

INCH-POUND

MS90556H
 20 November 2008
 SUPERSEDING
 MS90556G
 3 January 2003

DEFENSE 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.

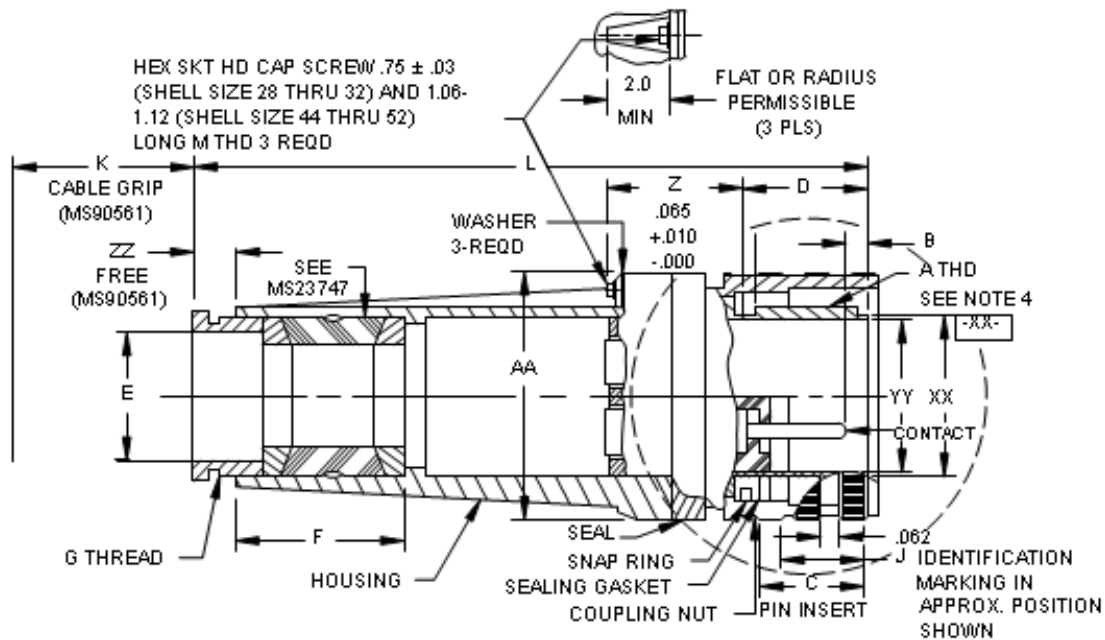


FIGURE 1. Plug.

AMSC N/A

FSC 5935

MS90556H

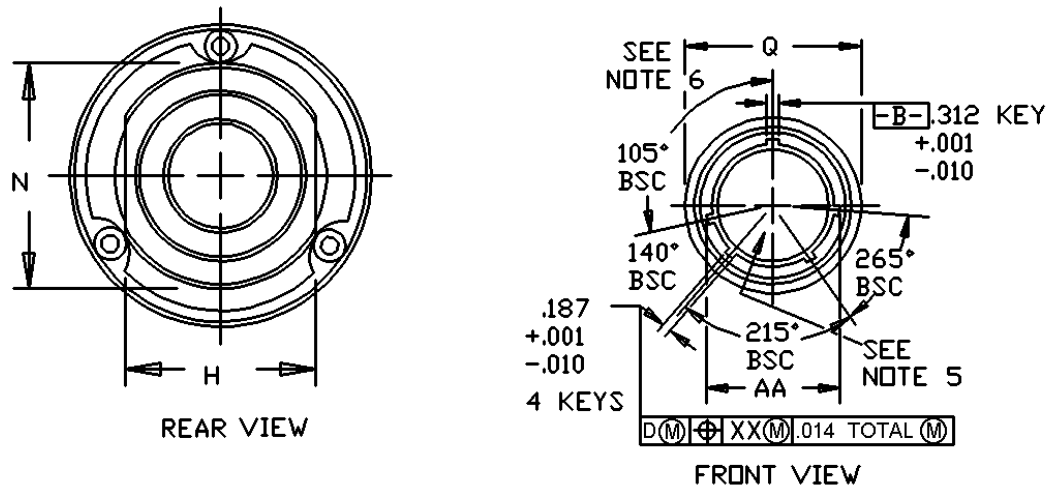


FIGURE 1. Plug – Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.562	14.27	1.765	44.83	2.562	65.07	2.975	75.57
.005	0.13	.672	17.07	1.772	45.01	2.655	67.44	3.015	76.58
.006	0.15	1.062	26.97	1.776	45.11	2.672	67.87	3.026	76.86
.010	0.25	1.281	32.54	1.781	45.24	2.674	67.92	3.031	76.99
.016	0.41	1.370	34.80	1.789	45.44	2.685	68.20	3.039	77.19
.031	0.79	1.405	35.69	1.922	48.82	2.687	68.25	3.141	79.78
.035	0.89	1.422	36.12	1.924	48.87	2.693	68.40	3.174	80.62
.047	1.19	1.522	38.66	1.935	49.15	2.725	69.22	3.185	80.90
.078	1.98	1.531	38.89	1.937	49.20	2.765	70.23	3.187	80.95
.137	3.48	1.539	39.09	1.943	49.35	2.776	70.51	3.193	81.10
.143	3.63	1.557	39.55	2.015	51.18	2.781	70.64	3.265	82.93
.187	4.75	1.589	40.36	2.026	51.46	2.789	70.84	3.276	83.21
.196	4.98	1.620	41.15	2.296	58.32	2.801	71.15	3.531	89.69
.198	5.03	1.625	41.28	2.312	58.72	2.891	73.43	3.782	96.06
.223	5.66	1.655	42.04	2.405	61.09	2.905	73.79	4.016	102.01
.229	5.82	1.672	42.47	2.522	64.06	2.924	74.27		
.275	6.99	1.674	42.52	2.531	64.29	2.935	74.55		
.286	7.26	1.687	42.85	2.539	64.49	2.937	74.60		
.547	13.89	1.693	43.00	2.551	64.80	2.943	74.75		

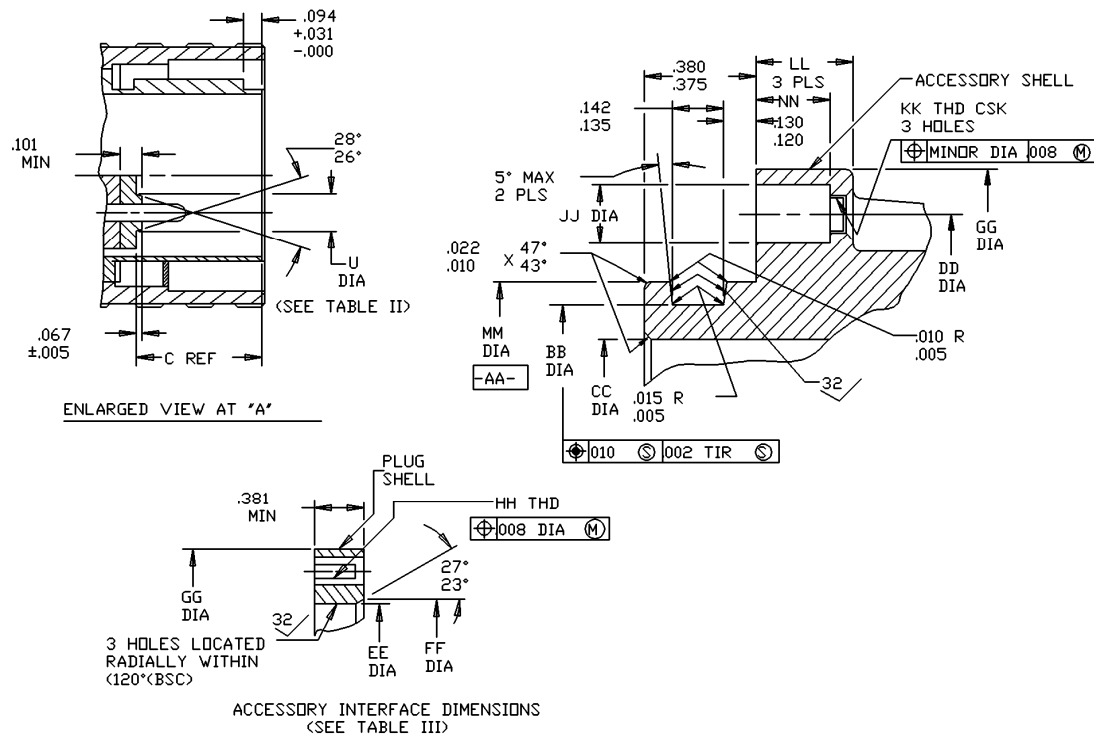
FIGURE 1. Plug – Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
.011	0.28	1.047	26.59	1.609	40.87	2.428	61.67	6.688	169.88
.020	0.51	1.065	27.05	1.652	41.96	2.439	61.95	7.188	182.58
.322	8.18	1.130	28.70	1.672	42.47	2.453	62.31	8.188	207.98
.338	8.59	1.135	28.83	1.703	43.26	2.500	63.50	8.688	220.68
.406	10.31	1.187	30.15	1.734	44.04	2.678	68.02	9.688	246.08
.417	10.59	1.217	30.91	1.750	44.45	2.689	68.30	10.172	258.37
.510	12.95	1.250	31.75	1.797	45.64	2.750	69.85	10.688	271.48
.526	13.36	1.259	31.98	1.812	46.02	2.875	73.02	10.734	272.64
.594	15.09	1.312	33.32	1.867	47.42	2.953	75.01	11.109	282.17
.605	15.37	1.313	33.35	1.938	49.23	3.156	80.16	11.188	284.18
.719	18.26	1.342	34.09	2.000	50.80	3.250	82.55	11.688	296.88
.844	21.44	1.375	34.93	2.104	53.44	3.406	86.51	12.688	322.28
.922	23.42	1.391	35.33	2.125	53.97	3.646	92.61	13.688	347.68
.969	24.61	1.435	36.45	2.183	55.45	3.656	92.86	14.188	360.38
.992	25.20	1.438	36.53	2.188	55.58	3.667	93.14	17.188	436.58
1.005	25.53	1.516	38.51	2.250	57.15	3.896	98.96	18.188	461.98
		1.525	38.74	2.308	58.62	3.917	99.49		
		1.547	39.29	2.328	59.13	4.146	105.31		
		1.558	39.57	2.354	59.79	4.167	105.84		

FIGURE 1. Plug – Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.03	0.08	.130	3.30	.381	9.68
.002	0.05	.031	0.79	.135	3.43	.75	19.1
.005	0.13	.062	1.57	.142	3.61	1.06	26.9
.008	0.35	.067	1.70	.187	4.75	1.12	18.4
.010	0.20	.094	2.39	.312	7.92	2.0	51
.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 \pm .047			C \pm .016	D \pm .005	J \pm .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 \pm .47	AA dia + .006 - .005	XX dia + .001 - .010	YY dia + .010 - .010	ZZ \pm .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
28	1.685 (42.80)	1.539 (39.09)	1.405 (35.69)	1.693 (43.00)	1.776 (45.11)	SAE-AS29513-128
	1.674 (42.52)	1.531 (38.89)		1.687 (42.85)	1.765 (44.83)	
32	1.935 (49.15)	1.789 (45.44)	1.655 (42.04)	1.943 (49.35)	2.026 (51.46)	SAE-AS29513-132
	1.924 (48.87)	1.781 (45.24)		1.937 (49.20)	2.015 (51.18)	
44	2.685 (68.20)	2.539 (64.49)	2.405 (61.09)	2.693 (68.40)	2.776 (70.51)	SAE-AS29513-144
	2.674 (67.92)	2.531 (64.29)		2.687 (68.25)	2.765 (70.23)	
48	2.935 (74.55)	2.789 (70.84)	2.655 (67.44)	2.943 (74.75)	3.026 (76.86)	SAE-AS29513-148
	2.924 (74.27)	2.781 (70.64)		2.937 (74.60)	3.015 (76.58)	
52	3.185 (80.90)	3.039 (77.19)	2.905 (73.79)	3.193 (81.10)	3.276 (83.21)	SAE-AS29513-151
	3.174 (80.62)	3.031 (76.99)		3.187 (80.95)	3.265 (82.93)	

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-128	9/64	.198 (5.03) .187 (4.75)	.164-32UNC-2B	.143 (3.63) .137 (3.48)
32	.164-32UNC-2B	9/64	.198 (5.03) .187 (4.75)	.164-32UNC-2B	.143 (3.63) .137 (3.48)
44	.250-28UNF-2B	3/16	.286 (7.26) .275 (6.99)	.250-28UNF-2B	.229 (5.82) .223 (5.66)
48	.250-28UNF-2B	3/16	.286 (7.26) .275 (6.99)	.250-28UNF-2B	.229 (5.82) .223 (5.66)
52	.250-28UNF-2B	3/16	.286 (7.26) .275 (6.99)	.250-28UNF-2B	.229 (5.82) .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 position, see figure 2.

FIGURE 1. Plug – Continued.

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

Contact size	"U" diameter (metric equivalent 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 equivalent are given for information only.TABLE II. Accessory interface dimensions. 1/ 2/

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/

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 <u>1/</u>	1.525(38.74)/ 1.435(36.45)			
	-56 <u>1/ 2/</u>	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/

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 (182.6)	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/

Size	Arrangement no.	G Thread Class 2 left hand	K Aprox. 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)	.605 (15.37)	.526 (13.36)
					3.896 (98.96)	.594 (15.09)	.510 (12.95)
52	-02	3.0000-16UN	13.688 (347.68)	3.656 (92.86)	4.167 (105.84)	.605 (15.37)	.526 (13.36)
	-12		17.188 (436.58)				
	-13		18.188 (461.98)				
	-06		13.688 (347.68)				

1/ Dimensions are in inches.2/ Metric equivalent 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.

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

Insert Arrangement	Contacts <u>1/</u>		Cable conductors <u>1/</u>		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 configurations: 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: C (conductive) or N (nonconductive).

Normal keyway position: See figure 1.

Alternate keyway position: See figure 2.

Insert arrangements: See MS90565, MS90567, MS14054, MS14055 and MS14057.

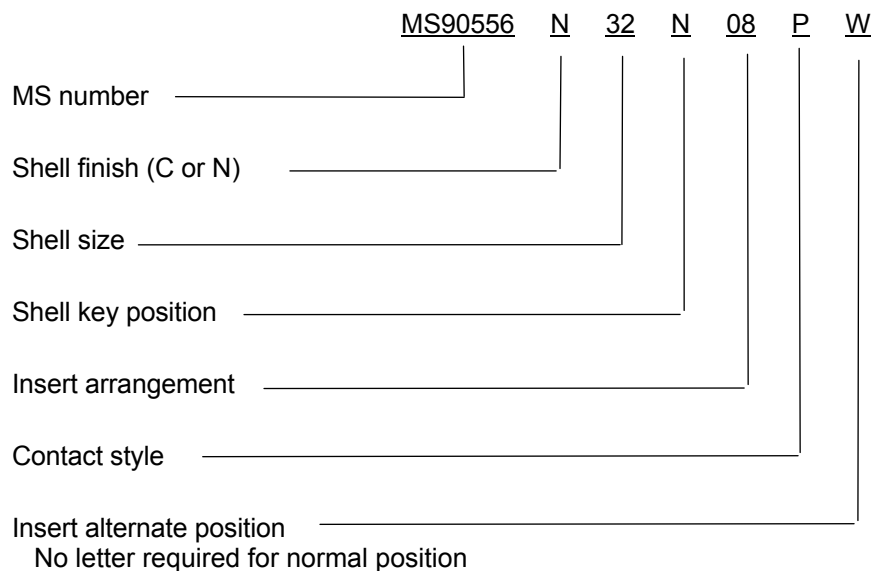
Cover: In accordance with MS90564. Cover shall be attached to cap screw on body.

Crimp bushings: Shall be supplied with the contacts in accordance with SAE-AS33481 and table III herein.

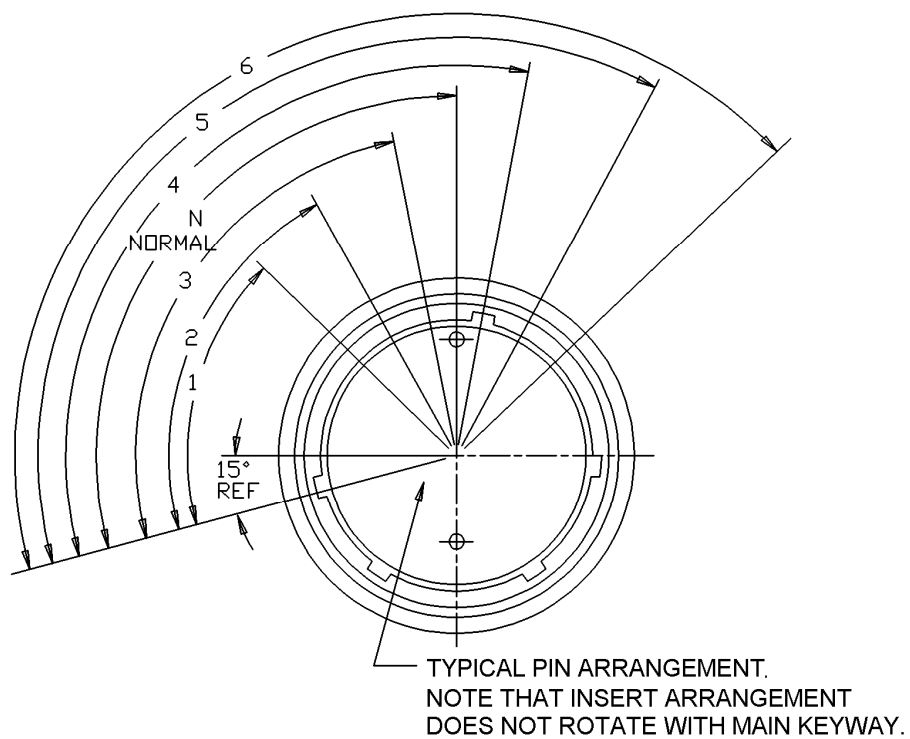
Cable sealing gland: In accordance with MS23747. Shall be supplied with each connector.

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

Part or Identifying Number (PIN) example:



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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 position.

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TABLE IV. Finish C (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.

Changes from previous issue. Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extent of the changes.

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

MS90561
MS90567
MS90565
MS90564
MS90555
MS23747
MS14054
MS14055
MS14057
SAE-AS33481

MS90556H

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 5935–2008-089)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>