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**SAE J539 MAR87**

## **Voltages for Diesel Electrical Systems**

**SAE Recommended Practice  
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**Submitted for Recognition as  
an American National Standard**

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**VOLTAGES FOR DIESEL ELECTRICAL SYSTEMS**

This SAE Recommended Practice is intended to apply to lamps, batteries, heaters, radios, and similar equipment for operation with mobile or automotive diesel engines. Twenty-four V systems have long been used for heavy duty services because 24 V permit operating 12 V systems in series-parallel. Thirty-two V systems have been used for marine, railroad-car lighting, and other uses.

Generators, storage batteries, starting motors, lighting, and auxiliary electrical equipment shall be for nominal system ratings of 12, 24, or 32 V as determined by the power requirements of the application. It is recommended that no intermediate voltages be considered except that a 30 V system may be used when cranking requirements permit and no lighting or auxiliary electrical equipment is involved.

The combination of a 24 V starting motor and two 12 V batteries connected in series for cranking is considered practical where it can be adapted to the installation. The batteries are reconnected in parallel for charging from a 12 V generator/alternator and for operating lights and other auxiliary equipment, or charged separately and used individually for lights and other electrical equipment.

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RATIONALE:

Not applicable.

RELATIONSHIP OF SAE STANDARD TO ISO STANDARD:

Not applicable.

REFERENCE SECTION:

APPLICATION:

This SAE Recommended Practice is intended to apply to lamps, batteries, heaters, radios, and similar equipment for operation with mobile or automotive diesel engines.

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