

INCH-POUND

MS90556J
w/AMENDMENT 3
10 April 2024
SUPERSEDING
MS90556J
w/AMENDMENT 2
24 February 2017

MILITARY SPECIFICATION SHEET

CONNECTOR, PLUG, ELECTRICAL, STRAIGHT, CLASS L

This specification is approved for use by all
Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein
shall consist of this specification sheet and MIL-DTL-22992.

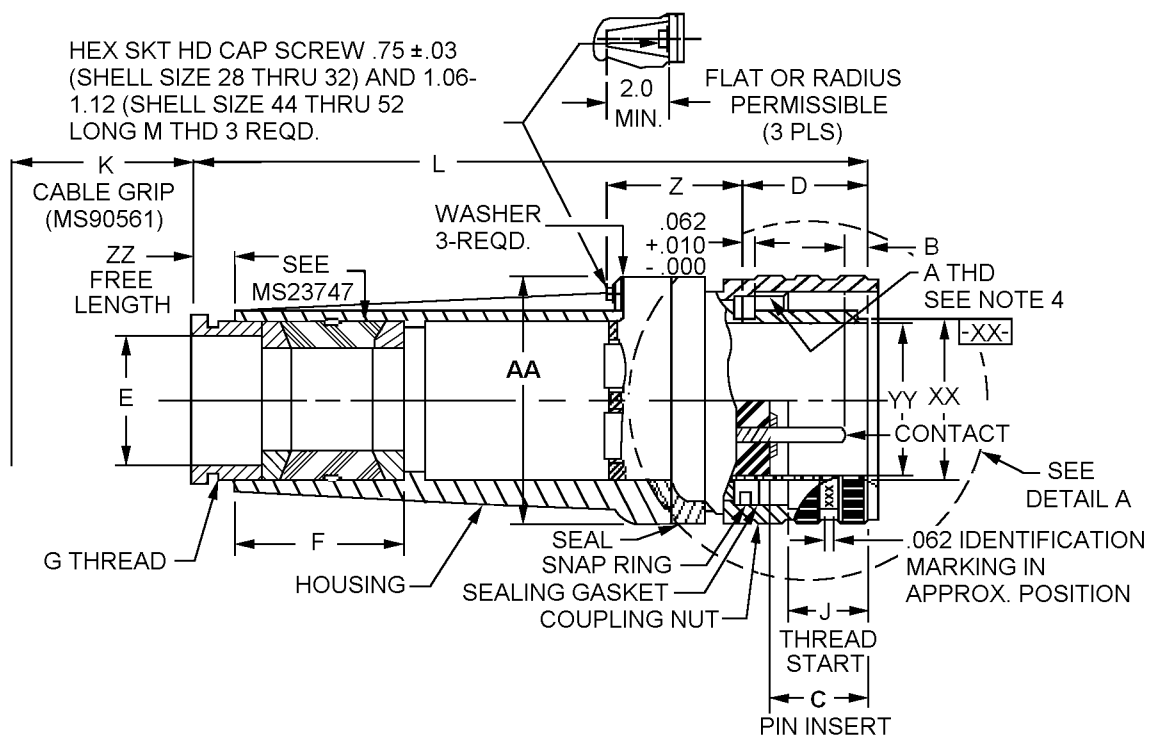


FIGURE 1. Plug.



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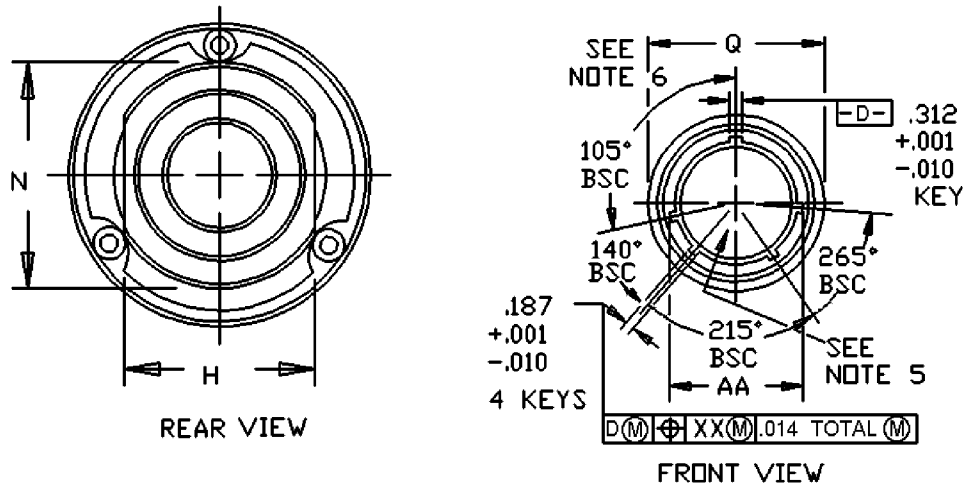
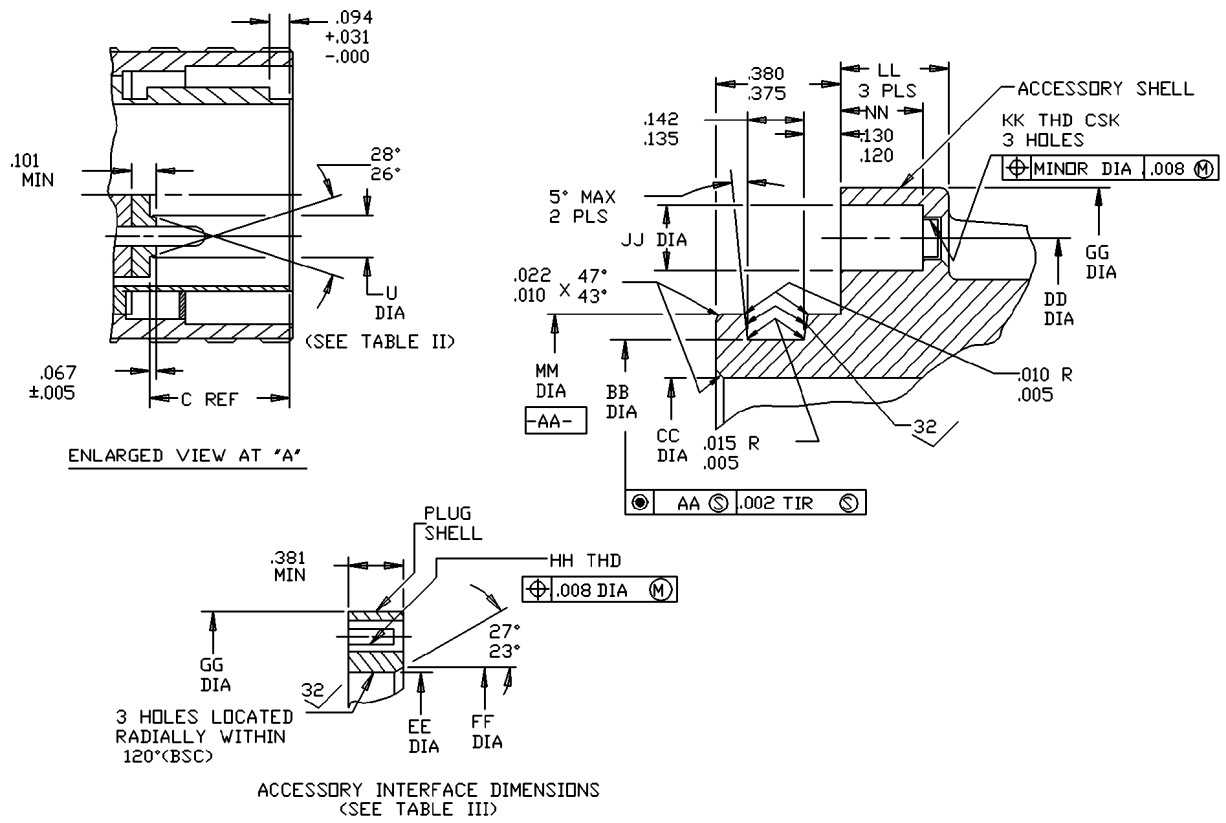


FIGURE 1. Plug – Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.030	0.76	.130	3.30	.381	9.68
.002	0.05	.031	0.79	.135	3.43	.750	19.05
.005	0.13	.062	1.57	.142	3.61	1.060	26.92
.008	0.20	.067	1.70	.187	4.75	1.120	28.45
.010	0.25	.094	2.39	.312	7.92	2.000	51.00
.014	0.36	.101	2.57	.375	9.53		
.022	0.56	.120	3.05	.380	9.65		

FIGURE 1. Plug – Continued.

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Shell size	B ± .047			C ± .016	D ± .005	J thread start ± .031	M thread
	Phase	Neutral	Ground				
28	.196 (4.98)	.078 (1.98)	.078 (1.98)	1.370 (34.80)	1.557 (39.55)	1.062 (26.97)	.164-32UNC
32	.196 (4.98)	.078 (1.98)	.078 (1.98)	1.370 (34.80)	1.557 (39.55)	1.062 (26.97)	.164-32UNC
44	.196 (4.98)	.078 (1.98)	.547 (13.89)	1.589 (40.36)	1.776 (45.11)	1.281 (32.54)	.250-28UNC
48	.196 (4.98)	.078 (1.98)	.547 (13.89)	1.589 (40.36)	1.776 (45.11)	1.281 (32.54)	.250-28UNC
52	.196 (4.98)	.078 (1.98)	.547 (13.89)	1.589 (40.36)	1.776 (45.11)	1.281 (32.54)	.250-28UNC

Shell size	A thread class 2B	Q dia max	Z ± .47	AA dia + .006 - .005	XX dia + .001 - .010	YY dia + .010 - .010	ZZ ± .035 free length
28	2.000-1428P-2857L	2.312 (58.72)	1.422 (36.12)	1.672 (42.47)	1.522 (38.66)	1.370 (34.80)	.562 (14.27)
32	2.250-1428P-2857L	2.562 (65.07)	1.422 (36.12)	1.922 (48.82)	1.772 (45.01)	1.620 (41.15)	.562 (14.27)
44	3.000-1428P-2857L	3.531 (89.69)	1.625 (41.28)	2.672 (67.87)	2.522 (64.06)	2.296 (58.32)	.672 (17.07)
48	3.250-1428P-2857L	3.782 (96.06)	1.625 (41.28)	2.891 (73.43)	2.725 (69.22)	2.551 (64.80)	.672 (17.07)
52	3.500-1428P-2857L	4.016 (102.01)	1.625 (41.28)	3.141 (79.78)	2.975 (75.57)	2.801 (71.15)	.672 (17.07)

FIGURE 1. Plug – Continued.

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Shell size	MM dia	BB dia	CC dia min	EE dia	FF dia	Packing preformed size (see note 7)
28	1.685 (42.80) 1.674 (42.52)	1.539 (39.09) 1.531 (38.89)	1.405 (35.69)	1.693 (43.00) 1.687 (42.85)	1.776 (45.11) 1.765 (44.83)	MS29513-128
32	1.935 (49.15) 1.924 (48.87)	1.789 (45.44) 1.781 (45.24)	1.655 (42.04)	1.943 (49.35) 1.937 (49.20)	2.026 (51.46) 2.015 (51.18)	MS29513-132
44	2.685 (68.20) 2.674 (67.92)	2.539 (64.49) 2.531 (64.29)	2.405 (61.09)	2.693 (68.40) 2.687 (68.25)	2.776 (70.51) 2.765 (70.23)	MS29513-144
48	2.935 (74.55) 2.924 (74.27)	2.789 (70.84) 2.781 (70.64)	2.655 (67.44)	2.943 (74.75) 2.937 (74.60)	3.026 (76.86) 3.015 (76.58)	MS29513-148
52	3.185 (80.90) 3.174 (80.62)	3.039 (77.19) 3.031 (76.99)	2.905 (73.79)	3.193 (81.10) 3.187 (80.95)	3.276 (83.21) 3.265 (82.93)	MS29513-151

FIGURE 1. Plug– Continued.

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Shell size	HH thread	Hex socket head size	JJ dia	KK thread	
				Size	Mod minor dia
28	.164-32UNC-2B	9/64	.198 (5.03)	.164-32UNC-2B	.143 (3.63)
			.187 (4.75)		.137 (3.48)
32	.164-32UNC-2B	9/64	.198 (5.03)	.164-32UNC-2B	.143 (3.63)
			.187 (4.75)		.137 (3.48)
44	.250-28UNF-2B	3/16	.286 (7.26)	.250-28UNF-2B	.229 (5.82)
			.275 (6.99)		.223 (5.66)
48	.250-28UNF-2B	3/16	.286 (7.26)	.250-28UNF-2B	.229 (5.82)
			.275 (6.99)		.223 (5.66)
52	.250-28UNF-2B	3/16	.286 (7.26)	.250-28UNF-2B	.229 (5.82)
			.275 (6.99)		.223 (5.66)

NOTES.

1. Dimensions are in inches.
2. Metric equivalents are given for information only.
3. Unless otherwise specified, tolerance is $\pm .016$ (0.41 mm).
4. Mates with receptacles shown on MS90555.
5. Inserts and contacts are removable.
6. Normal key position. For alternate key positions, see figure 2.
7. SAE-AS29513 dash numbers are for dimensions only. Packing material utilized for specified O-rings shall meet the performance requirements of MIL-DTL-22992.

FIGURE 1. Plug – Continued.

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TABLE I. U diameter by contact size. 1/ 2/

Contact size	U diameter (metric equivalents in parentheses)
4/0	.614 / .624 (15.60/15.85)
2/0	.520 / .530 (13.21/13.46)
1/0	.471 / .481 (11.96/12.22)
4	.339 / .349 (8.61/8.86)
6	.292 / .302 (7.42/7.67)

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

TABLE II. Accessory interface dimensions. 1/ 2/

Shell size	Arrangement no.	E Cable range	H +.001 -.010	L Max free length	N dia +.011 -.020
28	-02, -04	.844 (21.44)/ .719 (18.26)	1.750 (44.45)	8.188 (207.98)	2.000 (50.80)
	-03, -05, -06	.969 (24.61)/ .844 (21.44)			
	-07, -12	1.047 (26.59)/ .922 (23.42)			
	-13	1.130 (28.70)/ 1.005 (25.52)			
32	-02, -04	.969 (24.61)/ .844 (21.44)	1.750 (44.45)	8.188 (207.98)	2.000 (50.80)
	-03, -05, -12	1.130 (28.70)/ 1.005 (25.53)			
	-07	1.259 (31.98)/ 1.135 (28.83)			
	-13	1.342 (34.09)/ 1.217 (30.91)			
	-06	1.047 (26.59)/ .992 (25.2)			

See notes at end of table.

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TABLE II. Accessory interface dimensions - Continued. 1/ 2/

Shell size	Arrangement no.	E Cable range	H +.001 -.010	L max free length	N dia +.011 -.020
44	-02, -04	1.312(33.32)/ 1.187(30.15)	2.250 (57.15)	10.172 (258.37)	2.500 (63.50)
	-03, -05	1.438(36.53)/ 1.313(33.35)			
	-12	1.516(38.51)/ 1.391(35.33)			
	-13	1.672(42.47)/ 1.547(39.29)			
	-06	1.375(34.93)/ 1.250(31.75)			
	-51	1.734(44.04)/ 1.609(40.87)			
	-52 1/	1.525(38.74)/ 1.435(36.45)			
	-56 1/ 2/	1.135(28.82)/ 1.065(27.05)			
48	-13	2.000(50.80)/ 1.867(47.42)	2.750 (69.85)	10.734 (272.64)	2.953 (75.01)
52	-02	1.703(43.26)/ 1.558(39.57)	2.875 (73.03)	11.109 (282.17)	3.250 (82.55)
	-12	2.328(59.13)/ 2.183(55.45)			
	-13	2.453(62.31)/ 2.308(58.62)			
	-06	1.797(45.64)/ 1.652(41.96)			

See notes at end of table.

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TABLE II. Accessory interface dimensions – Continued. 1/ 2/

Shell size	Arrangement no.	G thread class 2 left hand	K approx. free length	DD dia basic	GG dia	LL	NN
28	-02, -04 -03, -05, -06 -07, -12 -13	1.8750-16UN	6.688 (169.88) 7.188 (182.58)	2.104 (53.44)	2.439 (61.95) 2.428 (61.67)	.417 (10.59) .406 (10.31)	.338 (8.59) .322 (8.18)
32	-02, -04 -03, -05, -12 -07 -13 -06	1.870-16UN	7.188 (182.58) 7.188 (182.58) 8.188 (207.98) 8.688 (220.68) 7.188 (182.58)	2.354 (59.79)	2.689 (68.30) 2.678 (68.02)	.417 (10.59) .406 (10.31)	.338 (8.59) .322 (8.18)
44	-02, -04 -03, -05 -12 -13 -06 -51 -52 <u>3/</u> -56 <u>3/ 4/</u>	2.3125-16UNS	10.688 (271.48) 9.688 (246.08) 10.688 (271.48) 12.688 (322.28) 9.688 (246.08) 11.688 (296.88) 11.188 (284.18) 7.188 (182.58)	3.156 (80.16)	3.667 (93.14) 3.646 (92.61)	.605 (15.37) .594 (15.09)	.526 (13.36) .510 (12.95)

See notes at end of table.

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TABLE II. Accessory interface dimensions – Continued. 1/ 2/

Shell size	Arrangement no.	G Thread class 2 left hand	K approx. free length	DD dia basic	GG dia	LL	NN
48	-13	2.7500-16UN	14.188 (360.38)	3.406 (86.51)	3.917 (99.49) 3.896 (98.96)	.605 (15.37) .594 (15.09)	.526 (13.36) .510 (12.95)
52	-02 -12 -13 -06	3.0000-16UN	13.688 (347.68) 17.188 (436.58) 18.188 (461.98) 13.688 (347.68)	3.656 (92.86)	4.167 (105.84) 4.146 (105.31)	.605 (15.37) .594 (15.09)	.526 (13.36) .510 (12.95)

1/ Dimensions are in inches.

2/ Metric equivalents are given for information only.

3/ Arrangements 44-52 and 44-56 are for stub cable applications only; they are not to be used in a cable assembly.

4/ Arrangement 44-56 to include 4 each MS3348-1-6L contact bushings.

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TABLE III. Insert arrangements, crimp bushings, and contacts.

Insert arrangement	Contacts 1/		Cable conductors 1/		Contact bushing required	
	Quantity	Size	Quantity	Size	Quantity	PIN MS3348-
28-02	2	6	2	8	2	6-8L
28-04	2	6	2	8	2	6-8L
	1	6 (G)	2	10 (G)	---	---
28-06	3	6	3	8	3	6-8L
	1	4 (G)	3	12 (G)	1	4-8L
28-07	3	6	3	8	---	---
	1	4 (G)	3	10 (G)	4	4-5L
28-12	4	6	4	8	4	6-8L
	1	6 (G)	4	12 (G)	---	---
32-02	2	4	2	6	2	4-6L
32-04	2	4	2	6	2	4-6L
	2	6 (G)	2	10 (G)	2	4-10L
32-05	2	4	2	4	---	---
	2	6 (G)	2	8 (G)	2	6-8L
32-06	3	4	3	6	3	4-6L
	1	4 (G)	3	12 (G)	1	4-8L
32-12	4	4	4	6	4	4-6L
	1	6 (G)	4	12 (G)	---	---
44-02	2	1/0	2	2	2	1-2L
44-04	2	1/0	2	2	2	1-2L
	2	4 (G)	2	6 (G)	2	4-6L
44-05	2	1/0	2	1	---	---
	2	4 (G)	2	5 (G)	2	4-5L
44-06	3	1/0	3	2	3	1-2L
	3	6 (G)	3	8 (G)	3	6-8L
44-12	4	1/0	4	2	4	1-2L
	4	6 (G)	4	9 (G)	4	6-9L
44-13	4	1/0	4	1	---	---
	4	6 (G)	4	8 (G)	4	6-8L
44-52	3	1/0	3	2	3	1-2L
	1	1/0 (G)	1	2 (G)	1	1-2L
44-56	3	1/0	3	6	3	1-6L
	1	1/0 (G)	1	6 (G)	1	1-6L
52-02	2	4/0	2	2/0	2	4/0-2/0L
52-06	3	4/0	3	2/0	3	4/0-2/0L
	3	4 (G)	3	5 (G)	3	4-5L

1/ (G) designates grounding.

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REQUIREMENTS:

Dimensions and configuration: See figure 1 and tables I, II, III and IV.

Mating: See MS90555 for mating receptacle.

Inserts and contacts: Removable.

For final installation: Contacts will be assembled in all insert holes.

Shell and nut finish: See MIL-DTL-22992.

Normal key position: See figure 1.

Alternate key position: See figure 2.

Insert arrangements: See MS90565, MS14054, MS14055 and MS14057.

Cover: In accordance with MS90564. Cover shall be attached to cap screw on body.

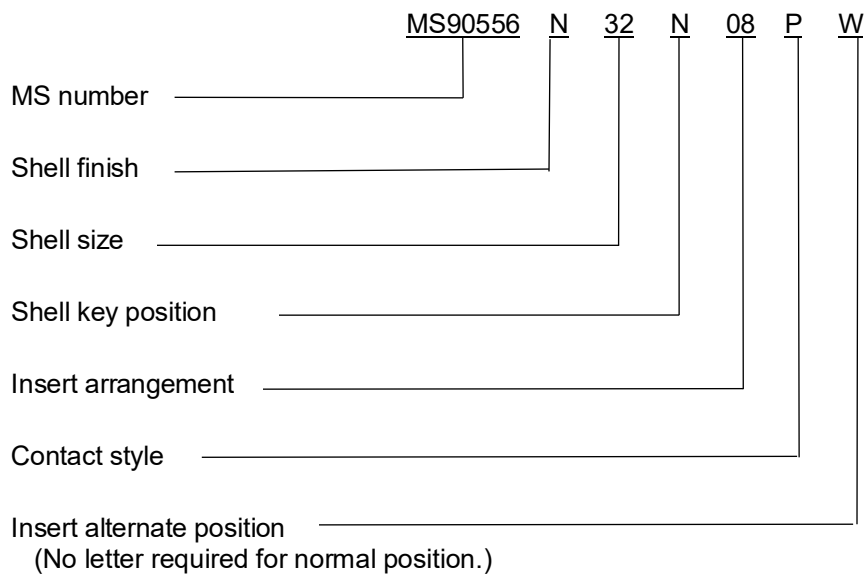
Crimp bushings: Shall be supplied with contact crimp bushings in accordance with SAE-AS39029/112 and table III herein.

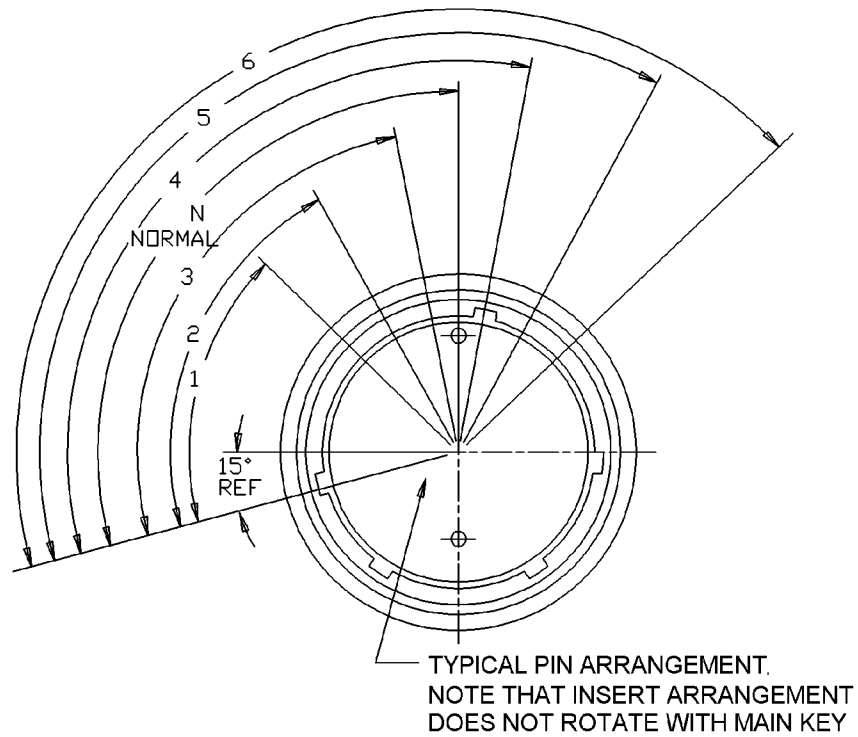
Cable sealing gland: In accordance with MS23747. Shall be supplied with each connector.

Cable grip: In accordance with MS90561. Shall be supplied with each connector.

Pin contacts: In accordance with SAE-AS39029/48.

Part or Identifying Number (PIN) example:





Finish N (nongrounding assemblies)

Shell size	Shell main key positions 2 wire, 28 V dc
28	N (105°)
32	N (105°)
44	N (105°)
48	N (105°)
52	N (105°)

FIGURE 2. Alternate key positions.

TABLE IV. Finishes, conductive (grounding assemblies).

Shell size	Shell main key position						
	60 Hz and 400 Hz (see note 1)						
	1Ø			3Ø			3Ø (see note 2)
	2 wire		3 wire	4 wire			3 wire
	120 V	240 V	120/240 V	120/208 V	240/416 V	277/480 V	450/480 V
28	4 (120°)	5 (135°)	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
32	4 (120°)	5 (135°)	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
44	4 (120°)	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	1 (60°)
48	---	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---
52	---	---	4 (120°)	4 (120°)	5 (135°)	6 (150°)	---

NOTES:

1. Discrimination of 60 Hz and 400 Hz assemblies is accomplished by alternate positioning of inserts. See applicable insert drawing for keying.
2. For Navy ground support equipment use only.
3. Shell main key positions 2 and 3 are not used.

FIGURE 2. Alternate key position – Continued.

Amendment notations. The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Referenced documents. In addition to MIL-DTL-22992, this document references the following:

MS14054
MS14055
MS14057
MS23747
MS90555
MS90561
MS90564
MS90565
SAE-AS29513
SAE-AS39029/48
SAE-AS39029/112

CONCLUDING MATERIAL

Custodians:

Army – CR
Navy – EC
Air Force – 85
DLA – CC

Preparing activity:

DLA – CC

Review activities:

Army – AT, AV, CR4, MI
Navy – AS, CG, MC, OS, SH
Air Force – 13, 19

(Project 5935-2024-123)

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