

2025



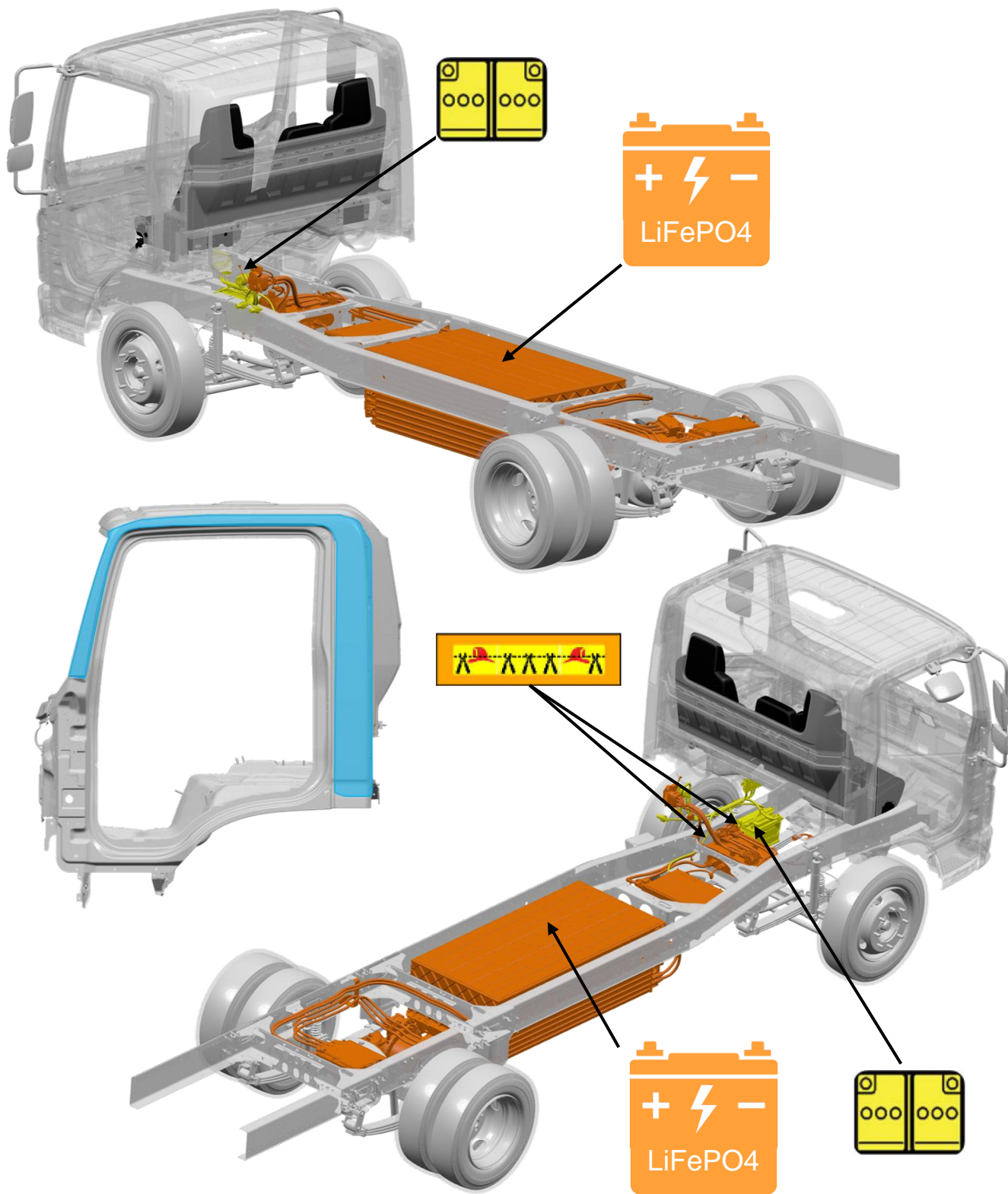
**BOLLINGER B4
FIRST RESPONDERS GUIDE**

BOLLINGER MOTORS

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0. Rescue Sheet



Low Voltage Battery



Cable Cut Point



High Voltage Battery



High Voltage Power Component or Cable



High Strength Zone

1. Identification / Recognition



Advise Dispatch and all responders that an electric vehicle is involved.



Lack of engine noise does not mean vehicle is off: vehicle movement capability exists until vehicle is fully shut down. Always wear appropriate PPE.

Emblems and Badging



The **BOLLINGER MOTORS** insignia appears on the bottom of the Driver and Passenger side doors.

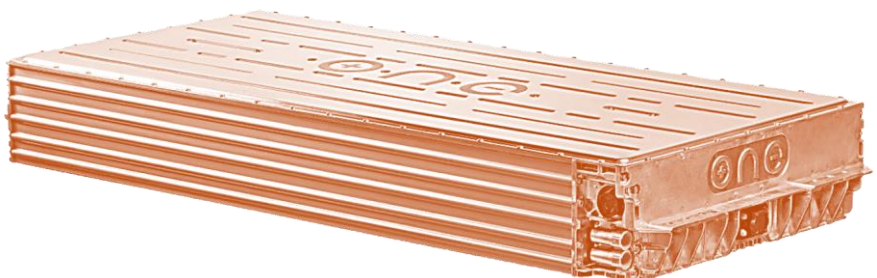
The **BOLLINGER MOTORS** emblem appears on the front of the cab.



High Voltage Battery Information



The battery is a High Voltage Lithium Iron Phosphate Battery, there are two that are mounted under the vehicle between the two frame rails.



2. Immobilization / stabilization / lifting



IMMOBILIZE VEHICLE

- Block the wheels.
- Follow procedures for commercial vehicles.

Parking Brake



Applying the Parking Brake

1. Pull upward on the park brake lever.

Releasing the Parking Brake

1. Press and hold the release button at the end of the park brake lever.
2. Lower the park brake lever.

Drive Selector



Shifting into Park

1. Press the button marked "P" in the center of the Drive Selector.

Turning Ignition OFF



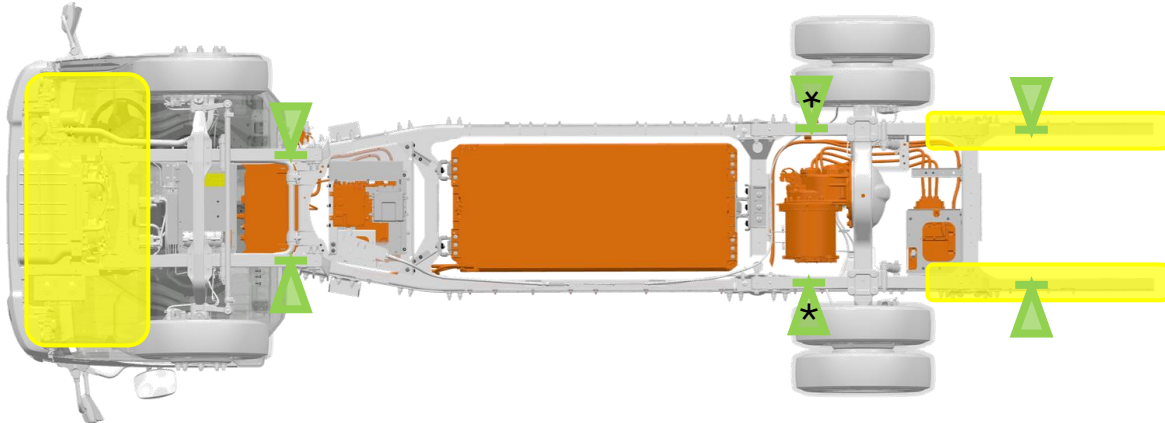
Turning OFF the Ignition

1. Rotate the key counterclockwise until it reaches the stop.
2. Pull key out of Ignition.

(Continued)

2. Immobilization / stabilization / lifting

▲ Stabilization / Lifting Points



	Appropriate lift area (Twin Post) *Park Brake cable retention brackets must be removed and cable moved out of the way of the lift arm pad.
	Safe stabilization points for truck resting on its side.
	High Voltage (HV) Battery/Component/Cable.

*Always follow the hoist/lift manufacturers recommendations when operating vehicle lifting devices.

3. Disable direct hazards / safety regulations

Thermal Runaway Mitigation



The vehicle is equipped with a battery management system with internal fault detection, including thermal runaway mitigation. In the event of a “Battery Danger Detected” notification, DO NOT cut or disable the low voltage system unless you need to disable the high voltage system for an occupant extrication.

Automatic safety systems are enabled when low voltage power is available, including a battery thermal runaway mitigation system that internally cools the high voltage battery when a thermal event is detected; this feature is available in non-crashed, static situations.

When these safeguards are activated, information about this feature will be displayed on the driver instrument panel including a “Battery Danger Detected” message. The vehicle will also activate the horn and the hazard lights.

In the event of a “Battery Danger Detected” notification, DO NOT cut or disable the low voltage system during the thermal runaway mitigation cycle, unless you need to disable the high voltage System for an occupant extrication.

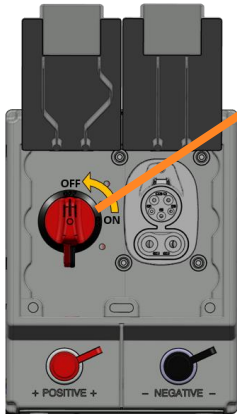
3. Disable direct hazards / safety regulations

Service Cut-Off Switch

1. Ensure that the truck is in P (Park). Then, rotate the key counterclockwise until it reaches the stop and remove the key from the ignition.



The high voltage system can remain energized even when the vehicle is in the OFF state.



2. In the event of an emergency, the high voltage system should be disabled by turning the High Voltage Shut-Off Switch to the OFF position. The High Voltage Shut-Off Switch is located on the Driver's side behind the cab.



High voltage is controlled by the low voltage system. The system is designed to automatically disable the high voltage system in the event of a rollover or other significant acceleration/deceleration event.



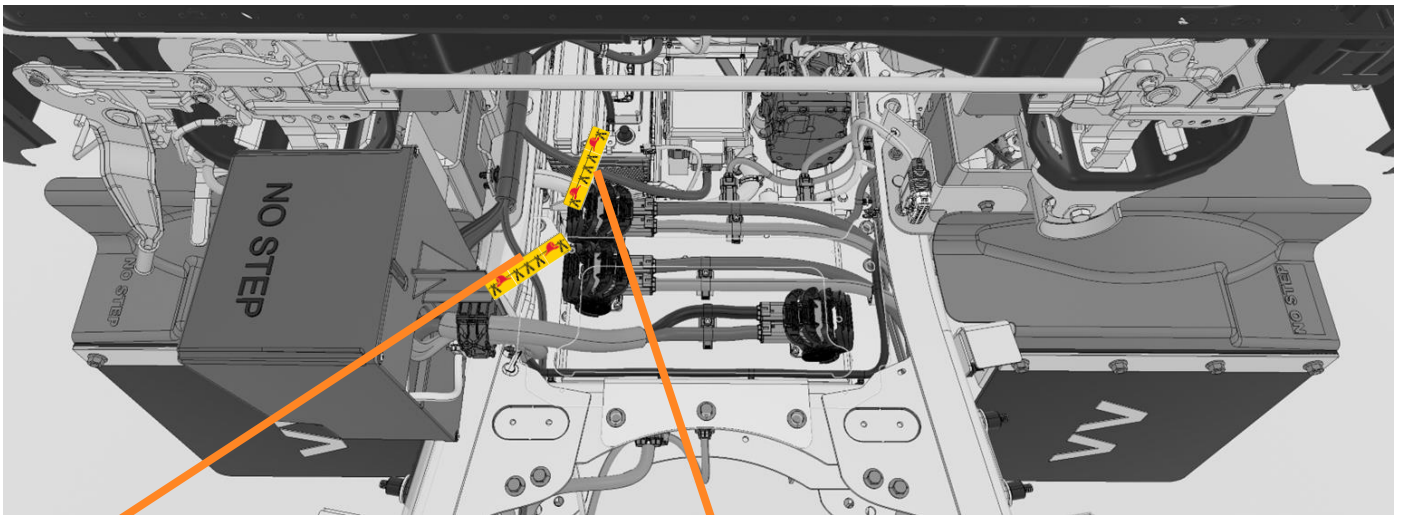
If at a charging station and if able, terminate charging by removing the charge handle from the vehicle.



After disabling the high voltage system wait at least 1 minute to allow high voltage energy to discharge.



Low Voltage Cable Access



1. Cut 12V NEGATIVE cable at battery terminal.

2. Cut 12V POSITIVE cable at DC to DC converter.



Double cut the low voltage cables on both sides of the yellow tape and remove the cut section of cable from the vehicle. Ensure that the cuts are clean and that there is no risk of loose wires touching.

This cut will disable the high voltage.



DO NOT CUT ANY ORANGE COLORED HIGH VOLTAGE CABLES.



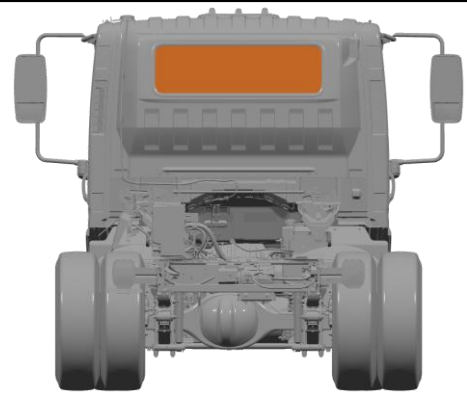
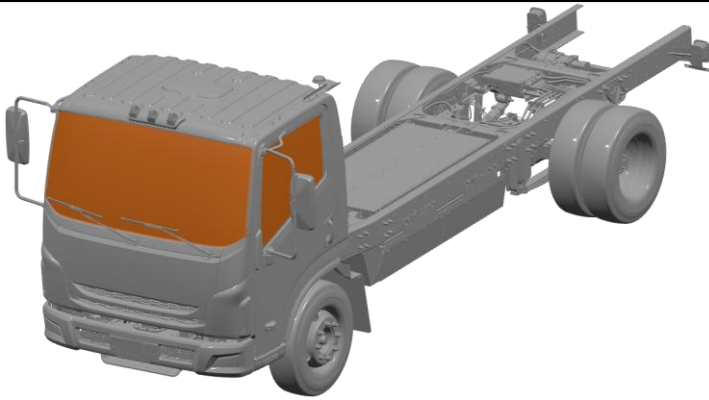
After disabling the high voltage system wait at least 1 minute to allow high voltage energy to discharge.



If at a charging station and if able, terminate charging by removing the charge handle from the vehicle.

4. Access to the occupants

Vehicle Glass



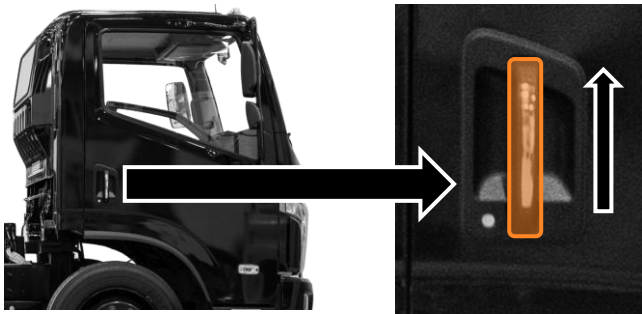
The windshield is made of Laminated Glass. The door windows and rear window are made of Tempered Glass.

Opening a Locked Door



Electrical and mechanical releases may be compromised after a collision. Extrication may be necessary to access occupants.

OPENING DOOR FROM OUTSIDE



OPENING DOOR FROM INSIDE



Seat and Steering Column



MANUALLY REPOSITION



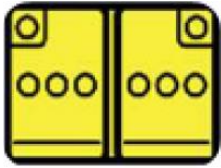
The steering wheel and column can be moved by pulling UP on the Tilt/Telescopic Lever.

The Driver's seat can be moved by pulling UP on the Seat Slide Lever.



As with any occupant extrication, exercise caution. The vehicle's high voltage cables and components may be energized with high voltage. Avoid touching or cutting high voltage cables or components during any rescue operation.

5. Stored energy / liquids / gases / solids



12V Low Voltage Lead Acid Chemistry Battery



750V High Voltage Lithium Iron Phosphate (LiFePO₄) Battery



High Voltage Warning, potential for electric shock.



Gases emitted from the battery pack are flammable.



Gases emitted from the battery pack are toxic.



Skin contact may cause irritation. Prolonged contact with electrolyte mixture may result in more severe irritation. Flush contaminated skin with plenty of water.



Coolant leaking inside the battery pack can become unstable and possibly a risk for a fire.
Check the battery pack temperature using a thermal imaging camera.

6. In case of fire



High Voltage Warning, potential for electric shock.



A battery on fire will not explode.



A battery on fire will not explode. If battery cells reach high enough temperature, they vent and release electrolyte. Battery electrolyte is flammable.



Gases emitted from the battery pack are toxic.



Skin contact may cause irritation. Prolonged contact with electrolyte mixture may result in more severe irritation. Flush contaminated skin with plenty of water.



Potential for eye, nose, and throat irritation with prolonged exposure.



Always wear Self-Contained Breathing Apparatus (SCBA).
Use copious amounts of water to cool the battery and to extinguish a fire.
Do NOT use an ABC dry chemical extinguisher because it will not extinguish a battery fire.



Potential for Battery Re-Ignition.
Check the battery pack temperature using a thermal imaging camera.

7. In case of submersion

The high voltage battery is isolated from the vehicle chassis. If the vehicle is immersed in water, there is no risk of electrocution by touching the vehicle.

After the vehicle is removed from the water, do the following:

1. Allow the vehicle to dry out.
2. Perform the high voltage disabling procedure in Section 3.

8. Towing / transportation / storage

Vehicle Towing and Transportation



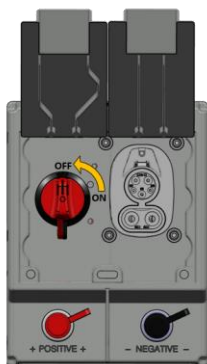
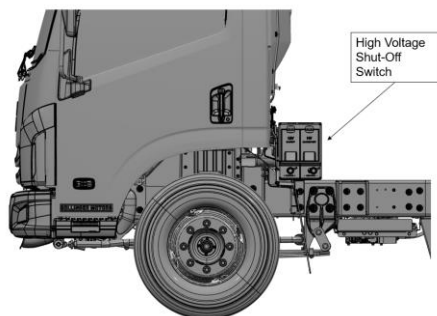
Bollinger Motors recommends a flatbed carrier to transport a disabled vehicle **WITHOUT A BOX UPFIT** or a tow configuration with the rear wheels suspended.



The steering wheel **MUST BE LOCKED** while vehicle is being towed or transported using a rear wheels suspended method.



Moving the vehicle with the drive wheels on the ground will generate unwanted energy. Limit the movement of the vehicle to the distance required to prepare the vehicle for towing.



Make sure the High Voltage Shut-Off Switch is turned to the "OFF" position.

Wheel Lift Towing – Front Wheels Suspended

1. Remove both right and left rear axle shafts, then cover the hub opening to prevent loss of axle lubricant and entry of dirt or foreign matter.
2. Using appropriate wheel lift towing equipment, support the front wheels with the lift and secure for safe transport.
3. The vehicle is equipped with an electronic shift dial and a direct drive motor. Once the rear axle shafts are removed and secured, no other action is necessary for putting the vehicle in neutral like a traditional application.
4. Make a slow start to minimize shock. Towing speed should be kept to safe speeds for the conditions that are present.

8. Towing / transportation / storage

Post-Crash Vehicle Storage



Store the vehicle a safe distance (15 meters / 50 feet) or separated from other vehicles.



Potential for continued hazards (rekindling/re-gassing/etc.) if a damaged vehicle battery is jostled during recovery, including the towing and storage process.


















After a thermal runaway mitigation cycle completes, it might be appropriate to wait up to an hour before towing to a certified dealer for vehicle inspection even though evidence of a thermal event such as smoke may not be visible, and unusual odors may not be detected from the vehicle. Vehicle should continue to be monitored for 24 hours.

9. Important additional information

First Responder information can be found at:

<https://bollinger-motors.pub-portal.com/firstresponders.pdf>

10. Explanation of pictograms used

	Electric Vehicle		Toxic
	General warning sign		Injury Risk
	Warning, Electricity		Corrosive
	Battery Technology		Use Water
	Lifting Points		Low Voltage Battery
	Thermal Imaging Camera		High Voltage Battery
	Flammable		Cable Cut Location
	Cable Double Cut		