SAE Aerospace
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AEROSPACE STANDARD

SAE AS6852

REV. A

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Superseding AS6852

Splice, Conductor, Electric, Disconnect

CANCELLATION NOTICE

This document has been declared cancelled as of August 2003. By this action, this document will remain listed in the Numerical Section of the Aerospace Standards Index.

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NOTICE

This document has been taken directly from U.S. Military Specification MIL-S-6852B and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE technical standards.

The original Military Specification was adopted as an SAE standard under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of government specifications and standards. TSB rules provide for (a) the publication of portions of unrevised government specifications and standards without consensus voting at the SAE Committee level, (b) the use of the existing government specification or standard format, and (c) the exclusion of any qualified product list (QPL) sections.

1. SCOPE:

1.1 Splices furnished in accordance with this specification shall be one type, disconnect splice assembly, of the sizes shown in Figure 1 as specified (see 6.2).

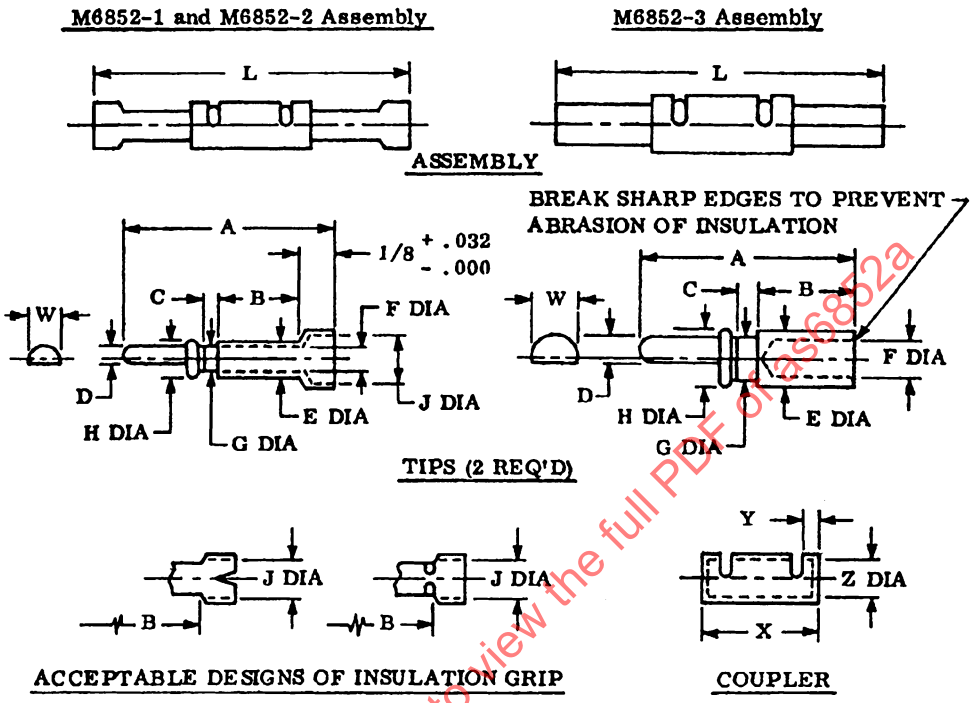
2. APPLICABLE DOCUMENTS:

2.1 The following documents of the issue in effect on date of invitation for bids or request for proposal, form a part of this specification to the extent specified herein.

SPECIFICATIONS

Federal

QQ-C-533	Copper-Beryllium Alloy Strip
QQ-S-365	Silver Plating, Electrodeposited, General Requirements for
PPP-B-636	Box, Fiberboard



ASSEMBLY AND COUPLER DIMENSIONS

ASSEMBLY PART NO.	L MAX	X ±0.005	Y ±0.004	Z ±0.001
M6852-1	1.500	0.500	0.085	0.109
M6852-2	1.500	0.500	0.085	0.109
M6852-3	1.500	0.625	0.099	0.180

TIP DIMENSIONS

ASSEMBLY PART NO.	WIRE SIZE	A MAX	B ±0.010	C ±0.004	D ±0.003	E ±0.003	F	G ±0.003	H ±0.003	J ±0.005	W ±0.003
M6852-1	22-20-18	0.812	0.312	0.095	0.058	0.125	0.062 0.056	0.107	0.116	0.115	0.103
M6852-2	16-14	0.812	0.312	0.095	0.058	0.140	0.090 0.081	0.107	0.116	0.150	0.103
M6852-3	12-10	0.875	0.406	0.114	0.093	0.205	0.135 0.129	0.175	0.188	--	0.178

DIMENSIONS IN INCHES

Figure 1. Assembly and components of the electrical disconnect splice

2.1 (Continued):

Military

MIL-P-116	Preservation, Methods of
MIL-W-5086	Wire, Electric, Hook-up and Interconnecting, Poly-Vinyl Chloride-Insulated, Copper or Copper Alloy Conductor
MIL-C-45662	Calibration System Requirements

STANDARDS

Military

MIL-STD-105	Sampling Procedures and Tables for Inspection by Attributes
MIL-STD-129	Marking for Shipment and Storage
MIL-STD-202	Test Methods for Electronic and Electrical Component Parts
MS17776	Crimping Tool - Electric Wire Terminal, Hand, 22-10 Capacity
MS20659	Terminal, Lug, Crimp Style, Copper, Uninsulated, Ring Tongue, Type I, Class 1

(Copies of specifications, standards, drawings, and publications required by suppliers in connection with specific procurement functions should be obtained from the procuring activity or as directed by the contracting officer.)

2.2 Other publications:

The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issues in effect on date of invitation for bids, or request for proposal, shall apply.

American Society for Testing and Materials

ASTM B 140-68	Copper-Zinc-Lead (Leaded Red Brass or Hardware Bronze) Rod, Bars, and Shapes

(Application for copies should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, Pennsylvania 19103.)

Uniform Classification Committee

Uniform Freight Classification

(Application for copies should be addressed to the Uniform Classification Committee, Room 202, Union Station, 516 West Jackson Boulevard, Chicago, Illinois 60606.)

3. REQUIREMENTS:

3.1 First article:

The electrical disconnect splice furnished under this specification shall be a product which has been inspected, and passed the first article inspections specified herein (see 4.2 and 4.3).

3.2 Disconnect splice assembly:

The disconnect splice assembly shall consist of two tips which are identical, and a coupler, as shown in Figure 1.

3.3 Materials:

Materials and finish shall be as specified herein. Other types of materials possessing superior characteristics may be used which will enable the disconnect splice assembly to meet the specified performance requirements when substantiated with acceptable test data. Acceptance or approval of a constituent material shall not be construed as a guarantee of the acceptance of the finished product.

3.4 Design and construction:

3.4.1 Dimensions: The dimensions of the disconnect splice assembly, tips and coupler shall be as shown in Figure 1.

3.4.2 Tips: Tips shall be of the solderless type suitable for installation with an MS17776 crimping tool.

3.4.2.1 Insulation grip: Tips for assemblies M6852-1 and M6852-2 shall be provided with an insulation grip as shown in Figure 1.

3.4.2.2 Material: Tips shall be fabricated from copper or copper alloy (leaded commercial bronze) in accordance with ASTM B 140-68, copper alloy No. 314.

3.4.3 Couplers: Couplers shall be suitable for connecting and holding two identical tips.

3.4.3.1 Material: Couplers shall be fabricated from beryllium copper, heat-treated to spring temper in accordance with QQ-C-533.

3.5 Interchangeability:

All M6852 parts manufactured under this specification shall be equal to and interchangeable with units referenced in Figure 1.

3.6 Finish:

The components of the disconnect splice assembly shall be silver-plated (and burnished) .0003 to .0005 inch thickness range over a suitable underplating in accordance with QQ-S-365, Type III, Grade B.

3.7 Performance:

3.7.1 Separation force: The force required to separate the disconnect splice shall be in accordance with Table I.

TABLE I
PERFORMANCE REQUIREMENTS

Assembly part number	MIL-W-5086 wire size	Wire test rating amperes	Separation force pounds		Max initial millivolt drop		Max millivolt drop after 100 separations		Max millivolt drop after corrosion	
			Max	Min	"A"	"B"	"A"	"B"	"A"	"B"
M6852-1	22	9	15	3	3	10	3	10	4	12
	18	16			4	10	4	10	5	12
M6852-2	16	22	15	3	5	15	6	16	8	18
	14	32			7	15	8	16	8	18
M6852-3	12	41	28	5	5	12	7	14	7	16
	10	55			7	12	8	14	8	16

3.7.2 Millivolt drop: Voltage drop readings at rated test current shall not exceed specified values in Table I.

3.7.3 Endurance: The disconnect splice shall satisfactorily pass the Endurance test specified in 4.6.4.

3.7.4 Corrosion resistance: The disconnect splice shall satisfactorily pass the Corrosion resistance test specified in 4.6.5.

3.8 Identification of product:

3.8.1 Coupler: Each coupler for assembly part numbers M6852-1 and M6852-2 shall have permanently marked on its surface M6852-1/-2 and limiting wire range 22-14. Each coupler for assembly part number M6852-3 shall have permanently marked on its surface M6852-3 and limiting wire range 12-10. Couplers shall bear the manufacturer's name or trade-mark if space permits.

3.8.2 Tips: Each tip shall have permanently marked on its surface the M6852 assembly part number and limiting wire range. Tips shall bear the manufacturer's name or trade-mark if space permits.

3.9 Workmanship:

Splices shall be uniform in quality and free from all defects which may affect their serviceability and appearance.

4. QUALITY ASSURANCE PROVISIONS:

4.1 Responsibility for inspection:

Unless otherwise specified in the contract or purchase order, the supplier is responsible for the performance of all inspection requirements as specified herein. Except as otherwise specified in the contract or order, the supplier may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 Test equipment and inspection facilities: The supplier shall establish and maintain a calibration system in accordance with MIL-C-45662.

4.2 Classification of inspection:

Inspection of the electrical disconnect splice shall be classified as follows:

(a) First article inspection. First article inspection shall be performed on products submitted for approval after the award of a contract, but prior to regular production (see 4.3).

(b) Quality conformance inspection. Quality conformance inspection shall be performed on products which have been submitted for acceptance under contract (see 4.4).

4.3 First article inspection:

The first article inspection shall be made on electrical disconnect splice assemblies representative of the production splices to be supplied under the contract or order. The first article inspection of the electrical disconnect splice assemblies shall consist of the examinations and tests specified in Table II.

TABLE II
DISTRIBUTION OF FIRST ARTICLE TEST SAMPLES

First article tests	M6852-1			M6852-2			M6852-3		
	No. 22 wire	No. 18 wire	Total assembly	No. 16 wire	No. 14 wire	Total assembly	No. 12 wire	No. 10 wire	Total assembly
Examination of product Initial Mv drop Separation force			1/			1/			1/
Endurance	5	5	10	5	5	10	5	5	10
Corrosion resistance	5	5	10	5	5	10	5	5	10
Inter-changeability test samples			25			25			25
Supplementary tests if necessary			5			5			5
Total samples required for first article inspection			50			50			50

1/ All first article samples to be subjected to these tests.

4.3.1 First article inspection data: The contractor shall submit all data collected in conducting these inspections to the contracting officer for review and approval.

4.3.2 First article approval: Approval of the first article samples shall be by the procuring activity upon satisfactory completion of all tests. No production disconnect splice assemblies shall be delivered prior to the approval of the first article samples.

4.4 Quality conformance inspection:

The quality conformance inspection shall consist of the following tests:

(a) Sampling tests (see 4.4.1)
(b) Special tests (see 4.4.2)
(c) Inspection of Preparation for delivery (see 4.7)

The supplier shall furnish test reports, in duplicate, showing quantitative results for all tests required by this specification, and signed by an authorized representative of the supplier or laboratory, as applicable.

4.4.1 Sampling tests: Sampling shall be in accordance with MIL-STD-105, Acceptable Quality Level (AQL) of 1.0 percent defective using the multiple sampling plans for normal inspection. The Inspection Level shall be S-2. The samples shall be subjected to the following tests:

(a) Examination of product (4.6.1)
(b) Millivolt drop "A" (see Figure 2) across assembled disconnect splice at rated currents (4.6.2)
(c) Separation force (4.6.3)

4.4.2 Special tests: The Government inspector shall require the manufacturer to select at random five samples as he deems advisable, but not more often than every 5,000 assemblies, and shall subject these samples to the following tests:

(a) Millivolt drop "A" (see Figure 2) across assembled disconnect splice at rated current
(b) Millivolt drop "A" (see Figure 2) across assembled disconnect splice after 100 separations

4.5 Test conditions:

4.5.1 Standard test conditions: Unless otherwise specified herein, all inspections shall be made at ambient temperature, pressure, and humidity, as specified in the General Requirements of MIL-STD-202.

4.5.2 Preparation of samples: To facilitate determination of disconnect splice millivolt drops, sufficient test jumpers as per Figure 2 shall be prepared. Standard MIL-W-5086 aircraft wire from the same lot and MS20659 terminals of the same construction and manufacture shall be used.

4.6 Test methods:

4.6.1 Examination of product: Each component submitted for acceptance under contract shall be carefully examined to determine conformance to this specification with respect to material, workmanship, design and construction, and dimensions.

4.6.2 Millivolt drop: Voltage drop readings shall be taken at rated test current as outlined in Table I after test jumper has been subjected to rated current flow for 2 hours. Voltage drops "A" and "B" initially, after 100 separations, and after corrosion tests shall not exceed maximum values specified in Table I. Precision laboratory instruments and techniques shall be used in measuring millivolt drops.

4.6.2.1 Points of measurement:

4.6.2.1.1 Voltage drop "A": Drop "A" shall be measured from points on the tip barrels as close as practicable to the coupler without touching the coupler as illustrated on Figure 2.

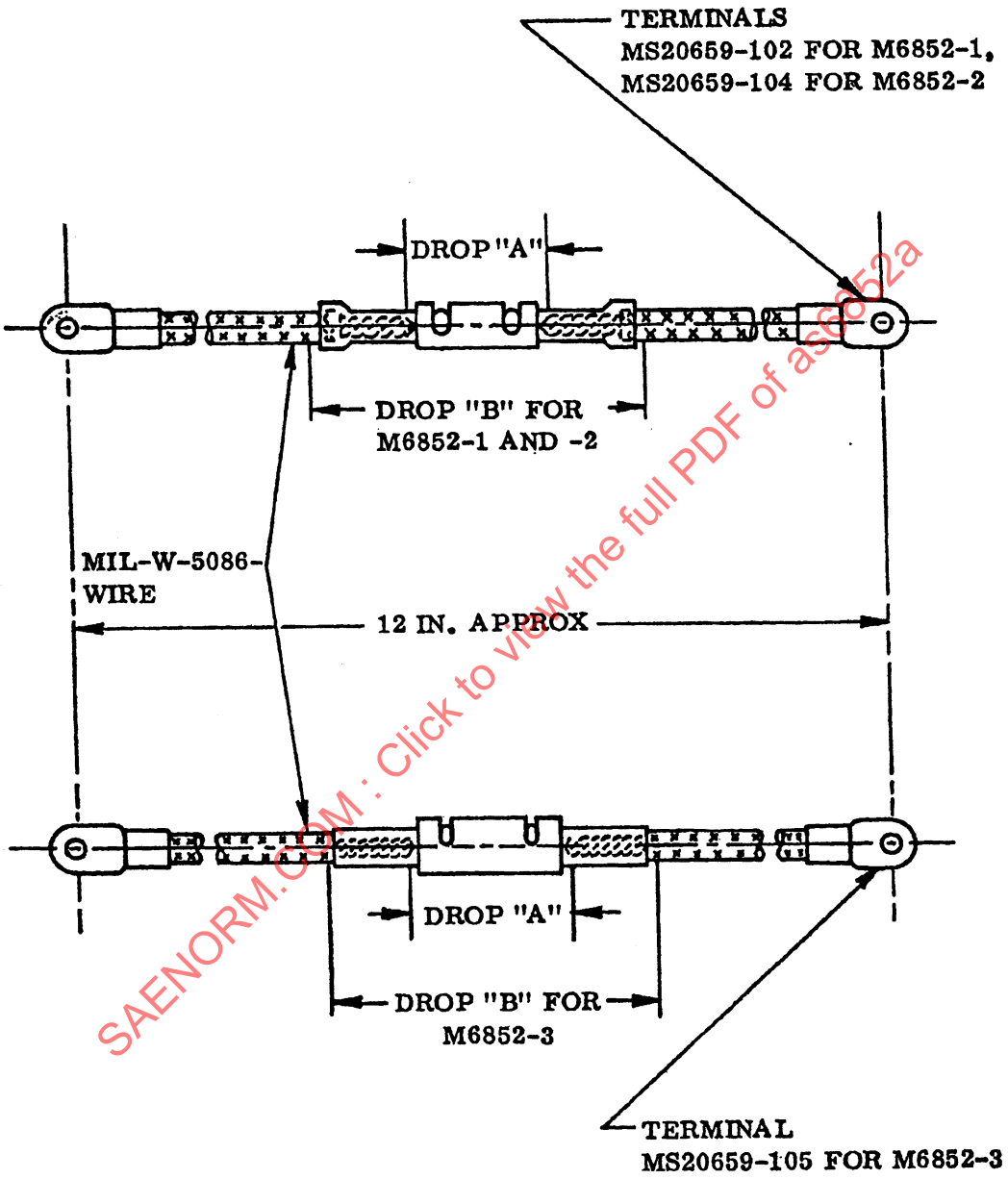


Figure 2. Suggested test jumper