
Vehicle Electrification System Standards

III. High Voltage Vehicle Safety Systems

III.b Manual/Service Disconnect Systems

OEM Acronyms:

MSD – Manual Service Disconnect

Description:

The MSD is a removeable component of the battery pack that, when removed to diagnose or service the vehicle, will break the string of series connected modules or cells.

Outcome (Goal):

Students will locate and safely remove the vehicle MSD.

Objective:

When provided with a hybrid, plug-in, or electric vehicle the student will be able to locate and remove the vehicle MSD.

Task:

Students will use high voltage personal protective equipment and the OEM service information procedure to remove the MSD to disable the high voltage system.

Required Special Tools and/or Equipment to Complete Task:

High voltage personal protective equipment; hand tools; OEM specified equipment.



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Northwest Engineering and Vehicle Technology Exchange (NEVTEX)

Advanced Vehicle Technician Standards Committee (AVTSC)

Instructor Demonstrations (System Operation, Testing, Servicing, Repair):

The instructor shall demonstrate the proper removal of the MSD, while using all of the proper PPE and OEM service procedures.

The instructor shall review, by using other vehicles or components, other designs and locations of the MSD and how the MSD would be properly removed.

The instructor shall highlight, by using example MSDs, how various OEMs will locate the high voltage fuse within the MSD.

Information Resources to support Tasks, Demonstrations, Repairs, etc.:

Examples of various MSD components; OEM service information

Suggested Vehicle for Tasks and Demonstrations:

Available vehicles

Governing Standards (Safety, Testing, Diagnostics or Repair):

FMVSS 305

Industry Resource Organization:

- Society of Automotive Engineers (SAE)
 - Institute of Electrical & Electronic Engineers (IEEE)
 - International Electrotechnical Commission (IEC)
 - American Society for Testing and Materials (ASTM)
 - Occupational Safety & Health Administration (OSHA)
 - National Fire Protection Association (NFPA)
 - Underwriters Laboratories (UL)
 - ✓ Federal Motor Vehicle Safety Standard (FMVSS)
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