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 Group: 54

**Revision d:** *Edits to WIS references, Removal of Diagnostic Verification, and Additional Model Validity*

**SUBJECT: MY-All, Model 221.195 with Engine 272.974**  
**MY-All, Model 212.095**  
**MY-All, Model 164.195 Handling High-Voltage Systems in Hybrid Vehicles**



**WARNING!** Risk of death and personal injury may occur when touching components on vehicles with high-voltage on-board electrical system if not done properly. Do not touch components and open lines of the high-voltage on-board electrical system.

Persons who are carriers of electronic implants (e.g. cardiac pacemakers) should not carry out any work on high-voltage on-board electrical systems due to increased risk of death or personal injury.

Work on a high-voltage system or on hybrid components may only be conducted by certified workshop personnel. **NO OTHER WORKSHOP PERSONNEL** may perform work on the high voltage system or hybrid components. HV batteries must always be handled in line with AS54.10-Z-9999ZZ.

MBUSA High-Voltage Awareness e-Learning course, TECH717 must be successfully completed before diagnosing a HV vehicle and proceeding with service has even further requirements. Service work that is not HV-related, such as tire replacement, can also be done by professionals meeting the same minimum requirement of high voltage awareness training.

**Returning HV Batteries**

If it is necessary to replace an HV battery, the return will only be accepted with the filled-out “Analysis Sheet for Transportability of High-Voltage Batteries Form” accompanied by: , the removed part, the quick test printout, the BMS control unit log printout, the repair documentation and with all required documentation listed in Section E of the Form.

The Forms are:

MODEL 212, 221	OF54.10-P-3000-01Z
MODEL 164.195	OF54.10-P-3000-01B

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## Safe Handling of High Voltage Batteries (See WIS document AS54.00-Z-9999ZZ).



**WARNING! Unsafe handling of HV batteries can result in explosion.**

- Prior to work on a HV system, establish zero voltage per XENTRY/DAS.
- Avoid inhaling any dust, vapors or mist from the battery.
- Do not exert any pressure on high-voltage batteries and do not deform it in any way.
- Avoid any rough treatment that could start leakage, ensuing with evaporating electrolyte gas, fire, and in the presence of an igniting source – explosion.
- Ensure adequate ventilation and an evacuation route.
- Always wear protective clothing and safety glasses. Wear electrical protective gloves for HV batteries that are not transport protected.

### Storing HV Batteries

- Never store an HV battery in bulk containers. Short circuits can result with ensuing burns, leakage, and the risk of explosion.
- Keep the storage environment cool and well-ventilated.
- Protect the environment from humidity.
- Prevent any ingress of battery product from entering sewage system, water drains, or the ground.

### Transporting HV Batteries

- HV batteries are classified as UN 3480 lithium-ion battery, Class 9, Packaging group III and can only be transported by following national dangerous goods regulations. Any transport means is automatically considered unsafe transport if the following conditions exist or the potential for the following conditions exist:
  - There could be a hazardous increase in heat.
  - Short circuits can result with ensuing burns, leakage, and the risk of explosion.
  - Other conditions prevail that could raise the potential for the release of liquid electrolyte or combustible, etching, or toxic vapors.
- Shipments can only be authorized or conducted by a qualified MB logistics professional.