.02 -0.13	ØB Max	H +12.70 -6.35
09	14.53	18.29	76.20
11	17.78	21.59	
13	21.59	25.40	88.90
15	24.77	28.70	
17	27.94	31.75	
19	30.66	35.05	
21	33.83	38.10	101.60
23	37.01	41.40	
25	40.18	44.45	

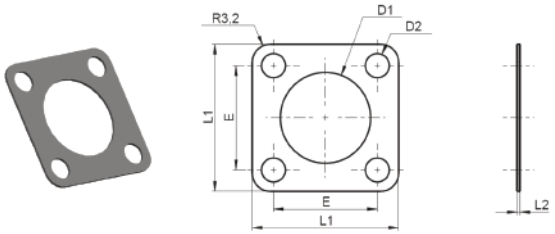
MIL-DTL-D38999 Series I

Conductive Gaskets

Electrical Properties

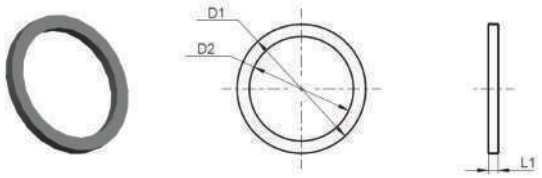
Contents	Properties
Material	Nickel Coated Graphite
Temp. Rating	-75˚C // +150˚C
Volume Resistivity	Max. 0.10
Specific Gravity (at 25˚C)	2.0±0.3
Hardness (Shore A)	60±5
Tensile Strength (kgf/cm^2)	Min. 20
Tear Strength (kN/m)	Min. 6
Elongation(%)	Min. 200

Square Flange Receptacle



Size	D1 (+0.4)	D2 (-0.3)	L1 (±0.25)	L2 (±0.1)	E (±0.25)
9	15.88	3.50	23.83	0.51	18.26
11	19.05		26.19		20.65
13	22.23		28.56		23.01
15	25.40		30.96		24.61
17	30.16		34.80		27.00
19	31.75		36.53		29.36
21	34.93		39.70		31.75
23	38.10	4.50	42.88		34.93
25	41.50		46.50		37.10

Jam Nut Receptacle



Size	D1	D2	L1 (+0.1/-0.15)
A=9	24.00	20.00	2.00
B=11	29.00	25.00	
C=13	32.00	28.00	
D=15	35.00	31.00	
E=17	38.50	34.50	
F=19	43.00	37.00	
G=21	46.00	40.00	
H=23	50.00	44.00	
J=25	53.00	47.00	

MIL-DTL-D38999 Series I

Crimp Contacts

Contact Size	Pins	Sockets	Cable Type
12	M39029/58-365	M39029/56-353	
16	M39029/58-364	M39029/56-352	
20	M39029/58-363	M39029/56-351	
22D	M39029/58-360	M39029/56-348	
8(Coax)	M39029/60-367	M39029/59-366	M17/95-RG180
8(Twinax)	M39029/90-529	M39029/91-530	M17/176-00002
12(Coax)	M39029/28-211	M39029/75-416	M17/94-RG179 M17/113-RG316 M17/119-RG174
	M39029/28-409	M39029/75-417	M17/95-RG180 Raychem 9528 A1318
16(Coax)	M39029/76-424	M39029/77-428	M17/94-RG179 M17/113-RG316 M17/119-RG174 KX22B
	M39029/76-425	M39029/77-429	M17/93-RG178 M17/169-00001

*For other cable types, please consult us.

Sealing Plugs

Contact Size	Part Number
12	MS27488-12-2
16	MS27488-16-2
20	MS27488-20-2
22D	MS27488-22-2

MIL-DTL-D38999 Series I

Contact Size	Contact Type	Crimping Tool	Positioner
8 (Coax)	Inner Pin & Socket	M22520/2-01	M22520/2-31
	Outer Pin & Socket	M22520/5-01	M22520/5-41
12(Coax)	Inner Pin & Socket	M22520/2-01	M22520/2-34
	Outer Pin & Socket	M22520/31-01	M22520/31-02
12	Pin	M22520/1-01	M22520/1-04
	Socket	M22520/1-01	M22520/1-04
16 (Coax)	Inner Pin & Socket	M22520/2-01	M22520/2-35
	Outer Pin & Socket	M22520/4-01	M22520/4-02
16	Pin	M22520/1-01	M22520/1-04
	Socket	M22520/1-01	M22520/1-04
20	Pin	M22520/1-01	M22520/1-04
	Pin	M22520/2-01	M22520/2-10
	Socket	M22520/1-01	M22520/1-04
	Socket	M22520/2-01	M22520/2-10
22D	Pin	M22520/2-01	M22520/2-09
	Socket	M22520/2-01	M22520/2-07

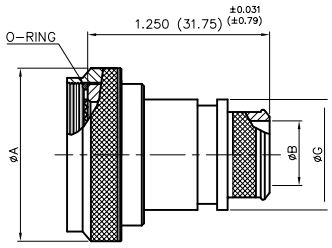
Contact Size	Insertion Tool	Removal Tool	Colour	
			Insertion	Extraction
8 Power	*	M81969/14-12	-	green
12	M81969/14-04	M81969/14-04	yellow	white
16	M81969/14-03	M81969/14-03	blue	white
20	M81969/14-10	M81969/14-10	red	orange
22D	M81969/14-01	M81969/14-01	green	white

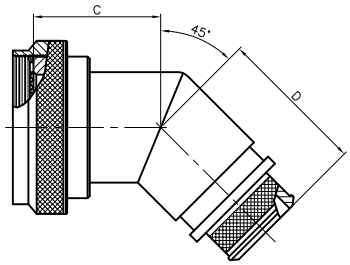
*Manuel Insertion

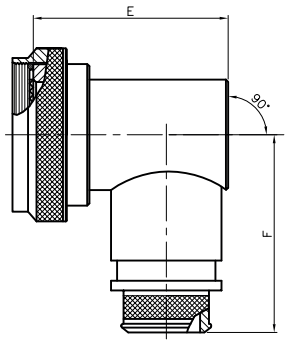
Contact Size	Straight Type		Angle Type	
	Insertion Tool	Removal Tool	Insertion Tool	Removal Tool
8 Power		809 961	*	809 845
12	-	-	809 838	809 839
16	809 816	809 846	809 812	809 820
20	809 817	809 847	809 813	809 821
22D	809 819	809 849	809 815	809 823

*Manuel Insertion

MIL-DTL-D38999 Series I
Other Backshells







All dimensions are in INCHES (mm)

Part Numbering System

BK4 X X K 99 99 9 X X

- Family Code
- Angle/Profile: S-Straight, A-90°, B-45°
- Coupling: S-Self-Lock, R-Spin Coupling
- Connector Group (Default)
- Shell Size Designator (Table A)
- Entry Size (Table B)
- Length: 9- For standart length in figure
- B- With Band for Braid Fixing; X- Without Band; S- With Constant Force Spring
- Material/Finish (Table-C)

***For suitable boots, please consult us.**

Table B

Entry Size	ØB +0.010-0.020 (+0.25-0.50)		ØG MAX	
	INCH	MM	INCH	MM
02	0.124	3.17	0.208	9.80
03	0.187	4.75	0.528	13.40
04	0.250	6.35	0.547	13.90
05	0.311	7.92	0.591	15.00
06	0.374	9.52	0.657	16.70
07	0.437	11.12	0.717	18.20
08	0.500	12.70	0.780	19.80
09	0.562	14.30	0.843	21.40
10	0.625	15.88	0.906	23.00
11	0.688	17.50	0.969	24.60
12	0.750	19.05	1.031	26.20
13	0.812	20.65	1.094	27.80
14	0.875	22.23	1.157	29.40
15	0.938	23.83	1.220	31.00
16	1.000	25.40	1.283	32.60
17	1.082	27.50	1.346	34.20
18	1.125	28.58	1.409	35.80
19	1.208	30.70	1.472	37.40
20	1.250	31.75	1.535	39.00
21	1.333	33.88	1.598	40.60
22	1.374	34.92	1.661	42.20
23	1.440	36.58	1.744	44.29
24	1.500	38.10	1.787	45.40

Table A

Shell Size Designator	MAX. Entry Size	Connector Shell Size	ØA Max.		C Max.		D Max.		F Max.		E Max.	
			INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
08	04	09	0.859	21.82	0.519	13.20	1.150	29.21	1.279	32.51	0.839	21.33
10	06	11	0.986	25.04	0.540	13.72	1.170	29.72	1.339	34.03	0.970	24.64
12	08	13	1.156	29.36	0.570	14.48	1.200	30.50	1.409	35.81	1.090	27.69
14	10	15	1.281	32.54	0.590	14.99	1.230	31.25	1.469	37.33	1.219	30.98
16	12	17	1.406	35.71	0.620	15.75	1.250	31.75	1.529	38.86	1.339	34.03
18	14	19	1.516	38.51	0.629	16.00	1.259	32.00	1.589	40.38	1.409	35.81
20	15	21	1.641	41.68	0.659	16.76	1.289	32.76	1.659	42.16	1.529	38.86
22	17	23	1.766	44.86	0.681	17.30	1.320	33.53	1.719	43.68	1.659	42.16
24	20	25	1.891	48.03	0.708	18.00	1.339	34.03	1.779	45.21	1.779	45.21

Table C

Code	Material/Finish
N	Aluminium Alloy/ Electroless Nickel
W	Aluminium Alloy/ Cadmium olive drab over Electroless Nickel
Y	Aluminium Alloy/ Zinc-cobalt dark olive drab over Electroless Nickel
TN	Aluminium Alloy/ Nickel Teflon
S	Stainless Steel/ Passivate
K	Nickel Aluminium Bronz/ Shot blast

Note: When maximum Cable Entry Exceed's consult **MATEC Electronics.**

MATING TECHNOLOGY

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