

This guide is intended for first responders and certified rescuers. high-voltage batteries are the only energy source for the propulsion of the Lion6. Always act as if the high-voltage system is activated. the high-voltage system might be active even when the vehicle emits no sound.

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LION6 Emergency Response Guide - 2024/11/04

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Identification

The Lion6 can be identified by the Lion Electric logo located at the centre front of the hood.

The logo can also be found throughout the cabin and on several chassis components. There also may be Lion6 decals near the bottom of the cabin doors.

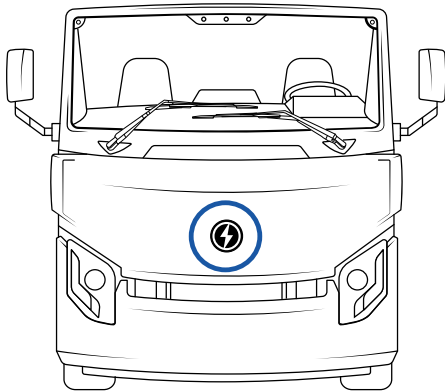


Figure 1 - Lion6 logo

The Lion6 can be equipped with two to six batteries. In its fullest battery configuration:

- Four batteries are located between the front and the rear axle (**Figure 2 no.1**),
- Two batteries are located behind the rear axle (**Figure 2 no.2**).

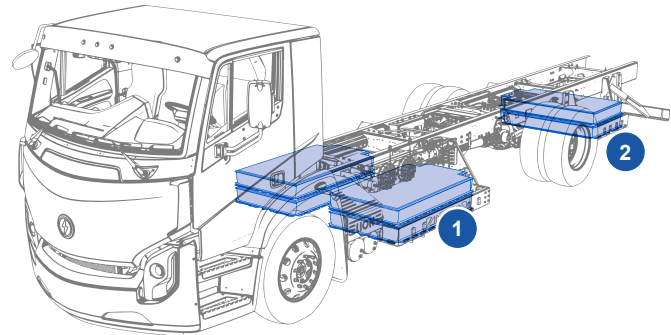


Figure 2 - Batteries locations

HIGH-VOLTAGE COMPONENTS

Schematics

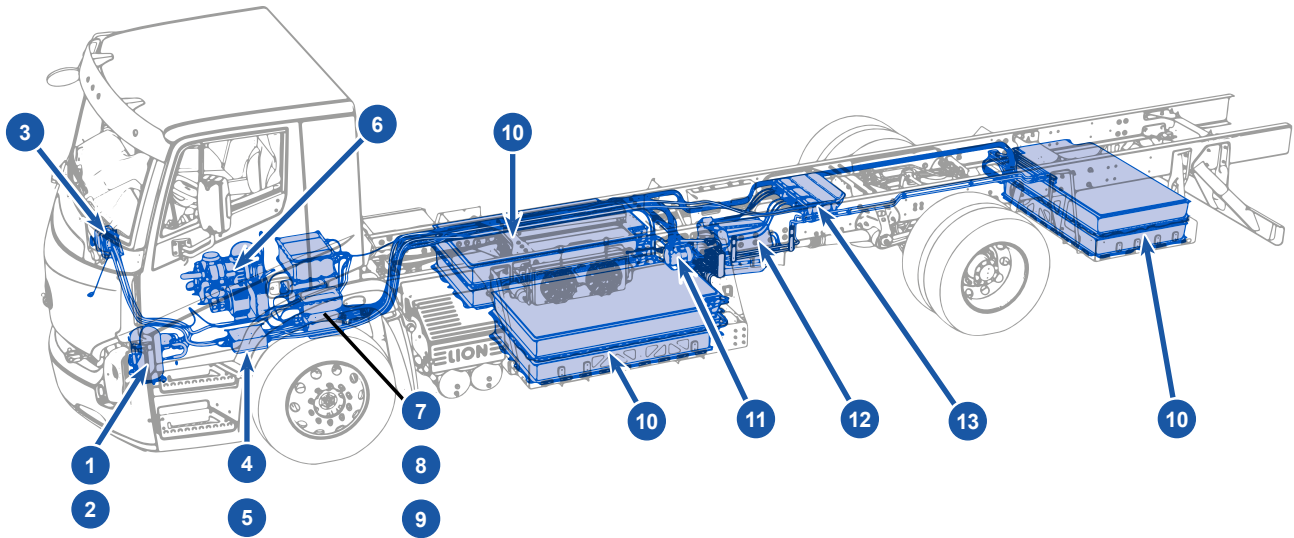


Figure 3 - Identification of Lion6 high-voltage components (side view)

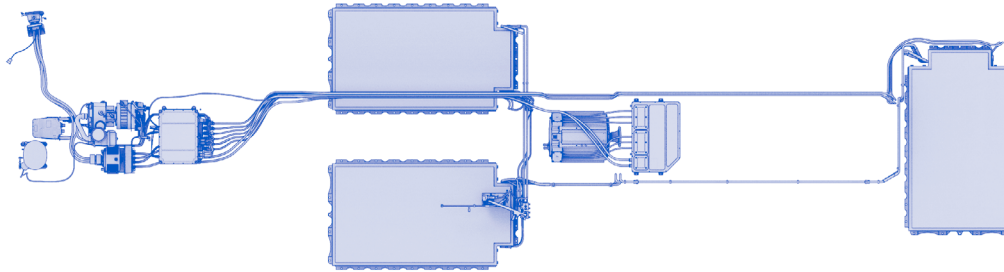


Figure 4 - Identification of Lion6 high-voltage components (top view)

No.	Identification	No.	Identification	No.	Identification	No.	Identification
1	AC compressor	5	DC junction box	8	DCDC converter (2 units)	11	BTMS compressor (battery thermal management system)
2	Electric defroster/heater	6	Air brake compressor	9	BCI20 (charger-inverter)	12	Motor
3	Charging port	7	High-voltage distribution unit (HVDU)	10	Batteries (Lithium-Ion)	13	Drive
4	Hydraulic pump						

Table 1 - Identification of Lion6 high-voltage components

HIGH-VOLTAGE COMPONENTS

High-voltage cable routing

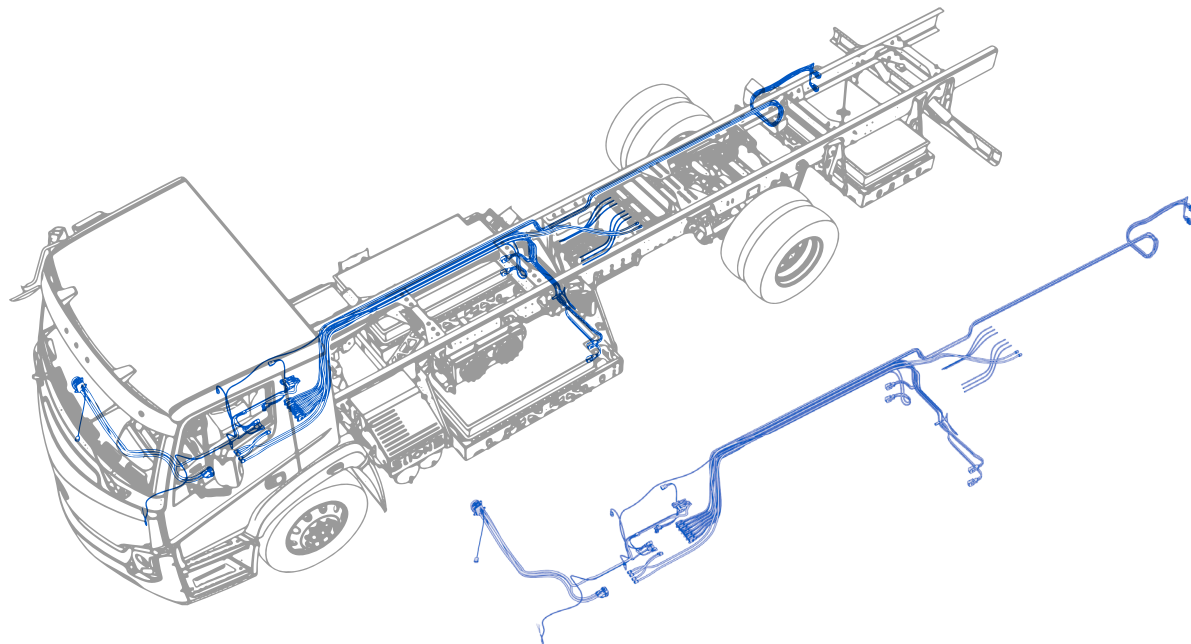


Figure 5 - Lion6 High-voltage cable routing

Warning labels






Label	Meaning
	<p>DO NOT turn on the start switch. Work on high-voltage systems in progress.</p>
	<p>CAUTION! Hazardous voltage</p>
	<p>CAUTION! High-voltage parts Before working on the vehicle, follow the procedure in the <i>Disabling the high-voltage battery</i> section of this document.</p>
	<p>HAZARDOUS VOLTAGE! Risk of electrocution. Shut off high-voltage equipment.</p>
	<p>CAUTION! High-voltage battery Incorrect handling may cause injury. High voltage, risk of explosion, risk of chemical burns and eye injuries</p>

Table 2 - Warning labels

HIGH-VOLTAGE COMPONENTS

Warning labels (continued)




Label	Meaning
	<p>CAUTION! High voltage</p> <p>The voltage behind this panel is potentially fatal. Access is restricted to qualified personnel.</p>
	<p>Battery specifications</p>
	<p>Danger! High voltage</p> <p>Disconnect certain components before servicing. Please see the <i>Disabling the high-voltage battery</i> section in this manual.</p>

Table 2 - Warning labels

Accessories compartment

The accessories compartment is located on the left side of the Lion6, behind the cabin. Its primary function is to hold the low-voltage components. The Lion6 low-voltage components function on both 12V and 24V. No high voltage is running through the master disconnect switch. The battery disconnect switch deactivates the high voltage battery contactors.

The following can be found in the accessories compartment:

- Battery disconnect switch (low and high voltage)
- Two low-voltage batteries
- Fuse box

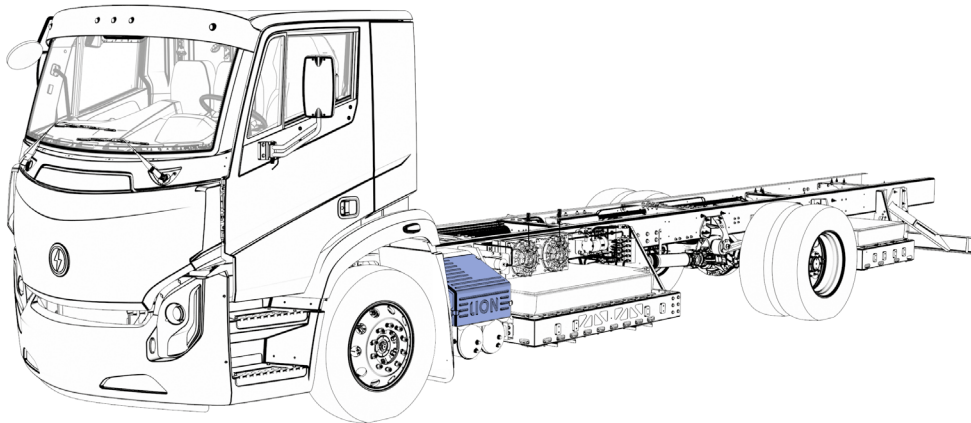


Figure 6 - Accessories compartment

TURNING OFF THE VEHICLE

Turning off the vehicle

1. Press on the brake pedal and put the vehicle in neutral by pressing on the **N** rocker switch located on the dashboard (**Figure 7**).
2. Apply the parking brake by pulling the yellow diamond-shaped button located on the dashboard (**Figure 8**).
3. Turn off the starter switch and remove the key (**Figure 9**).

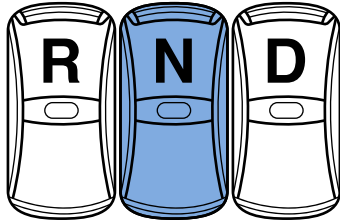


Figure 7 - Gear selector



Figure 8 - Parking brake air-supply control

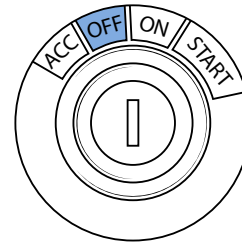


Figure 9 - Start switch

Disabling the high voltage

The vehicle's starter switch must be turned off prior to disabling the high voltage (See page 11).

1. Check the charging receptacle located in the passenger steps to make sure that the vehicle is **NOT** connected. If the vehicle's charging receptacle is connected, remove the connector.
2. Open the accessory compartment located behind the driver's (left) front wheel. Locate the battery disconnect switch and turn it off. Turning off this switch deactivates the low and high voltage. (See page 10.)
3. Double cut the battery cables on both low-voltage batteries located in the accessories compartment. (See page 10.)



Do NOT cut any orange-coloured high-voltage cable wires.

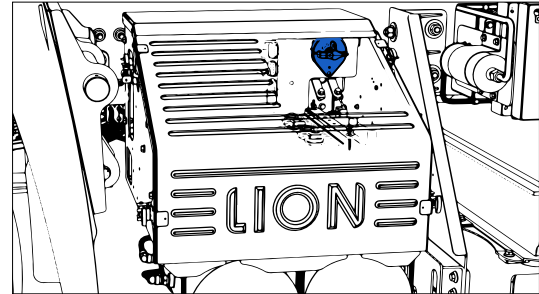


Figure 10 - Battery disconnect switch location

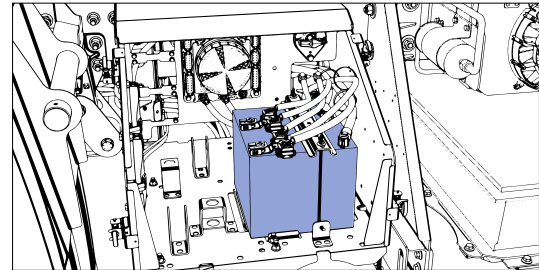


Figure 11 - Two low-voltage batteries

CRASH SAFETY IMPACT DETECTOR

Crash safety impact detector

For the safety reasons, the high-voltage battery disconnect switch is linked to the Lion6's impact detector. When the sensor reads an impact between 8 g and 30 g, it will instantly deactivate the high-voltage circuits.



ALWAYS assume the high voltage is active. Follow the procedure to disable the high voltage, even if the crash safety detector appears to have been triggered.

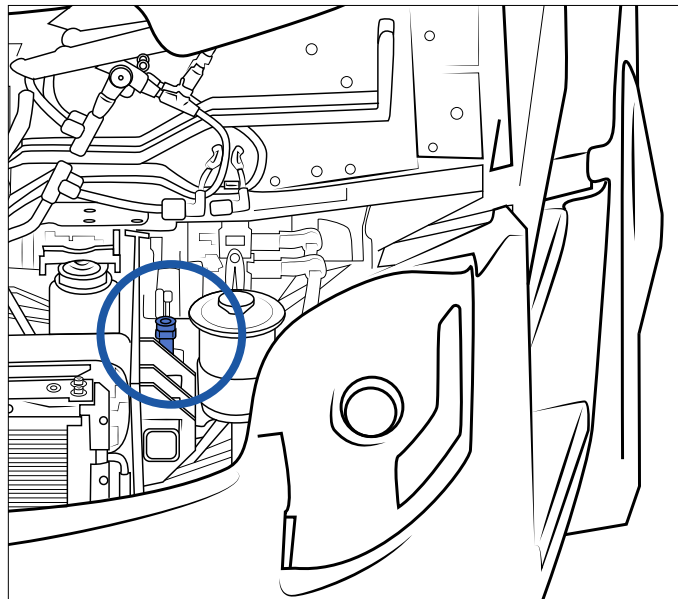


Figure 12 - Location of impact detector

Fire extinguishment of high-voltage batteries

If there is a crack in the batteries due to an impact, an inflammable and corrosive electrolyte solution may leak.

If there is a fire in the batteries, use a lot of water to cool down the batteries or CO². The batteries will not explode.

Depending on the availability, other extinguishing agents (fire extinguishing foam, extinguishing powder) may also be used.

As common in firefighting, complete personal protective equipment (PPE) including self-contained breathing apparatus (SCBA) must be used.

If there a fire that is not emerging from the high-voltage batteries, it can be treated using typical vehicle firefighting procedures.

Submerged vehicle

A Lion6 that is submerged in water will not present the risk of electrocution since the high-voltage batteries are isolated from the vehicle chassis.

Treat a partially or fully submerged Lion6 as any other vehicle and use the appropriate personal protective equipment (PPE).

Once the vehicle is removed from water, disable the high voltage using the procedure listed in this manual (**See page 11**).



If the vehicle has been immersed in water, turn the battery disconnect switch to the "OFF" position and contact your Lion Service Centre for instructions.

If the vehicle is parked indoors, it must be towed outside and parked away from buildings and other vehicles.

UNDER THE HOOD

Opening the hood

1. Stand in front of the vehicle and locate the release latches (**Figure 13**) on each side of the front of the hood.
2. Pull both levers at the same time.
3. Lift the hood and locate the handle located in the centre (**Figure 14**), at the far edge of the hood.
4. Use the handle to lift the hood.
5. Push on both arms of the safety mechanism (**Figure 15**) to lock the hood in the open position.

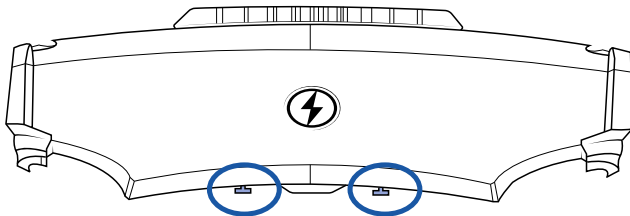


Figure 13 - Location of hood latches

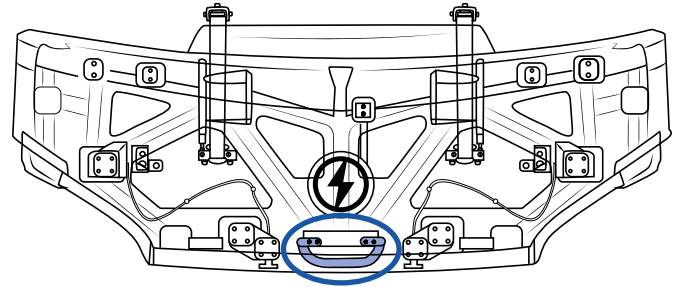


Figure 14 - Location of handle under the hood

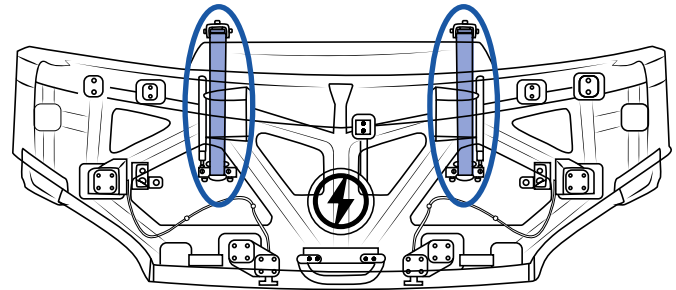


Figure 15 - Location of hood safety mechanism

Tilting cab mechanism

Under normal circumstances, the Lion6 uses a hydraulic system to tilt the cab. This system uses an electric motor to activate the hydraulic pump. However, if the vehicle's low-voltage power source has been disabled, you can still tilt the cabin.

To manually operate the cab tilting pump:

1. Check to make sure that the vehicle's high-voltage circuits have been turned off, or turn them off (**See pag 12**).
2. Apply the parking brake and put the gear selector in Neutral (**See page 11**).



Figure 16 - Hazard warning label



The hydraulic cab tilt system is a cab lifting, NOT a cab holding device. Before going under a raised cab, ALWAYS engage the mechanical cab holding device.

UNDER THE HOOD

3. Lift the front hood (**See page 15**) and remove the tubular lever for the manual pump from under the hood (**Figure 18**).

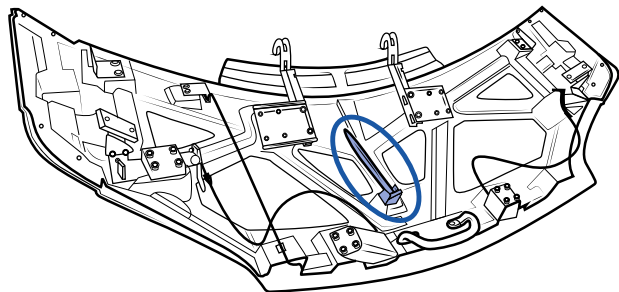


Figure 18 - Tubular lever under the hood

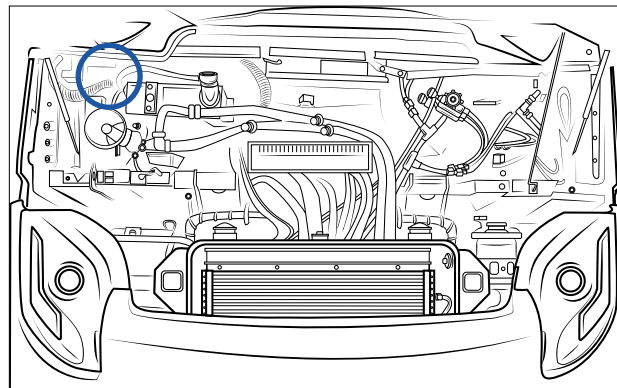


Figure 17 - Hydraulic cab pump mechanism

4. Insert the tubular lever on the side of the pump (**Figure 19**).
5. Place the selector valve on the hydraulic pump in the **CAB RAISE** position.
6. Activate the pump by using the tubular lever. The latch hooks will release and the cab will rise.
7. As the cab approaches top dead centre (TDC), pump slowly. When the cab goes over TDC, stop pumping. The cab will free fall slowly to full tilt.

To lower the cab, follow the same steps with the selector valve in the **CAB LOWER** position.

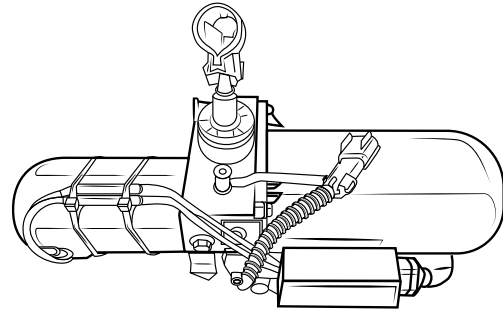


Figure 19 - Tilting cab mechanism

REINFORCEMENTS AND LIFTING THE VEHICLE

Reinforcements

The Lion6 has a reinforced cabin to protect in case of an impact.

Suitable tools must be used to cut or crush these areas.

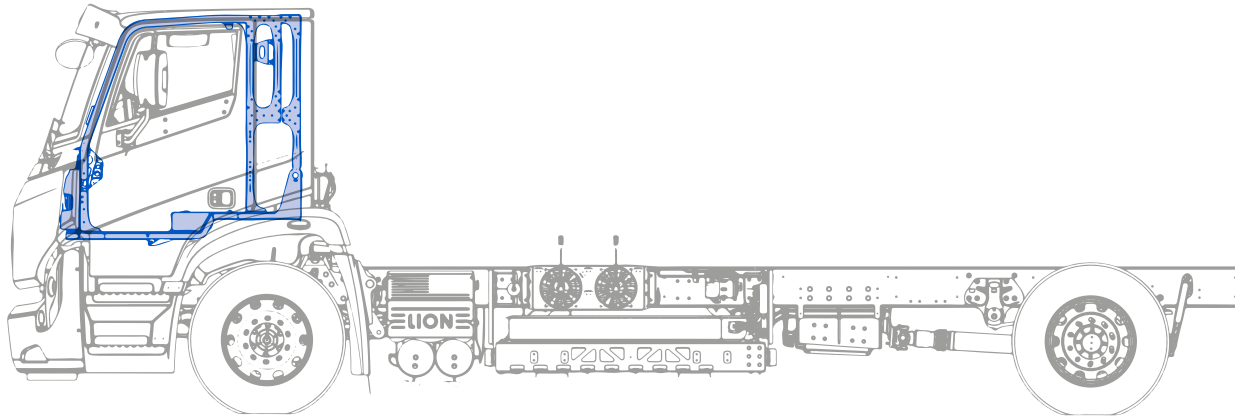


Figure 20 - Reinforced cabin

Lifting the vehicle

If lifting the vehicle is necessary, use the following practices:

Proper jacking procedures and basic safety measures must be observed to ensure the safety of personnel while performing duty under the vehicle.

Always check the serviceability of any lifting equipment prior to use.

Ensure that the lifting equipment is of sufficient strength to handle the vehicle, and that the surface provides the necessary firmness to support the weight of the vehicle concentrated on the footprint of the jack.

Park the truck on a flat, level surface of sufficient firmness to support the jack.

Lifting areas

Place the jack securely under the axle at the spring or suspension beam, nearest the tire/wheel.

Place the jack securely under the frame rails.



Do NOT lift the vehicle from under the batteries.

TOWING THE VEHICLE

Before attempting to tow the vehicle, you will need to release the parking brakes.

Manual parking brake release

If all of the air has been evacuated from the pneumatic system or there is an air leak from a brake actuator, it is possible to release the parking brakes by manually compressing (caging) the spring brake actuator. Before manually releasing parking brakes, chock the wheels to prevent the vehicle from moving.

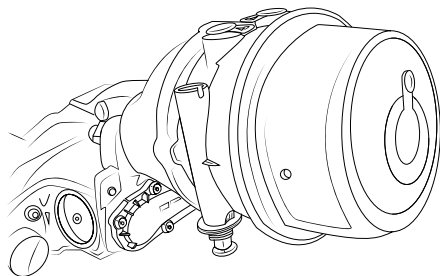


Figure 21 - *Rear-axle parking brake*

To manually release the spring brake:

1. Remove the dust plug from the parking brake chamber.
2. Remove the release nut and washer from the release bolt
3. Slide the release bolt out of the holder.
4. Insert the compression screw assembly through the opening in the rear of the spring chamber.
5. Turn the release bolt a quarter turn clockwise.

Figure 22 - *Rear-axle parking brake release*

- Using a wrench, turn the release bolt assembly nut until the compression spring is 90–95 % caged.
- Check to make sure the pushrod is retracting.

The spring brake is now released mechanically.

If all of the air has been evacuated from the pneumatic system or there is an air leak from a brake actuator, it is possible to release the parking brakes by manually compressing (caging) the spring brake actuator. Before manually releasing parking brakes, chock the wheels to prevent the vehicle from moving.

To move the vehicle when the parking brakes have been manually applied, use a tow truck.



Always chock the wheels before starting this procedure: when a parking brake spring is manually caged, the parking brake will no longer operate.

TOWING THE VEHICLE

Towing the vehicle

Front lift towing under 35 mph (50 km/h)

If the truck cannot be towed from behind, front towing must be limited to 35 mph (50 km/h). In case of emergency, you can tow from the front axle while leaving the rear wheels in contact with the ground. We do not recommend towing the vehicle this way for long distances and you cannot exceed 35 mph (50 km/h).



This vehicle must be towed by lifting the rear. Do not forget to lock the steering wheel.

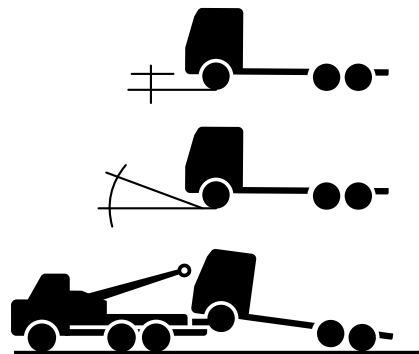


Figure 23 - Front lift towing

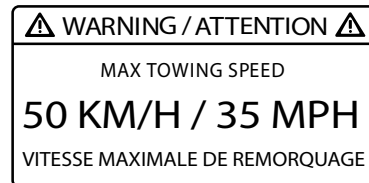


Figure 24 - Towing safety warning

Front towing equipment capacity

A vehicle's maximum towing capacity depends on the steering and towing angle. These are listed in **Table 3** and are calculated for two hitches working simultaneously.

Best practices to install trailer hitch



WARNING



The data in the table above assumes that the constraints are shared equally between the two hitches. Severe damage to the vehicle can occur if the assembly isn't properly secured.

If the vehicle gets stuck or goes off the road, use the towing equipment with extreme caution and observe capacity limits. Damage to the axle, suspension or hitch can occur if the vehicle gets stuck, even if the pulling force at the hitch is less than the maximum capacity.

Direction of the traction exerted	Maximum capacity	
	kg	lb
Straight towards the front	36,287	80,000
Up front in a V	18,144	40,000
Vertical straight	6,622	14,600
Horizontal straight on the side	4,082	9,000
45 degrees up or down	9,072	20,000
45 degrees straight on the side	5,443	12,000

Table 3 - Towing capacity by direction of pull

TOWING THE VEHICLE

For safe towing, we recommend the following:

Use double chains or ropes to distribute the load evenly between both hitches (see either recovery option in **(Figure 25)**).

Never run a single chain or cable through both hitches.

Use a spreader or stabilizer bar to distribute the load between the two hooks **(Figure 25 no. 1)**, or

if there is no spreader bar, hang the main drag chain or cable at least 6 feet from the vehicle **(Figure 25 nos. 2 and 3)**.

Secure the towed vehicle with two additional chains or cables.

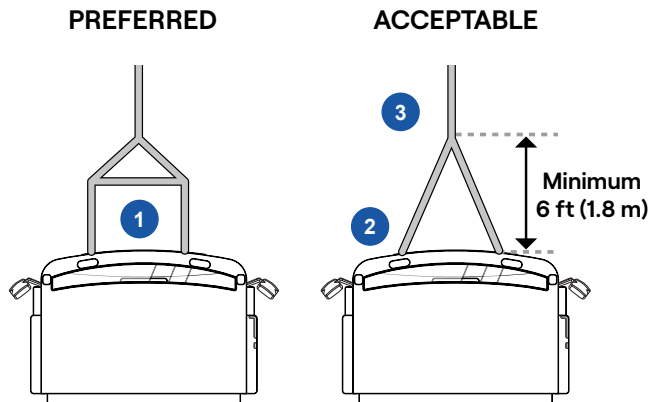


Figure 25 - Recovery options

Removing wheel axle half shaft

When performing front lift towing at a speed over 35 mph (50 km/h), a wheel axle half shaft must be removed from each rear wheel to avoid damaging the electric motor components.

In this case, be sure to cover the shaft opening to avoid contaminating the oil.

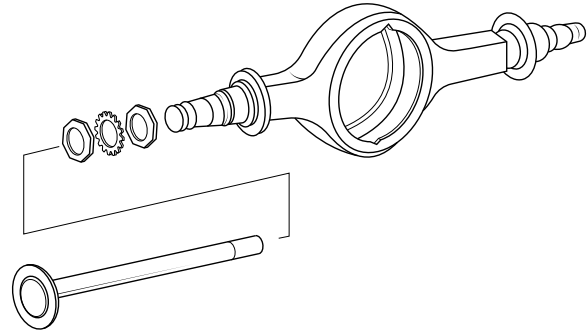


Figure 26 - Wheel axle half shaft

TOWING THE VEHICLE

Tow hooks

To secure the tow hooks to the chassis:

1. Open the hood and, to secure it in the open position, push both arms of the safety mechanism (**Figure 27**).
2. Open the cabin storage compartment located underneath the passenger's seats and locate the tow hooks, the dowels and the cotter pins (**Figure 28**).

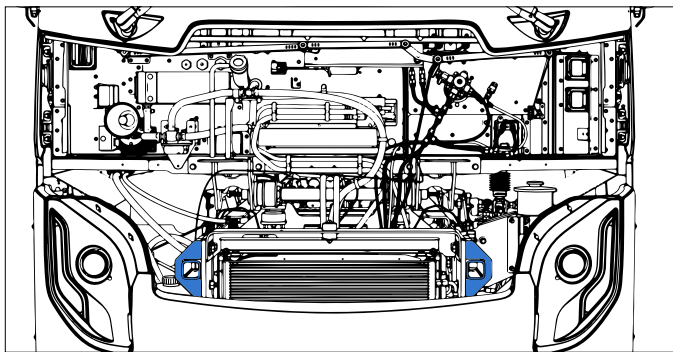


Figure 27 - Cross members

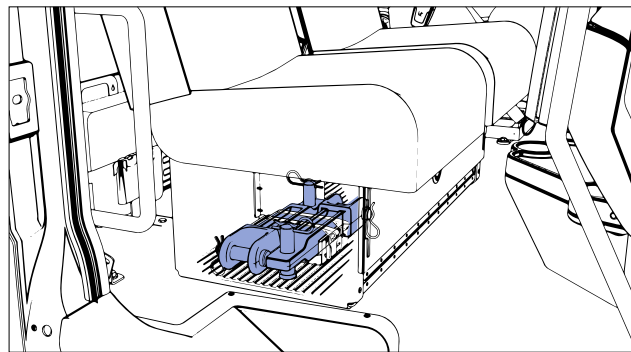


Figure 28 - Cabin's storage compartment under the passenger seat

3. Insert the two hooks on the front cross member. (Figure 29)

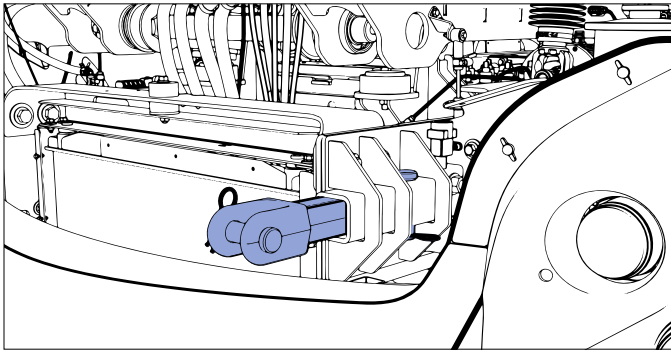


Figure 29 - *Tow hooks inserted on the front crossmember*

4. Secure both tow hooks with a dowel and a cutter pin.

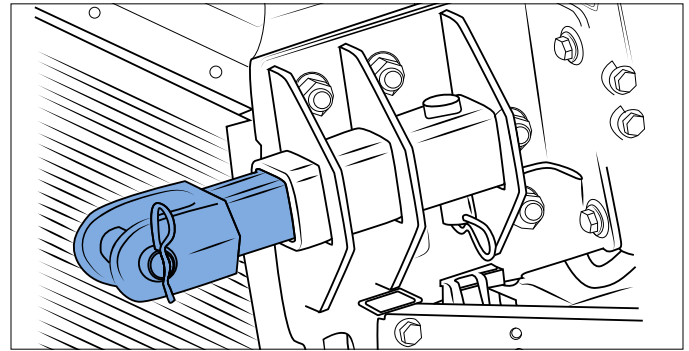


Figure 30 - *Tow hook secured with dowel pins and cutter pins*

NOTES

NOTES



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