

# Electrical Connector for Auxiliary Starting of Construction, Agricultural, and Off-Road Machinery —SAE J1283 JUN80

SAE Recommended Practice  
Approved June 1980

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**ELECTRICAL CONNECTOR FOR AUXILIARY STARTING OF CONSTRUCTION, AGRICULTURAL, AND OFF-ROAD MACHINERY—SAE J1283 JUN80**

**SAE Recommended Practice**

Report of the Off-Road Machinery Technical Committee, Subcommittee 5, approved June 1980.

1. **Scope**—This SAE Recommended Practice covers the details, dimensions, and design of the parts of both *plug* and *receptacle* which must mate properly to permit interchangeable use of different makes of connectors. It provides the auxiliary starting circuit of the machine with a universal connecting device, fool-proof polarity, standard circuit coding, and protection for the wiring and equipment from electrical shorts.

2. **Description**—The receptacle assembly shall be of the design as shown in Fig. 1 and shall be permanently installed in a machine. The receptacle contains the male contacts (Fig. 3B) and the configuration shall provide positive means of assuring correct polarity when coupled with the mating plug.

2.1 The plug assembly shall be of the design as shown in Fig. 2 and shall be used for auxiliary starting from one machine to another (Fig. 2A), or from an external power source, such as a *Battery Cart*, to a machine (Fig. 2B). The plug contains the female contacts (Fig. 3A) and mates with the receptacle previously described.

2.2 The cover assembly shall be of the design as shown in Fig. 4, and is provided to keep the receptacle free of dust and moisture when not in use.

3. **Details of Construction**—Connector bodies shall be made of glass-filled nylon or other moldable insulating material having equal or superior properties.

3.1 Terminals shall be permanently attached to cable ends, before molding, by welding or other suitable method to provide a connection

which will be mechanically and electrically secure.

3.2 Current carrying cables shall be 62 (2/0) or 81 (3/0) wire size and shall conform to a minimum of SAE J1127, receptacle cables being type SGT (thermoplastic insulated), and plug cables being type SGR (rubber or synthetic insulated). Extra flexible stranding shall be used on the plug cables. All cables shall be of sufficient length and adequately terminated to connect with appropriate points within or between the machines.

3.3 Color or number identification of cables shall conform to SAE J821, arranged as shown in Figs. 1 and 2, to provide continuity of identification throughout the connected assemblies.

4. **Location of Receptacle on Machine**—The receptacle shall be attached on the interior side of a machine with the terminal portion protruding outward through acceptance holes (Fig. 1) in the side of the machine and located so that exposed portions of the receptacle will be protected from external damage. The location should also provide easy access for attaching the auxiliary starting cables, and should be as close as practical to the starting motor in the machine so as to require a minimum length of connecting cables which must be properly secured and protected within the machine.

Note: Machine manufacturer shall label working system voltage at receptacle.

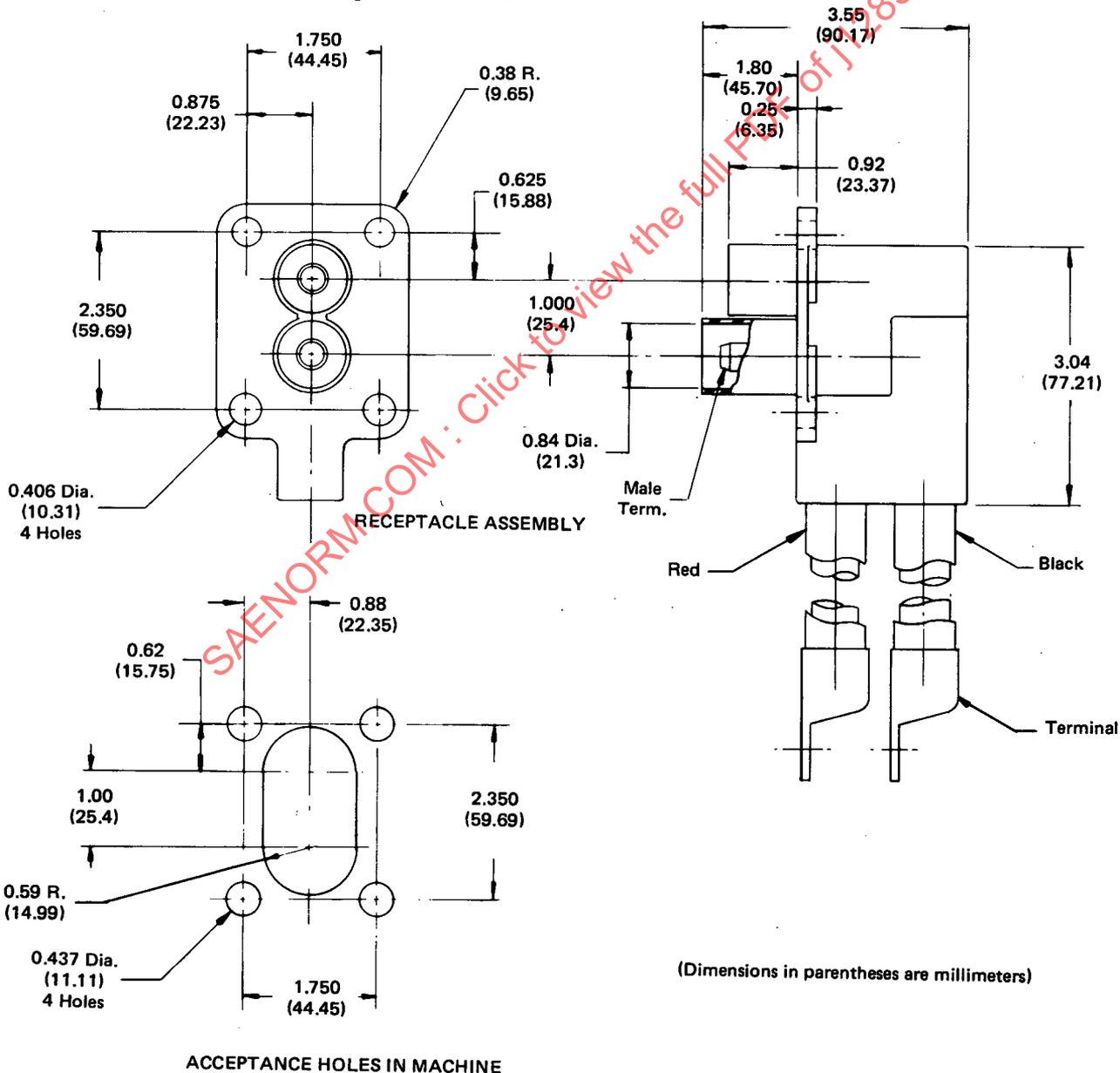
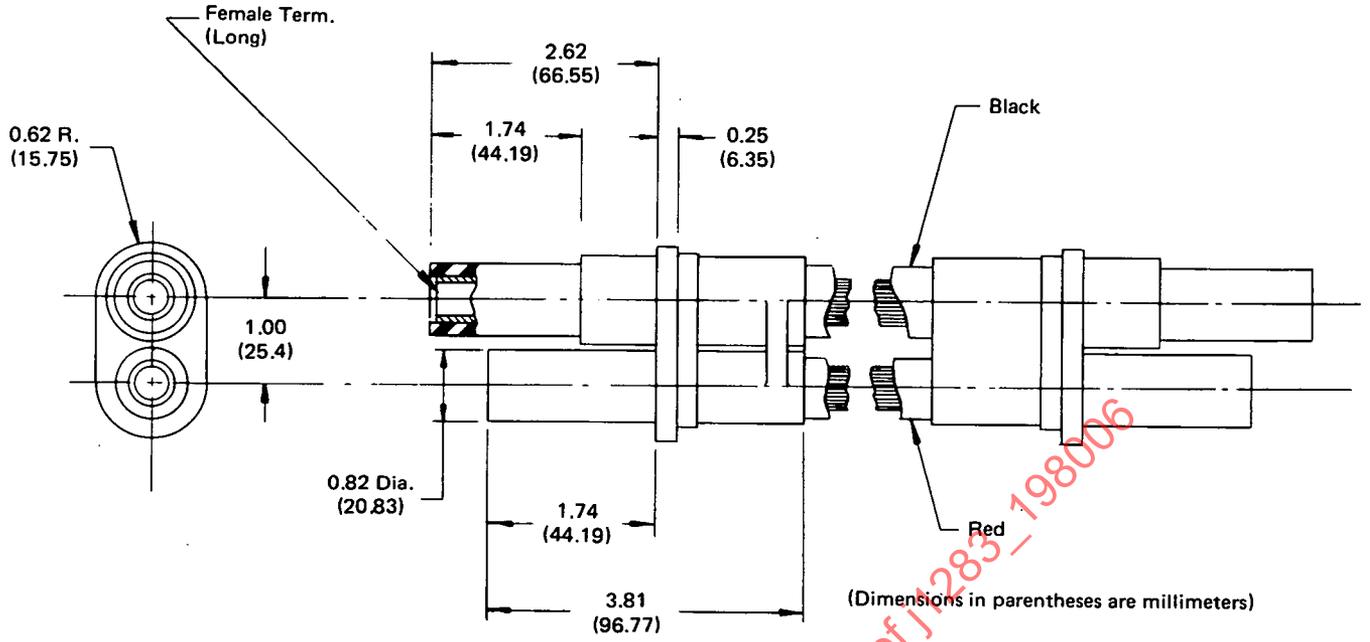
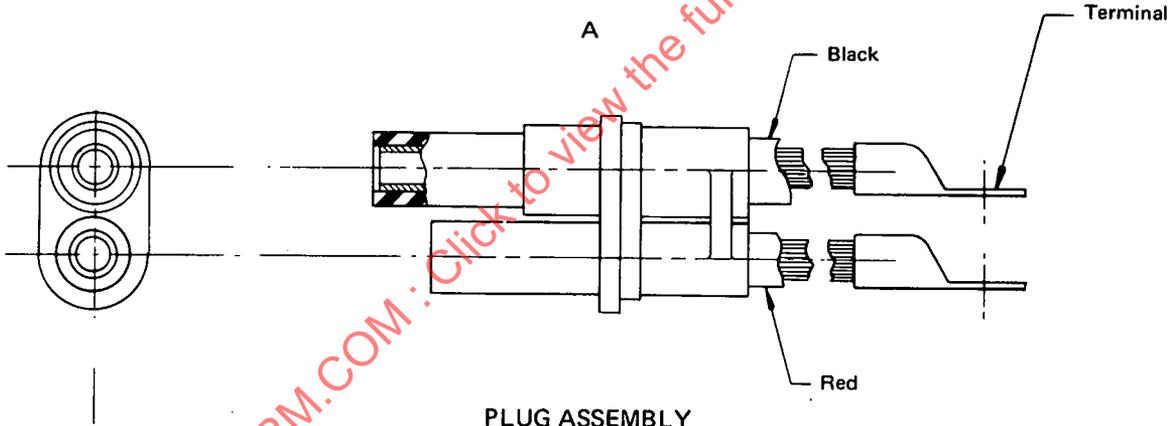


FIG. 1



PLUG ASSEMBLY  
MACHINE TO MACHINE



PLUG ASSEMBLY  
MACHINE TO BATTERY CART

B

FIG. 2

Long Term. for black wire - L = 2.688 (66.27)  
Short Term. for red wire - L = 1.844 (46.83)

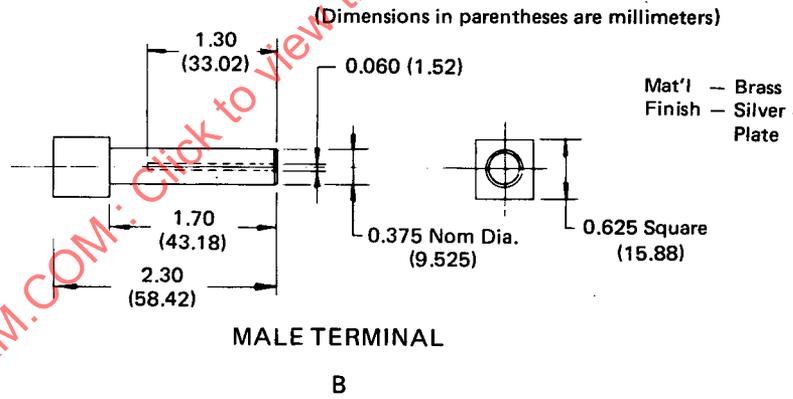
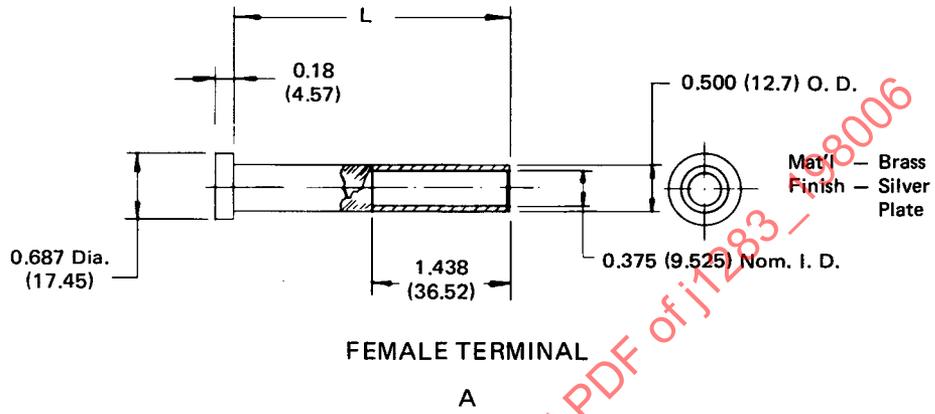


FIG. 3