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REV.
E

AS7928™/11

FEDERAL SUPPLY CLASS
5940

RATIONALE

LIMITED SCOPE REVISION REQUIRED TO SPECIFY NEW TOOLS AND MINOR EDITORIAL CHANGES AS NEEDED.

NOTICE

THE COMPLETE REQUIREMENTS FOR PROCURING THE PRODUCT DESCRIBED HEREIN SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS7928.

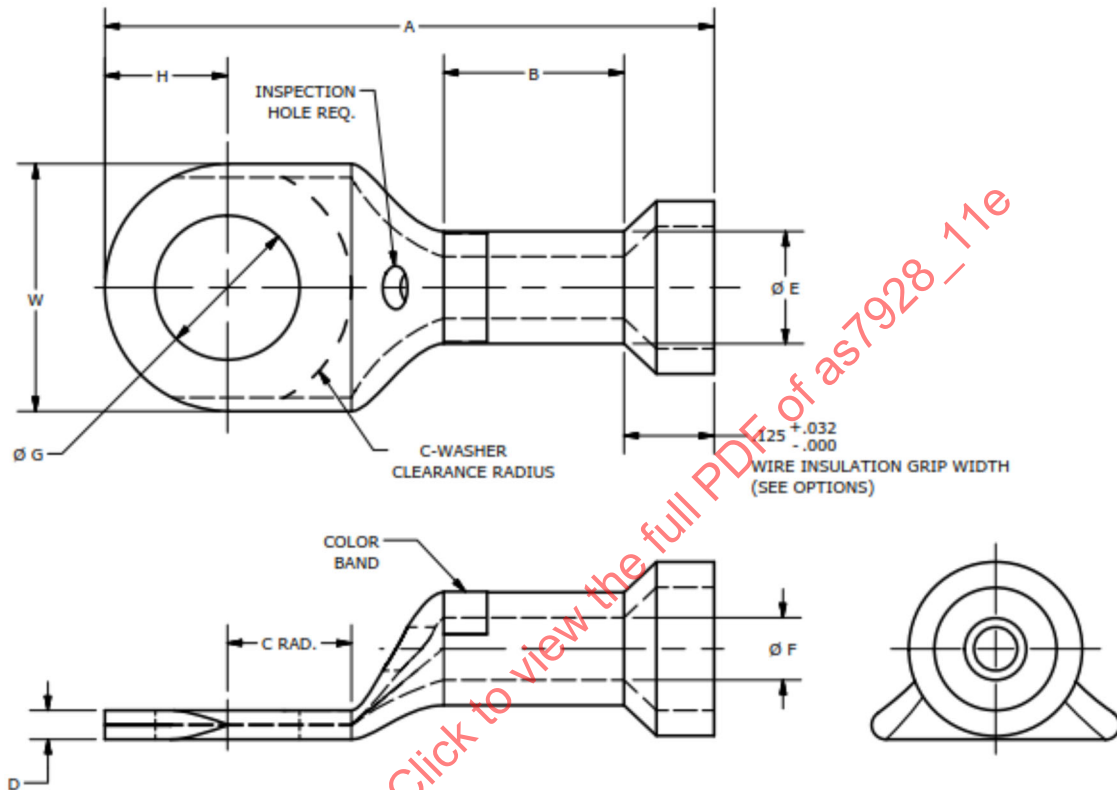
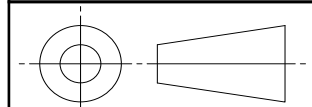


FIGURE 1 - TERMINAL AND WIRE INSULATION GRIPS FOR WIRE SIZE 22 THROUGH 14

For more information on this standard, visit
<https://www.sae.org/standards/content/AS7928/11E>

THIRD ANGLE PROJECTION



CUSTODIAN: AE-8C2

PROCUREMENT SPECIFICATION: AS7928



AEROSPACE STANDARD

TERMINAL, LUG, CRIMP STYLE, COPPER, UNINSULATED,
RING TONGUE, TIN WHISKER RESISTANT, TYPE I,
CLASS I, FOR 150 °C TOTAL CONDUCTOR TEMPERATURE

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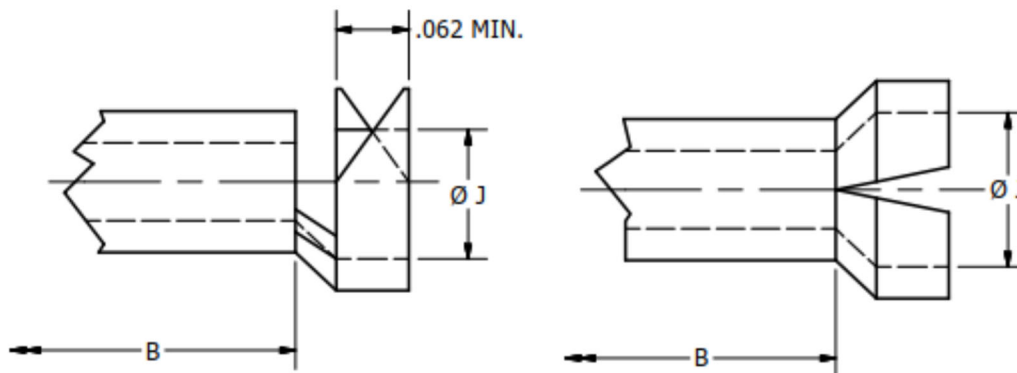
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ISSUED 2007-08 REVISED 2023-09



WIRE INSULATION GRIP OPTIONS

FIGURE 1 (CONTINUED) - TERMINAL AND WIRE INSULATION GRIPS FOR WIRE SIZE 22 THROUGH 14

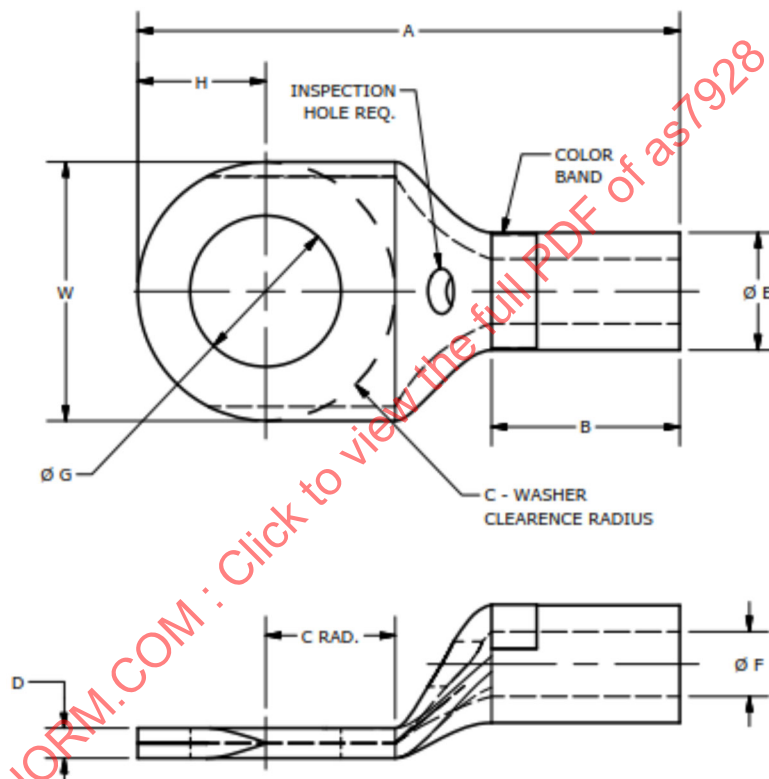


FIGURE 2 - TERMINALS FOR WIRE SIZE 12 THROUGH 0000 (NO WIRE INSULATION GRIP)

TABLE 1 - DIMENSIONS

DASH NO.	WIRE SIZE	STUD SIZE	A MAX	B MIN	C MIN RADIUS	D		E DIA 2/	F DIA 3/	G DIA		J DIA MIN 4/	W & H 1/	
						MAX	MIN			MAX	MIN		MAX	MIN
168	22-18	1/4 (0.250)	1.116	.250	.265	.045	.023	.140 .115	.073 .052	.275	.260	.120	.438	.406
167		2 (0.086)	.890		.115					.098	.090		.260	.178
138		4 (0.112)	.890		.125					.122	.114		.260	.178
101		6 (0.138)	.890		.125					.152	.142		.260	.210
102		10 (0.190)	.968		.172					.203	.193		.320	.305
161		5/16 (0.312)	1.187		.284					.338	.323		.540	.450
125		3/8 (0.375)	1.308		.328					.400	.385		.540	.520
162		1/2 (0.500)	1.530		.378					.525	.510		.733	.703
169	16-14	1/4 (0.250)	1.135	.250	.265	.053	.029	.162 .145	.095 .081	.275	.260	.153	.438	.406
139		4 (0.112)	.947		.125					.122	.114		.266	.234
103		6 (0.138)	.955		.172					.152	.142		.327	.297
126		6 (0.138)	.947		.125					.152	.142		.266	.234
104		10 (0.190)	.955		.172					.203	.193		.327	.234
163		5/16 (0.312)	1.249		.284					.338	.323		.540	.450
127		3/8 (0.375)	1.290		.328					.400	.385		.540	.520
164		1/2 (0.500)	1.593		.378					.525	.510		.733	.703
170	12-10	1/4 (0.250)	1.093	.250	.265	.080	.037	.230 .210	.139 .129	.275	.260	N/A	.484	.453
165		6 (0.138)	.955		.202					.152	.142		.317	.290
105		10 (0.190)	.969		.172					.203	.193		.391	.365
106		5/16 (0.312)	1.156		.296					.338	.323		.547	.485
128		3/8 (0.375)	1.172		.328					.400	.385		.598	.536
166		1/2 (0.500)	1.718		.378					.525	.510		.733	.703
140	8	8 (0.164)	1.150	.315	.234	.084	.038	.272 .260	.186 .176	.178	.168	N/A	.429	.386
107		10 (0.190)	1.150		.234					.203	.193		.429	.386
141		1/4 (0.250)	1.219		.265					.275	.260		.478	.435
108		5/16 (0.312)	1.297		.296					.338	.323		.590	.547
129		3/8 (0.375)	1.297		.328					.400	.385		.590	.547
142		1/2 (0.500)	1.545		.440					.525	.510		.833	.680
130	6	10 (0.190)	1.312	.375	.238	.084	.043	.316 .295	.232 .222	.203	.193	N/A	.503	.460
109		1/4 (0.250)	1.312		.265					.275	.260		.503	.460



AEROSPACE STANDARD

TERMINAL, LUG, CRIMP STYLE, COPPER, UNINSULATED,
RING TONGUE, TIN WHISKER RESISTANT, TYPE I,
CLASS I, FOR 150 °C TOTAL CONDUCTOR TEMPERATURE

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TABLE 1 - DIMENSIONS (CONTINUED)

DASH NO.	WIRE SIZE	STUD SIZE	A MAX	B MIN	C MIN RADIUS	D		E DIA 2/	F DIA 3/	G DIA		J DIA MIN 4/	W & H 1/	
						MAX	MIN			MAX	MIN		MAX	MIN
131	6	5/16 (0.312)	1.437	.375	.305	.084	.043	.316 .295	.232 .222	.338	.323	N/A	.623	.580
110		3/8 (0.375)	1.437		.328					.400	.385		.623	.580
143		1/2 (0.500)	1.676		.440					.525	.510		.833	.700
144	4	10 (0.190)	1.400	.437	.276	.096	.047	.380 .365	.290 .280	.203	.193	N/A	.628	.480
111		1/4 (0.250)	1.400		.276					.275	.260			
132		5/16 (0.312)	1.489		.308					.338	.323		.648	.605
112		3/8 (0.375)	1.489		.328					.400	.385			
145		1/2 (0.500)	1.721		.440					.525	.510		.833	.710
146	2	10 (0.190)	1.732	.505	.343	.109	.054	.473 .450	.365 .355	.203	.193	N/A	.711	.668
113		1/4 (0.250)								.275	.260		.711	.668
147		5/16 (0.312)								.338	.323		.711	.668
114		3/8 (0.375)								.400	.385		.711	.668
148		7/16 (0.437)	1.895		.453					.463	.448		.804	.740
133		1/2 (0.500)	1.895		.453					.525	.510		.804	.740
115	1	1/4 (0.250)	1.845	.565	.383	.125	.070	.527 .505	.398 .388	.275	.260	N/A	.783	.740
149		5/16 (0.312)			.383					.338	.323		.783	.740
116		3/8 (0.375)			.383					.400	.385		.783	.740
150		7/16 (0.437)	1.980		.453					.463	.448		.887	.740
134		1/2 (0.500)	1.980		.453					.525	.510		.887	.740
117	0	1/4 (0.250)	2.045	.63	.418	.125	.070	.578 .558	.458 .438	.275	.260	N/A	.853	.810
151		5/16 (0.312)			.418					.338	.323		.853	.810
118		3/8 (0.375)			.418					.400	.385		.853	.810
152		7/16 (0.437)	2.092		.453					.463	.448		.903	.860
135		1/2 (0.500)	2.092		.453					.525	.510		.903	.860
153	00	1/4 (0.250)	2.320	.70	.473	.129	.075	.640 .620	.520 .500	.275	.260	N/A	.956	.913
119		5/16 (0.312)								.338	.323			
120		3/8 (0.375)								.400	.385			
154		7/16 (0.437)								.463	.448			
136		1/2 (0.500)								.525	.510			



AEROSPACE STANDARD

TERMINAL, LUG, CRIMP STYLE, COPPER, UNINSULATED, RING TONGUE, TIN WHISKER RESISTANT, TYPE I, CLASS I, FOR 150 °C TOTAL CONDUCTOR TEMPERATURE

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TABLE 1 - DIMENSIONS (CONTINUED)

DASH NO.	WIRE SIZE	STUD SIZE	A MAX	B MIN	C MIN RADIUS	D		E DIA 2/	F DIA 2/	G DIA		J DIA MIN 2/	W & H 1/	
						MAX	MIN			MAX	MIN		MAX	MIN
155	000	5/16 (0.312)	2.455	.718	.513	.140	.085	.714 .690	.577 .557	.338	.323	N/A	1.053	1.010
121		3/8 (0.375)								.400	.385			
156		7/16 (0.437)								.463	.448			
122		1/2 (0.500)								.525	.510			
157	0000	5/16 (0.312)	2.755	.734	.560	150	.095	.784 .760	.645 .622	.338	.323	N/A	1.148	1.095
123		3/8 (0.375)								.400	.385			
158		7/16 (0.437)								.463	.448			
124		1/2 (0.500)								.525	.510			
159		5/8 (0.625)								.666	.651			
160		3/4 (0.750)	2.955		.765					.785	.770		1.268	1.200
137		7/8 (0.875)	2.971		.765					.910	.895		1.268	1.200

1/ H MAX AND MIN DIMENSIONS SHALL BE ONE-HALF OF THE W MAX AND MIN DIMENSIONS, RESPECTIVELY.

2/ ØE IS THE OUTSIDE INSULATED DIAMETER OF THE CRIMP ZONE DEFINED BY LENGTH DIMENSION B.

3/ ØF IS THE INSIDE COPPER BARREL DIAMETER OF THE CRIMP ZONE DEFINED BY LENGTH DIMENSION B.

4/ ØJ IS THE MINIMUM INSIDE DIAMETER OF THE INSULATION GRIP FOR THE .125 INCH LENGTH DIMENSION. ØJ MINIMUM IS SLIGHTLY LARGER ØE MINIMUM.

REQUIREMENTS: ALL REQUIREMENTS SHALL CONSIST OF THIS DOCUMENT AND THE LATEST ISSUE OF AS7928.

- CONFIGURATIONS (SEE FIGURES 1 AND 2 AND TABLE 1): DIMENSIONS ARE IN INCHES. CONTOUR OF THE TERMINAL MAY VARY FROM THAT SHOWN TO SUIT INDIVIDUAL MANUFACTURER'S DESIGNS PROVIDED DIMENSIONS ARE MAINTAINED. AVERAGE DIAMETER OF E AND F SHALL BE WITHIN REQUIRED DIMENSIONS AND THE MAX AND MIN DIMENSION VALUES DUE TO OVALIZATION SHALL BE WITHIN 3% OF THE DIMENSION REQUIREMENT. A SPLIT BARREL CONSTRUCTION SHALL BE PERMANENTLY SEALED AND SHALL NOT OPEN AFTER CRIMPING.
- BASE MATERIAL: COPPER (REFER TO AS7928 FOR MATERIAL DETAILS) OR COPPER ALLOY. MATERIAL SHALL HAVE ADEQUATE ELECTRICAL CONDUCTIVITY AND SHALL BE SUFFICIENTLY STRONG TO RESIST CRACKING AFTER FORMING AND CRIMPING. COPPER MAY BE GILDING METAL, 95% COPPER AND 5% ZINC.
- FINISH (WHISKER RESISTANT): TIN PLATED, GEIA-STD-0005-2, ALLOYED WITH 3% LEAD BY WEIGHT. PLATING THICKNESS SHALL BE .0002 INCH MINIMUM (SEE APPLICATION NOTE FOR MORE DETAILS).
- MARKING: THE TERMINAL SHALL HAVE THE DASH NUMBER ON THE PART OR AN INK MARKING. THE INK MARKING SHALL BE A BAND USING BLUE INK LOCATED CIRCUMFERENTIALLY ON THE BARREL NEAR THE END WITH THE INSPECTION HOLE. THE BAND IS TO BE .06 WIDE MINIMUM AND SHALL WRAP AROUND THE BARREL A MINIMUM OF 150°. THE BLUE COLOR WILL BE MAINTAINED AFTER ALL HEAT TESTS. SLIGHT DISCOLORATION OF THE BAND WILL NOT BE CAUSE FOR REJECTION.
- CRIMPING TOOLS: CRIMPING TOOLS SHALL BE AS SPECIFIED TABLE 2.

TABLE 2 - TERMINAL CRIMPING TOOLS (WIRE BARREL SIZES 22 THROUGH 10)

TERMINAL SIZE (SEE TABLE 1)	CRIMP TOOL	WIRE CONDUCTOR CRIMP DIE	WIRE INSULATION GRIP CRIMP DIE	CRIMP TOOL TYPE
22-18	M22520/38-01	CAVITY A (RED)	CAVITY E (WHITE) <u>1/</u>	SELF CONTAINED, HAND TOOL WITH FIXED JAWS INDENT AND CIRCULAR CAVITIES NON-REMOVABLE
16-14		CAVITY B (BLUE)	CAVITY D (GREEN) <u>1/</u>	
12-10		CAVITY C (YELLOW)	N/A	

1/ ONLY FOR FORMING WIRE INSULATION GRIP TABS, WHEN PRESENT.

M22520/38-01 CAUTION

CRIMPING ON THE SEAM OF THE TERMINAL CRIMP BARREL MAY CAUSE THE BARREL TO SPLIT IMPACTING THE AS7928 TERMINAL REQUIREMENTS. FOR CRIMPING AT ANY LOCATION ON THE BARREL WITHOUT CONCERN FOR PERFORMANCE USE M22520/38-02

TABLE 2A - TERMINAL CRIMPING TOOLS (WIRE BARREL SIZES 22 THROUGH 10)

TERMINAL SIZE (SEE TABLE 1)	CRIMP TOOL	WIRE CONDUCTOR CRIMP DIE	WIRE INSULATION GRIP CRIMP DIE	CRIMP TOOL TYPE
22-18	M22520/38-02	CAVITY A (RED)	N/A	SELF CONTAINED, HAND TOOL WITH FIXED JAWS INDENT AND CIRCULAR CAVITIES NON-REMOVABLE
16-14		CAVITY B (BLUE)	N/A	
12-10		CAVITY C (YELLOW)	N/A	
22-18	M22520/38-03	N/A	CAVITY E (WHITE) <u>1/</u>	
16-14			CAVITY D (GREEN) <u>1/</u>	

1/ ONLY FOR FORMING WIRE INSULATION GRIP TABS, WHEN PRESENT.

TABLE 2B - TERMINAL CRIMPING TOOLS (WIRE BARREL SIZES 8 THROUGH 0000)

M7928/11 TERMINAL SIZE (SEE TABLE 1)	CRIMP TOOLS	DIES SETS <u>3/</u>
8	MS25441-01 <u>1/</u> M5259/3-01 <u>2/</u>	MS90485-8
6		MS90485-6
4		MS90485-4
2		MS90485-2
1		MS90485-1
0		MS90485-01
00		MS90485-02
000		MS90485-03
0000		MS90485-04
8	M5259/4-01 <u>1/</u> M5259/3-01 <u>2/</u> M5259/5-01 <u>2/</u>	M5259/7-001
6		M5259/7-002
4		M5259/7-003
2		M5259/7-004
1		M5259/7-005
0		M5259/7-006
00		M5259/7-007
8	M5259/4-01 <u>1/</u> M5259/3-01 <u>2/</u> M5259/5-01 <u>2/</u>	M5259/7-010
6		M5259/7-011
4		M5259/7-012
2		M5259/7-013
0		M5259/7-014
00		M5259/7-015

1/ REFER TO AS5259/1 OR /4 FOR CRIMP TOOL DESCRIPTION. TOOLS REQUIRES AS5259/3 HYDRAULIC HOSE AND PUMP.

2/ REFER TO AS5259/3 AND /5 FOR CRIMP TOOL DESCRIPTION. TOOL IS A SELF-CONTAINED HAND PUMP HYDRAULIC TOOL.

3/ SEE AS5259/7 FOR DIE DETAILS. MS90485 AND M5259/7-001 THROUGH -007 DIES PROVIDES HEX CRIMPS AND MS5259/7-010 THROUGH -015 PROVIDES INDENT CRIMPS.



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