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Seven-Conductor Electrical Connector for Truck-Trailer Jumper Cable—SAE J560b

SAE Standard
Last Revised September 1974

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SEVEN-CONDUCTOR ELECTRICAL CONNECTOR FOR TRUCK-TRAILER JUMPER CABLE—SAE J560b

SAE Standard

Report of Electrical Equipment Committee approved January 1951 and last revised September 1974.

1. Scope—This SAE Standard covers the dimensions and minimum design requirements of the jumper cable plug and receptacle to achieve interchangeability with electrical connectors of different manufacture. These connectors are used with the cable described in SAE J1067. (Refer to SAE J702 for mounting location.)

2. Definitions

2.1 The receptacle consists of the connector socket, its housing, and a cover which latches the male plug in place. The socket contains the male contacts. See Fig. 1.

2.2 The cable plug, cylindrical in shape and having an index key for ease of assembly, is attached to the end of the electric jumper cable. The cable plug houses the female contacts. See Fig. 1.

2.3 The wire color code refers to the color of insulation on the conductors.

3. Wiring Circuits—The function and color code of each circuit is shown in Table 1. The location of each circuit is shown in Figs. 2 and 3.

4. General Requirements

4.1 All electric current-carrying parts of the receptacle socket and cable plug shall be made of a copper alloy. Insulating materials shall not fracture during mating and removal of the plug from the receptacle at −40°F (−40°C) and must not deform at 180°F (82.2°C).

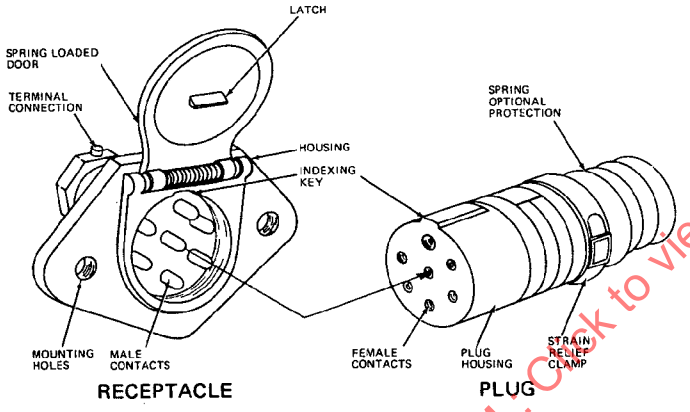

FIG. 1—SEVEN-CONDUCTOR ELECTRICAL CONNECTOR

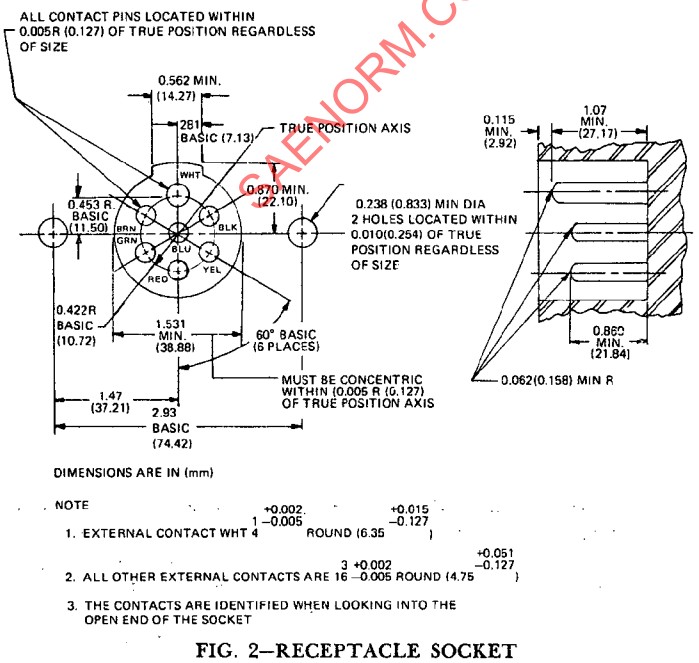

FIG. 2—RECEPTACLE SOCKET

TABLE 1—WIRING CIRCUITS

Conductor Identification	Wire Color	Lamp and Signal Circuits
Wht	White	Ground return to towing vehicle
Blk	Black	Clearance, side marker, and identification lamps
Yel	Yellow	Left-hand turn signal and hazard signal
Red	Red	Stoplamps and antiwheel lock devices
Grn	Green	Right-hand turn signal and hazard signal
Brn	Brown	Tail and license plate lamps
Blu	Blue	Auxiliary

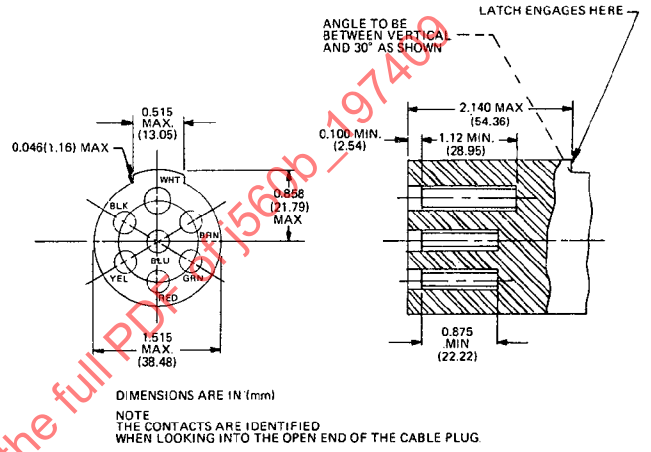

FIG. 3—CABLE PLUG

4.2 Male contacts in the receptacle socket may be made of solid or split construction. Female contacts in the cable plug shall be spring loaded radially in order to maintain proper contact for interchangeability.

4.3 The receptacle socket and cable plug shall be so constructed that the "WHT" terminal shall accommodate at least a No. 8 gage wire and all other terminals at least a No. 10 gage wire.

4.4 For identification purposes, the number of this standard shall appear on the plug and receptacle, in a visible location when they are installed on a vehicle.

5. Receptacle Requirements—Fig. 2 shows receptacle socket dimensions and minimum design requirements. The receptacle shall be provided with a weathertight cover attached to the housing or connector socket, and provided with a latching device which shall make engagement with the back end of the index key on the cable plug. The receptacle cover shall be so constructed that it will latch properly without interference to a cable plug, regardless of the plug's length, when such a plug is properly engaged with the connector socket.

6. Cable Plug Requirements

6.1 Fig. 3 shows cable plug dimensions and minimum design requirements.

6.2 The force required to connect or disconnect a new cable plug and a new receptacle socket from the same manufacturer shall not exceed 50 lb (222 N).

6.3 An assembled cable plug and trailer jumper cable shall be so constructed that they will not be damaged by resisting a straight pull of 150 lb (667 N) applied to the jumper cable. All cable plugs shall incorporate a strain relief device to ease the tension on the electrical connections between the female contacts and the cable conductors.

7. Performance Requirements—The cable plug and receptacle shall be tested in the following sequence:

(a) Measure the voltage drop across each circuit.
(b) Perform 2500 coupling cycles.
(c) Conduct salt spray test (paragraph 7.3.1).
(d) Measure voltage drop and check for grounds and shorts between circuits.
(e) Conduct salt spray test (paragraph 7.3.2).
(f) Check for grounds and shorts between circuits.
(g) Perform 2500 additional coupling cycles.

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