FEDERAL SUPPLY CLASS
6150

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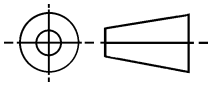

PREPARED BY SUBCOMMITTEE AE-8C2

SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

CONNECTORS AND ASSEMBLIES, ELECTRICAL, AIRCRAFT GROUNDING: TYPE IV JUMPER CABLE ASSEMBLY, LEAD, ELECTRICAL

AS83413/8
SHEET 1 OF 8

REV. A

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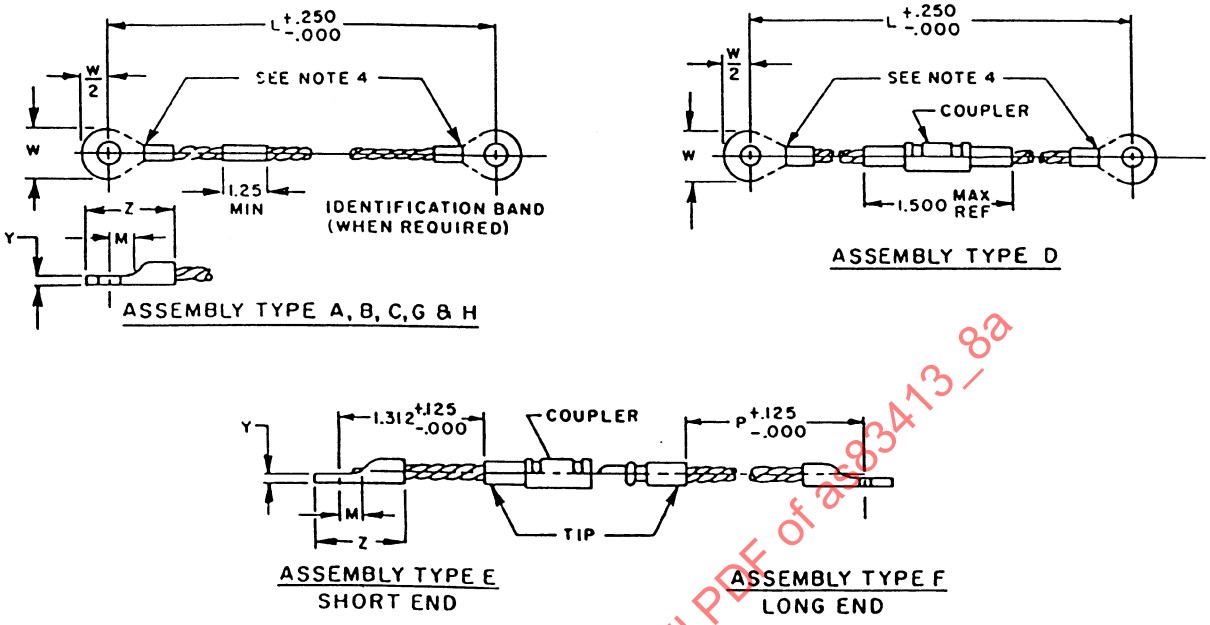

FIGURE 1. JUMPER CABLE ASSEMBLY.

TABLE I. JUMPER ASSEMBLY TYPES AND CHARACTERISTICS.

Jumper assembly type	Construction type	Wire and terminal material	Wire size (see table II)	Available lug sizes (see table III)	Available cable length, see "L" or "P" dimensions on figure 1	Lightening tested	Fuel compatible 1/	Method of attaching terminals	Color of ID band	Supersedes
A	Bonding	Copper	12	A,B,C,D,E	02-999	No	No	Crimp	No band	MS25083-2
B	Current return	Copper	8	D,E	02-999	No	No	Crimp	No band	MS25083-4
C 2/	Bonding	Aluminum	10	A,B,C,D,E (aluminum only)	04-999	No	Yes	Brazed 4/	Clear	MS25083-1 and -7
D 3/	Quick disconnect	Copper	12	A,B	03-999	No	No	Crimp	No band	MS25083-3
E 3/	Short end of quick disconnect	Copper	12	A,B	Fixed length	No	No	Crimp	No band	MS25083-3S
F 3/	Long end of quick disconnect	Copper	12	A,B	02-999	No	No	Crimp	No band	MS25083-3P
G	Bonding	Copper	12	A,B,C,D,E	04-999	Yes	No	Crimp	Yellow	MS25083-5
H	Current return	Copper	8	D,E	04-999	Yes	No	Crimp	Yellow	MS25083-6

1/ Only fuel compatible jumper assemblies may be used within fuel tank and cells.
2/ Do not use outside fuel tanks and cells.
3/ Inactive for Air Force Airborne use after 9 December 1963.
4/ Dip braze terminals per MIL-B-7883. A coating is not required on interior strands of the cable, chemical conversion coating per MIL-C-5541 class 3 shall be applied after brazing. Inert gas welding using an aluminum based solder or other means of termination may be used only if approved by the qualifying activity. Aluminum terminals may be crimped to the cable to facilitate dip brazing. Overcrimping shall be avoided.

TABLE II. WIRE CHARACTERISTICS BY JUMPER ASSEMBLY TYPE.

Jumper assembly type	Material	Stranding No. x AWG	Wire size	Assembly 2/ resistance (max-ohms)	Tensile strength (min-lb)	Copper only	
						Crimping tools 3/	Crimping dies
A, G	Copper	(7 x 37) x 36	12	.00016xL +.00034 Ω	110	MIL-C-22520/5-01 1/ or MIL-C-22520/24-01	MIL-C-22520/5-100 ---
B, H	Copper	(7 x 95) x 36	8	.00006xL +.00016 Ω	225	MS25441	MS23002 1/ MS90485
C	Aluminum	37 x 0.0167 Inch	10	.00042xL +.00110 Ω	75	Not applicable	Not applicable
D	Copper	(7 x 37) x 36	12	.00016xL +.00034 Ω	110	MIL-C-22520/5-01 MIL-C-22520/24-01	MIL-C-22520/5-100 ---
E	Copper	(7 x 37) x 36	12	.00057	110	MIL-C-22520/5-01 MIL-C-22520/24-01	MIL-C-22520/5-100 ---
F	Copper	(7 x 37) x 36	12	.00016xL +.00034 Ω	110	MIL-C-22520/5-01 MIL-C-22520/24-01	MIL-C-22520/5-100 ----

1/ Application: MIL-C-22520/5-01, /5-100 and MS23002 for use on insulated terminals. MIL-C-22520/24-01 and MS90485 for use on uninsulated terminals.

2/ Where L = length of the cable assembly in inches. Example: For a 24 inch type A assembly, Assembly Resistance = .00016 ohm/inch x 24 inches + .00034Ω = .00418 ohms (max).

3/ Alternate crimping tools which use the specified dies of this table or qualified class II copper terminal lugs from MIL-T-7928 (crimped with the tools and dies used to obtain the class II terminal lug approval), may be used to facilitate high volume production of copper jumpers. However, either of these options must be pre-approved by the qualifying activity before qualification tests are initiated on samples produced using these termination options.

TABLE III. AVAILABLE LUG SIZES.

Code letter lug size designation	For stud size	Aluminum terminals 1/ (Type C assembly only)								Copper terminals (All types except type C)	
		Stud hole I.D.		M Min	W		Y		Z Max	MS25036 Insulated	MS20659 Uninsulated
		Max	Min		Max	Min	Max	Min			
A	.112 or .137	.152	.142	.218	.406	.313	.083	.037	1.172	-111	-165
B	.164 or .190	.203	.193	.250						-112	-105
C	.24	.285	.260	.281	.540	.450			1.300	-157	----
D	.3125	.343	.320	.329	.741	.531	.090	.038	1.390	1/ -113, 2/ -117	1/ -106, 2/ -108
E	.375	.410	.385	.343					1.626	1/ -114, 2/ -118	1/ -128, 2/ -129

1/ Size #12 - #10 AWG wire only.
2/ Size #8 AWG wire only.

Inch	mm
.005	0.127
.0167	0.42
.031	.79
.037	.94
.038	.97
.083	2.11
.090	2.29
.112	2.85
.125	3.18
.137	3.50
.142	3.61
.152	3.86
.164	4.20
.190	4.85

Inch	mm
.193	4.90
.203	5.16
.218	5.54
.24	6.1
.250	6.35
.260	6.60
.281	7.14
.285	7.24
.3125	7.94
.313	8.0
.320	8.13
.329	8.36
.343	8.71
.375	9.53

Inch	mm
.385	9.78
.406	10.31
.410	10.41
.450	11.93
.531	13.49
.540	13.72
.741	18.82
.750	19.05
1.172	29.77
1.300	33.02
1.312	33.32
1.390	35.31
1.500	38.10
1.626	41.30