



SURFACE VEHICLE STANDARD	J1493™	DEC2024
	Issued 1986-12 Revised 2019-08 Reaffirmed 2024-12	
Superseding J1493 AUG2019		
Guarding of Starter System Energization		

RATIONALE

Limited revision to update the title of ANSI/SAE S390 and the address and phone number for ASABE.

SAE J1493 has been reaffirmed to comply with the SAE Five-Year Review policy.

1. SCOPE

This SAE Standard describes guarding to help prevent hazardous machine movement caused by activation of the starter motor by bypassing the starter control system.

This document is applicable to off-road, self-propelled work machines, as identified in SAE J1116, and agricultural tractors, as defined in ANSI/SAE S390, which have the potential for hazardous machine movement as a result of bypassing the starter control system and powering of the starter motor.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this specification to the extent specified herein. Unless otherwise indicated, the latest issue of SAE publications shall apply.

2.1.1 SAE Publication

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), www.sae.org.

SAE J1116 Categories of Off-Road Self-Propelled Work Machines

2.1.2 ASABE Publication

Available from American Society of Agricultural and Biological Engineers, 2950 Niles Road, St. Joseph, MI 49085, <http://www.asabe.org>.

ANSI/SAE S390 Tractors and Machinery for Agriculture and Forestry - Basic Types - Vocabulary

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3. DEFINITIONS

3.1 HAZARDOUS MACHINE MOVEMENT

Unexpected machine movement resulting from power supplied to the starter motor with the machine ground drive or work function drive engaged which has the potential to cause injury.

3.2 STARTER CONTROL SYSTEM

The system consisting of the components used for controlling battery power to the starter motor. These components typically include the start switch, neutral switch, solenoid, and relay.

3.3 STARTER MOTOR SOLENOID

The power relay that supplies power to the starter motor from the battery.

3.4 TERMINAL

The electrical connection point such as a stud or a spade, connecting the cable and the device including the uninsulated portion of the cable which is connected to the device.

3.5 COIL TERMINAL

The terminal used to connect the starter control system circuit to the starter motor solenoid, terminal (1) in Figure 1.

3.6 BATTERY TERMINAL

The terminal used to connect the battery cable to the starter motor solenoid to operate the starter motor, terminal (2) in Figure 1.

3.7 MOTOR TERMINAL

The terminal used to connect the starter motor solenoid to the starter motor, terminal (3) in Figure 1.

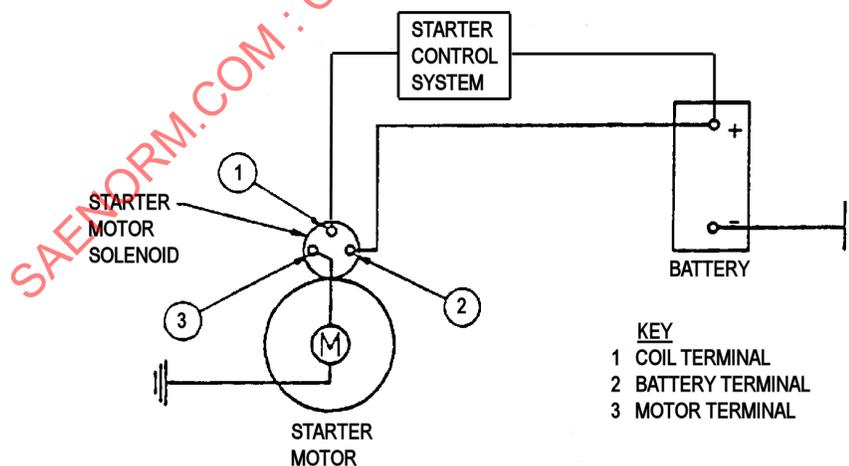


Figure 1 - Typical starter circuit