EMERGENCY RESPONSE GUIDE

Mercedes Vario Range Extended Electric Vehicle

1 Introduction

1.1 Overview

The emergency response procedures for the Tevva Mercedes Vario range extended electric vehicle are similar to those for hybrid electric vehicles with the same considerations for the high voltage electric system components.

The Tevva Mercedes Vario electric vehicle uses an electric motor to power the vehicle. Electricity is stored in high voltage battery packs.

The system incorporates a generator function in the electric motor that recharges the high voltage batteries during cruising and braking. The information in this guide will help provide a safe response to emergencies involving Tevva Mercedes Vario electric vehicles.

The Tevva Mercedes Vario electric vehicle has been designed with many safety features for your protection. These features help provide safe access to the vehicle under various conditions. However, when approaching an electric vehicle in a fire, rescue or recovery situation, always follow one industry standard rule:

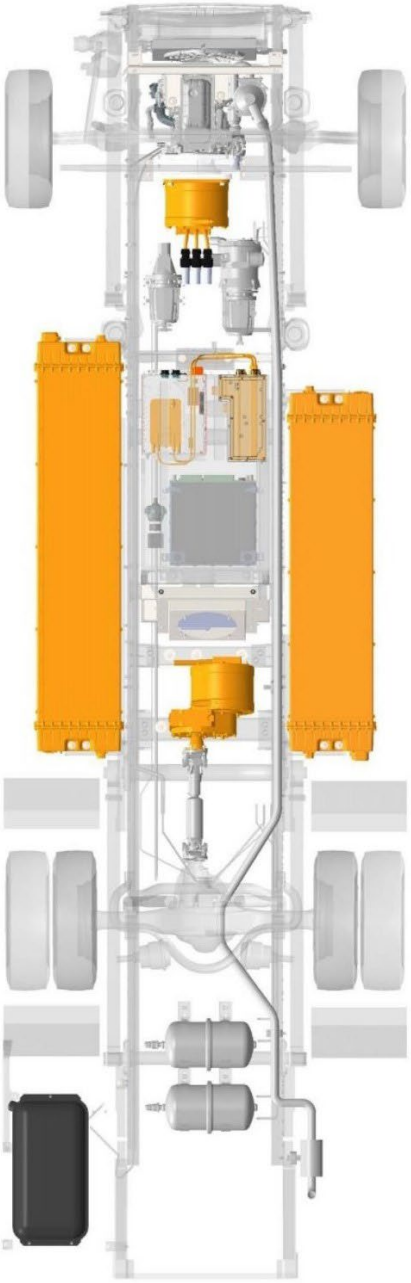
1.2 Electric Vehicle (EV) Identification — Vehicle Exterior

Tevva Mercedes Vario electric vehicles are identified by the signage on the sides and rear of the vehicle.

1.3 Electric Vehicle (EV) Identification — Under Hood

The Tevva Mercedes Vario electric powertrain is identified by the orange high voltage under hood cabling.

NOTE: All high voltage wires and harnesses are wrapped in orange insulation.



2 High Voltage Electrical System Information

2.1 High Voltage Electrical Disconnect Features

WARNING:
ELECTRIC VEHICLES DAMAGED BY A CRASH MAY HAVE COMPROMISED HIGH VOLTAGE SAFETY SYSTEMS AND PRESENT A POTENTIAL HIGH VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION AND WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING HIGH VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELLERY, INCLUDING WATCHES AND RINGS. ISOLATE THE HIGH VOLTAGE SYSTEM AS DIRECTED BY THE TEVVA EMERGENCY RESPONSE GUIDE FOR THE VEHICLE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

The following features have been incorporated into Tevva Mercedes Vario electric vehicles to allow for either simple or automatic shut-off of the high voltage electrical systems.
• High voltage fuse — In the event of a high voltage short circuit, the high voltage fuse opens, isolating the high voltage system.
• High voltage interlock circuit — Whenever a high voltage connector is disconnected, the high voltage interlock circuit opens and isolates the high voltage system.
• Ignition is in the OFF position when the vehicle ready light is off. Any time the ready light is off, the high voltage system is isolated. If the vehicle ready light is on, press the start button to turn off the ignition.
• Battery High Voltage Manual Service Disconnects (MSDs) — Whenever either of the battery high voltage Manual Service Disconnects (MSDs) are removed, the high voltage system is isolated.
• Thermal sensors — If the battery is exposed to hot ambient conditions and/or is being driven aggressively with compromised cooling, power limits will be employed to prevent overheating. However, if the battery is in use and becomes too hot, contacts will open and the vehicle will shut down.

3 High Voltage Warning Decals

High voltage warning decals are placed around the vehicle:

4 High Voltage Battery Packs

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WARNING:
FIRES IN CRASH-DAMAGED ELECTRIC VEHICLES MAY EMIT TOXIC OR COMBUSTIBLE GASSES. SMALL AMOUNTS OF EYE, SKIN OR LUNG IRRITANTS MAY BE PRESENT. WEAR PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SELF-CONTAINED BREATHING APPARATUS WHEN WORKING IN CLOSE PROXIMITY OR IN A CONFINED AREA, SUCH AS A TUNNEL OR GARAGE. VENTILATE THE VEHICLE INTERIOR BY OPENING VEHICLE WINDOWS OR DOORS. VENTILATE THE WORKING AREA. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

WARNING:
REMOVING THE BATTERY HIGH VOLTAGE MANUAL SERVICE DISCONNECTS (MSDs) DOES NOT DISSIPATE VOLTAGE INSIDE THE BATTERY, THE BATTERY PACK REMAINS LIVE AND DANGEROUS. CONTACT WITH THE HIGH VOLTAGE BATTERY PACK INTERNALS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

Observe the following precautions when working on or around high voltage batteries:

- Do not cut the high voltage battery case. Do not penetrate the batteries or case in any way.
- The high voltage battery packs are situated either side of the vehicle on the outer sides of the chassis rails.
- The total voltage of the battery pack is approximately 345 volts DC.
- The battery case is water resistant with connectors in place.
- The battery cells contain a base electrolyte consisting of lithium hexafluorophosphate and organic solvents as the dominant active ingredient, absorbed in special polymeric film. The electrolyte will not leak from the battery under most conditions. However, if the battery is crushed, it is possible for electrolyte to leak.
- If possible, isolate and avoid contact with an electric vehicle components. If contact with the high voltage system cannot be avoided, Personal Protective Equipment (PPE) such as a splash shield or safety goggles, gloves (latex, rubber or Nitrile), an apron or overcoat, and rubber boots are required when handling damaged batteries. Exposure to electrolyte could cause skin and/or eye irritation/burns. If exposed, rinse with large amounts of water for 10-15 minutes.
- If the battery is exposed to intense heat (or other extreme conditions), it is possible that flammable gases and liquid (electrolyte) have been released from the cells. Combustible hydrocarbons such as methane, toxic gases such as carbon monoxide, and very small amounts of eye/skin/lung irritants such as hydrofluoric acid could be released from the battery. Take appropriate precautions to make sure the area is properly ventilated, such as opening the vehicle's windows or doors. First responders should wear Personal Protective Equipment (PPE) and self- contained breathing apparatus to safeguard against thermal, electrical, respiratory and skin/eye hazards.

5 Battery High Voltage Manual Service Disconnects (MSDs)

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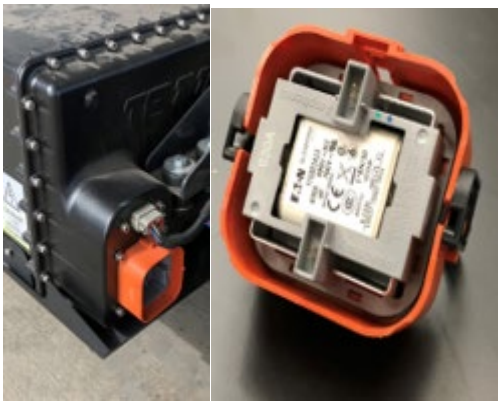
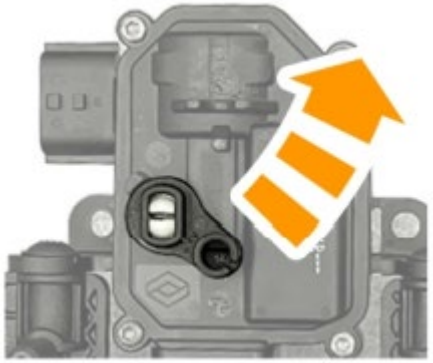


6 High Voltage Charge Cord Lock Manual Release

When the vehicle is connected to a Level 3 DC charging station, it engages a safety latch that positively locks the high voltage charge cord to the vehicle charge port until the latch is released. If this latch fails to release, the cord cannot be removed without special action.



7 Approaching a Damaged Electric Vehicle

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WARNING:
DAMAGED ELECTRIC VEHICLES SUBMERGED IN WATER PRESENT A POTENTIAL HIGH VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION AND WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING HIGH VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELLERY, INCLUDING WATCHES AND RINGS. DO NOT ATTEMPT TO EXTRACT THE VEHICLE UNTIL THE HIGH VOLTAGE BATTERY HAS DISCHARGED INDICATED BY THE ABSENCE OF BUBBLING OR FIZZING. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

WARNING:
FIRES IN CRASH-DAMAGED ELECTRIC VEHICLES MAY EMIT TOXIC OR COMBUSTIBLE GASSES. SMALL AMOUNTS OF EYE, SKIN OR LUNG IRRITANTS MAY BE PRESENT. WEAR PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SELF-CONTAINED BREATHING APPARATUS WHEN WORKING IN CLOSE PROXIMITY OR IN A CONFINED AREA, SUCH AS A TUNNEL OR GARAGE. VENTILATE THE VEHICLE INTERIOR BY OPENING VEHICLE WINDOWS OR DOORS. VENTILATE THE WORKING AREA. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

WARNING:
ELECTRIC VEHICLES WITH DAMAGED HIGH VOLTAGE BATTERIES REQUIRE SPECIAL HANDLING PRECAUTIONS. INSPECT THE VEHICLE CAREFULLY FOR LEAKING BATTERY FLUIDS, SPARKS, FLAMES, AND GURGLING OR BUBBLING SOUNDS. CONTACT EMERGENCY SERVICES IMMEDIATELY IF ANY OF THESE PROBLEMS ARE OBSERVED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A VEHICLE FIRE AND PERSONAL INJURY OR DEATH.

7.1 Follow Existing Training and Incident Commander Direction

Emergency responders should use LARGE amounts of water if fire is present or suspected and, keeping in mind that fire can occur for a considerable period after the crash, should proceed accordingly. This guide provides only supplemental information as it pertains to the Tevva Mercedes Vario range extended electric vehicles. The same rules apply when approaching any potential high voltage situation. Always follow your high voltage safety training. Some precautions to observe in a high voltage situation include:

- Remove all jewellery such as watches, necklaces and earrings. Remove all metal objects that are conductors of electricity.
- Wear the necessary PPEs such as high voltage rubber gloves, face shield, insulated boots,

protective raincoat and apron.
Bring the following equipment:
• Class ABC powder-type fire extinguisher.
• A non-conductive object, about 1.5 m (5 ft) long, to safely push someone away from the vehicle if they accidentally come in contact with a damage electric vehicle.

7.2 Approaching a Damaged Vehicle

Disable the high voltage electrical system using as many of the following steps as possible:
• Secure the vehicle: Place the shift lever into the PARK position. Check that the vehicle ready light is off to verify the high voltage system is disconnected. If the vehicle ready light is on, press the Start button to turn off the ignition. Block the wheels if necessary.
• If possible, remove the High Voltage Manual Service Disconnects (MSDs). For additional information, refer to High Voltage Manual Service Disconnect (MSD) procedures in this manual. If the Manual Service Disconnects (MSDs) cannot be removed, avoid the high voltage system components, and wear appropriate PPE as outlined in this guide.
If the vehicle is on fire, use a Class ABC powder-type extinguisher to contain and smother the flames. If water is being used, LARGE amounts of water is required to extinguish the flames. A fire- hydrant or dedicated fire hose can supply the needed amount. Water can cause some degree of arcing/shorting across the cell and/or battery terminals; it can also react with the electrolyte from the cells to generate additional combustible gas and other byproducts such as hydrofluoric acid.
However, the cooling and smothering effects of flushing the affected article with large amounts of water and/or other fire suppression material is still beneficial for minimizing the severity of the event.
• If the vehicle has any exposed cables, wear high voltage rubber gloves and other appropriate PPE. Do not touch any broken or damaged high voltage orange cables. Treat severed cables as if they contain high voltage.
• If the vehicle is submerged in water, varying degrees of arcing/shorting within the battery will take place. Do not touch any high voltage components or orange cables while removing the occupant(s). Do not remove the vehicle until you are sure the high voltage battery is completely discharged. A submerged high voltage battery may produce a fizzing or bubbling reaction to the water. If fizzing or bubbling is observed, the high voltage battery will be discharged when the fizzing or bubbling has completely stopped. the battery should still be treated as if it is not discharged.

7.3 High Voltage System - Do Not Cut Zones

• If possible, remove the lower and upper battery High Voltage Manual Service Disconnects (MSDs) before attempting any removal procedure. Always assume the high voltage cabling and components are powered up.
• If occupant removal is necessary, always use caution when cutting near the vehicle high voltage system components. Do not cut any of the high voltage under vehicle or under hood cabling (all high voltage cabling is orange). High voltage cabling runs from the high voltage batteries under the left hand side of the vehicle to the under hood compartment. The vehicle charge port is located on the left front fender.
Refer to the diagram below for the no cut zones.

7.4 If The High Voltage Battery Case Has Been Ruptured

Just like any other battery, hose down the area with LARGE amounts of water.

Moving Damaged Vehicles - Tow Truck Drivers
NOTICE: Do not attempt to pull / tow vehicle with all four wheels on the ground as this may cause the vehicle to generate electricity and can cause potential damage.

- If possible, remove the High Voltage Service Disconnects (MSDs). For additional information, refer to the High Voltage Service Disconnect (MSD) section in this guide.
- Rather than attempt to discharge a propulsion battery, an emergency responder, tow truck operator, or storage facility manager should contact experts at the vehicle manufacturer.
- Operators of tow trucks and vehicle storage facilities should make sure the damaged vehicle is kept in an open area instead of inside a garage or other enclosed building.

7.5 Follow the guidelines in the Wrecker Towing Guide:

- Front Tow: Wheel Lift (FWD)
- Rear Tow: Wheel Lift with Dolly (FWD)
- Flatbed: FWD
- If you detect leaking fluids, sparks, smoke, flames, increased temperature, gurgling, popping or hissing noises from the high voltage battery compartment, ventilate the passenger area (such as, roll down the windows or open doors) and call 999.
- Be alert. There is potential for delayed fire with damaged lithium-ion batteries.
- Call Tevva if necessary, to determine the additional steps to take to safely recover or transport the vehicle.
- Always approach the vehicle from the sides to stay out of potential travel path. It may be difficult to determine if the vehicle is running due to lack of engine noise.
- Place vehicle into park, set the parking brake, turn off the vehicle, activate the hazard lights, and remove the key from the vehicle until loading the vehicle for transport.
- Refer to vehicle manual/recovery guide to locate proper attachment/connection points and transport method.

7.6 Electric and Hybrid Electric Vehicle Considerations

In the event of damage to or fire involving an electric vehicle.

- Always assume the High Voltage (HV) battery and associated components are energized and fully charged.
- Exposed electrical components, wires, and HV batteries present potential HV shock hazards.
- Venting/off-gassing HV battery vapors are potentially toxic and flammable.
- Physical damage to the vehicle or HV battery may result in immediate or delayed release of toxic and/or flammable gases and fire.

8 Damaged Vehicle Guidance and Storage

In the event of damage or fire involving an Electric Vehicle (EV) or Hybrid-Electric Vehicle (HEV):

- Always assume the HV battery and associated components are energized and fully charged.
- Exposed electrical components, wires and HV batteries present potential HV shock hazards.
- Venting/off-gassing HV battery vapors are potentially toxic and flammable.
- Physical damage to the vehicle or HV battery may result in immediate or delayed release of toxic and/or flammable gases and fire.

Identifying Vehicle for High System Disabling and Vehicle Shutdown

- Determine if the vehicle is an electric or hybrid-electric vehicle, and if it is, advise your dispatch and all other responders that an electric or hybrid-electric vehicle is involved.
- To identify potential symptoms of a damaged high voltage system, contact an authorized service center or vehicle manufacturer representative. Refer to the vehicle Owner Manual, Emergency Placard (included in the vehicle Owner Manual) and/or the Emergency Response Guide for appropriate contact information.
- If you detect leaking fluids, sparks, smoke, flames, increased temperature, gurgling, popping or hissing noises from the HV battery compartment, ventilate the passenger area (roll down windows or open doors) and call the emergency services.
- Be alert. There is a potential for delayed fire with damaged lithium-ion batteries.

Vehicle Recovery/Transportation

- Call an authorised service center or the vehicle manufacturer, if necessary, to determine additional steps that should be taken to safely recover or transport the vehicle.
- Always approach the vehicle from the sides to stay out of potential travel path. It may be difficult to determine if the vehicle is running due to lack of engine noise.
- Place vehicle into park (P), set the parking brake, turn off the vehicle, activate hazard lights, and remove the keys to a distance at least 5m (16 ft) from the vehicle until loading the vehicle for transport.
- Refer to the vehicle owner manual/recovery guide to locate proper attachment/connection points and transport method.

Avoid contact with orange high voltage cabling and areas identified as high voltage risk by warning labels.

Vehicle Storage

- Do not store a severely damaged vehicle with a lithium-ion battery inside a structure or within 15m (50 ft) of any structure or vehicle.
- Make sure the passenger and cargo compartments remain ventilated.
- Prior to placing vehicle in storage, and while located in storage area/tow lot, continue to inspect vehicle for leaking fluids, sparks, smoke, flames, gurgling or bubbling sounds from the HV battery and call the emergency service if any of these are detected.
- Maintain clear access to stored vehicles for monitoring and emergency response if needed.

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