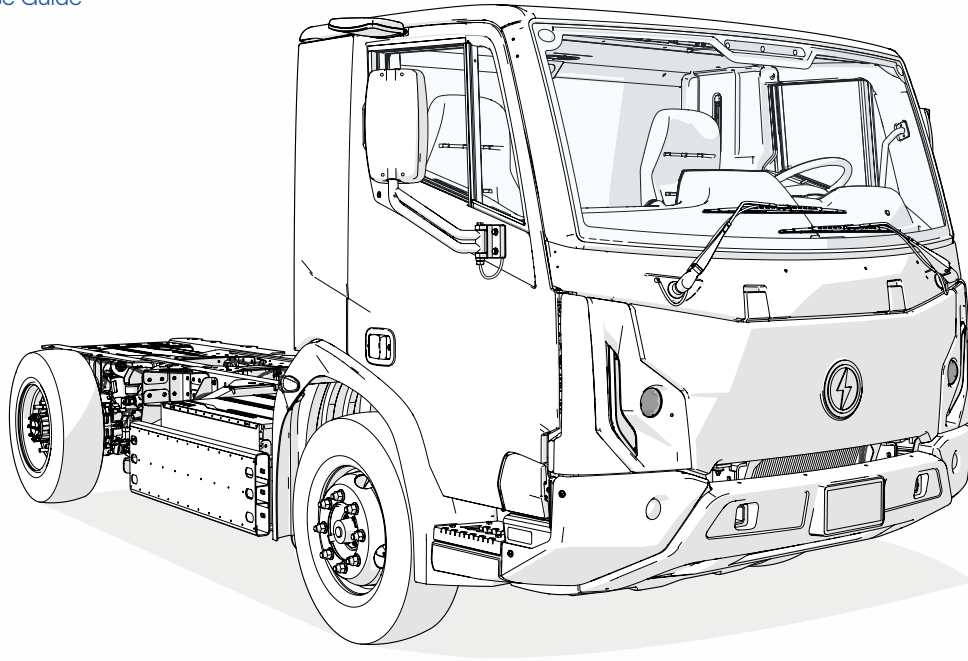




LION ELECTRIC

Emergency Response Guide



This guide is intended for first responders and certified rescuers. High-voltage battery modules are the only energy source for the propulsion of the Lion5. Always act as if the high-voltage system is activated. The high-voltage system might be active even when the vehicle emits no sound.

LION5

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Lion5 Emergency Response Guide — 2024/09/11

VEHICLE IDENTIFICATION	6	Electrical safety disconnect	13
Identification	6	Vehicle deactivation in case of an emergency	15
Logo	6	Safety loop locations	16
Shutting down the vehicle	7	CRASH SENSORS	18
TURNING OFF THE VEHICLE	7	Crash sensor locations	18
High-voltage hold switch (optional)	8	IN CASE OF FIRE OR WATER IMMERSION	20
VEHICLE BATTERIES	9	Fire extinguishment of HV battery modules	20
About the batteries	9	Submerged vehicle	20
Low voltage batteries	9	FLUID RESERVOIRS	21
High voltage	9	Opening the hood	21
Low-voltage AGM batteries	9	Under hood fluid reservoirs	22
High-voltage battery modules	10	Battery coolant reservoir	23
DISABLING THE HIGH-VOLTAGE BATTERY	11	Windshield washer fluid reservoir	24
Orange high-voltage cables	11	Auxiliary heater fuel tank	24
High-voltage equipment warnings	11	LIFTING THE VEHICLE	25
Warning labels	12	Lifting Procedure	25

CONTENT

TOWING THE VEHICLE..... 28

General towing guidelines.....28

Towing by lifting the front axle.....35

HYDRAULIC SUSPENSION..... 39

LiquidSpring suspension.....39

Vehicle ride height for towing.....39

RECOVERY41

Front anchoring equipment capacity..... 41

Safe recovery recommendations:.....42

Rear anchoring points.....43

VEHICLE IDENTIFICATION

Identification

Any Lion electric truck can be identified by the Lion Electric logo located at the center of the hood.

The Lion logo or name can also be found on several components or labels.

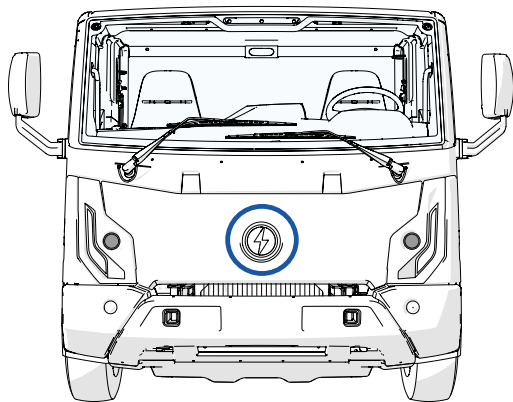


Figure 1 - Front view

Logo

The following logos can be used to identify a Lion truck.



Figure 2 - Lion Electric logo



Figure 3 - Lion5 logo

Shutting down the vehicle

1. Stop the vehicle.
2. Apply the parking brake:
 - Use the lever on the right side of the seat (**Figure 4**)
or (depending on equipped options);
 - Press the (optional) parking brake button on the dashboard (**Figure 5**).

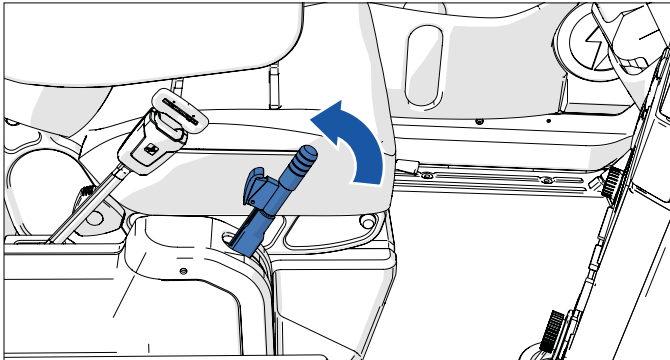


Figure 4 - Parking brake

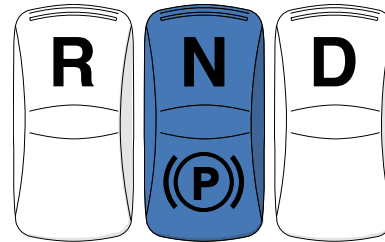


Figure 5 - Drive selector and parking brake button

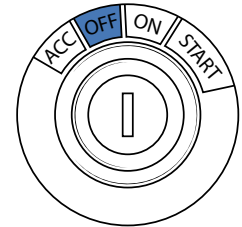


Figure 6 - Start switch

3. Turn the start switch to the "OFF" position (**Figure 6**).
The high-voltage system should now be turned off. If this is not the case, see [High-voltage hold switch](#) on the next page.

TURNING OFF THE VEHICLE

High-voltage hold switch (optional)

If equipped, the high-voltage hold function allows the driver to remove the key from the start switch and exit the vehicle while leaving the high-voltage system active.

To turn off the high-voltage hold, press the top part of the switch (**Figure 7**). When the LED on the switch is unlit, the high-voltage hold is off.

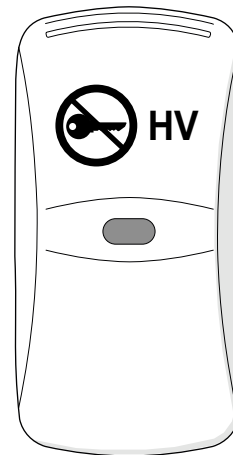


Figure 7 - High-voltage hold switch
(if equipped)

About the batteries

The Lion5 uses two types of batteries, low-voltage and high-voltage.

Low voltage batteries	High voltage
Two 12 V AGM batteries connected in series supply power to various systems, operating at 12 V and 24 V.	Three 60 kWh Lion MD battery modules supply power to the HV electric motor and various HV systems, and recharge the two 12 V batteries.

Table 1 - Battery types

Low-voltage AGM batteries



WARNING



Only AGM-compatible chargers must be used to recharge the Lion5's low-voltage (12 V) AGM batteries.

However, in the case of an emergency, it is possible to provide external power to the low-voltage circuit to start the vehicle using battery booster cables or a battery booster pack.

VEHICLE BATTERIES

High-voltage battery modules

The Lion5 is equipped with three high-voltage battery modules. Two battery modules are located between the front and rear axles and the third one is located between the chassis rails, behind the rear axle.

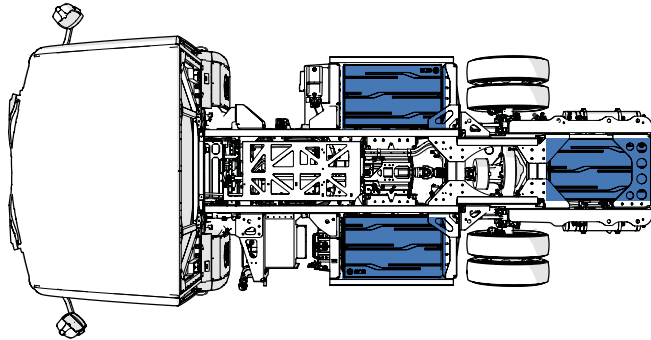


Figure 8 - HV battery modules - Truck

The Lion5 truck has double rear wheels (**Figure 8**) and its passenger side battery module is located close to the rear axle.

The Lion5 ambulance has single rear wheels (**Figure 9**) and its passenger side battery module is located close to the cabin.

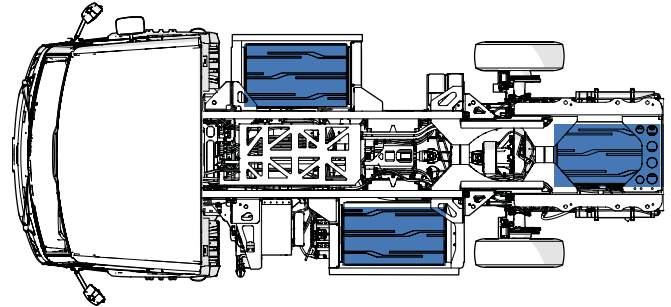


Figure 9 - HV battery modules - Ambulance

Orange high-voltage cables



High-voltage cables are orange. If an accident occurs, do not touch any high-voltage wiring, connectors, or connected components. In case of an emergency, never cut any of the orange high-voltage cables.

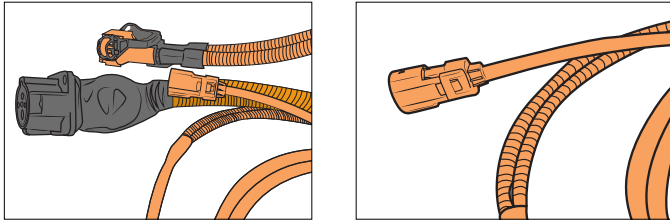
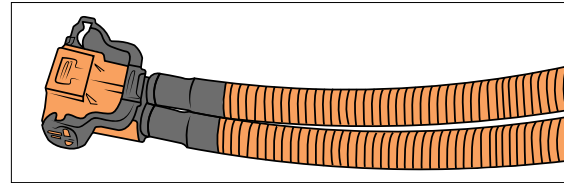


Figure 10 - Examples of orange high-voltage cables

High-voltage equipment warnings

Vehicles containing high-voltage equipment are equipped with warning labels. Pay extra attention to the special characteristics of high-voltage technology.



DISABLING THE HIGH-VOLTAGE BATTERY

Warning labels









Label	Meaning	Label	Meaning
	DO NOT turn on the start switch. Work on high-voltage systems in progress.		CAUTION! High-voltage battery Incorrect handling may cause injury. High voltage Risk of explosion Risk of chemical burns and eye injuries
	CAUTION! Hazardous voltage		CAUTION! High voltage The voltage behind this panel is potentially fatal. Access is restricted to qualified personnel.
	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.		Battery specifications
	HAZARDOUS VOLTAGE! Risk of electrocution. Shut off high-voltage equipment.		Danger! High voltage Disconnect certain components before servicing. Please see the <i>Disabling the high-voltage battery</i> section in this manual.

Table 2 - High-voltage equipment labels

Electrical safety disconnect

The simplest way to deactivate high-voltage circuit is by turning off the low-voltage battery circuit using the battery disconnect switch.

1. Make sure the vehicle is not connected to a charging station.
2. Apply the parking brake.
3. Open the passenger side door.
4. Locate the handle at the bottom of the accessory compartment access panel (**Figure 11**).
5. Pull the handle and open the accessory compartment access panel located at the back of the cabin on the passenger side of the truck.
6. Turn the battery disconnect switch to the "OFF" position (**Figure 12**).

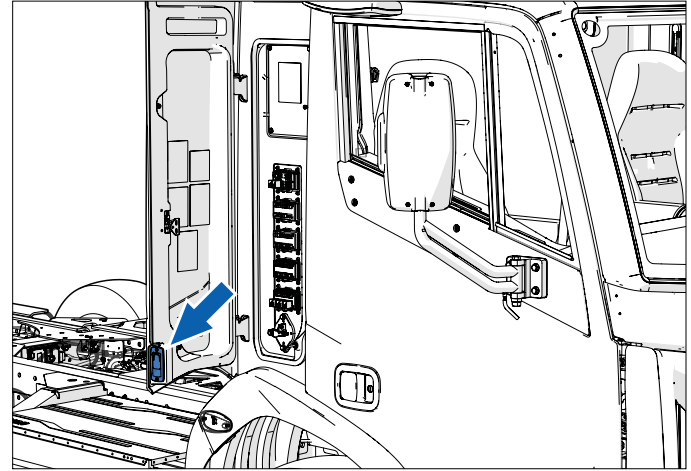


Figure 11 - Access panel handle

DISABLING THE HIGH-VOLTAGE BATTERY

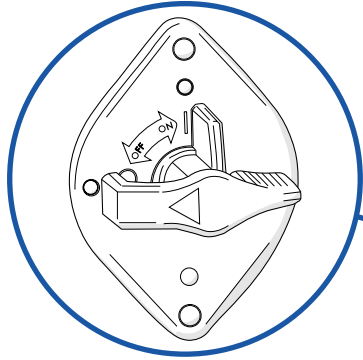
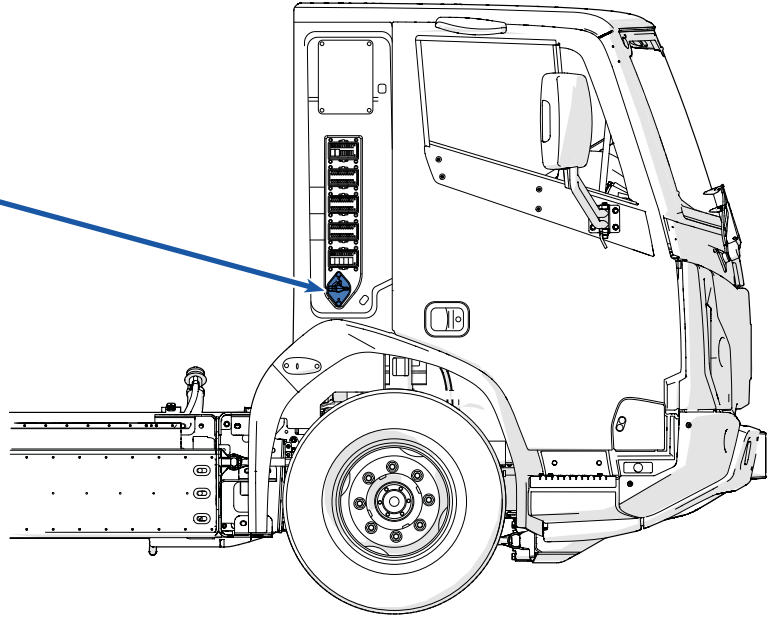


Figure 12 - Battery disconnect switch



Vehicle deactivation in case of an emergency

The vehicle is equipped with two safety loops (**Figure 13**) that deactivate the high voltage circuit. They are a safety feature that should be used for emergency purposes only.

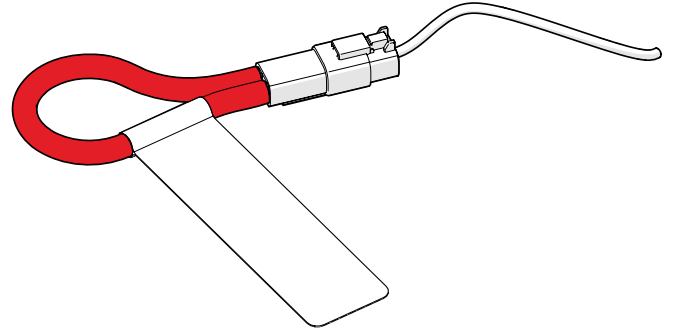


Figure 13 - Safety loop

DISABLING THE HIGH-VOLTAGE BATTERY

Safety loop locations

One safety loop is located at the front of the vehicle under the hood (**Figure 14**). The second one is located at the rear of the vehicle's driver side frame rail (**Figure 15**).

In an emergency, disconnect the safety loop or cut the wire in two places to prevent accidental reconnection.

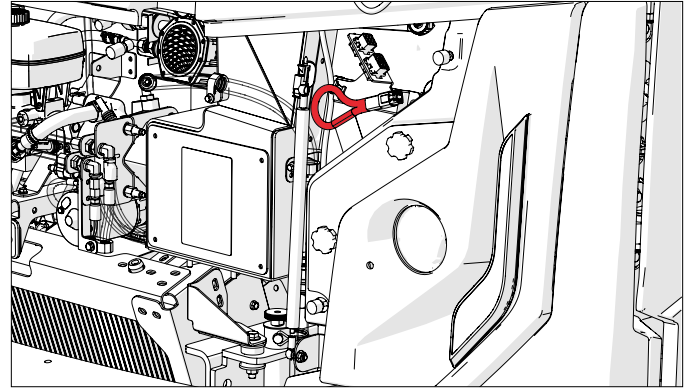


Figure 14 - Front safety loop

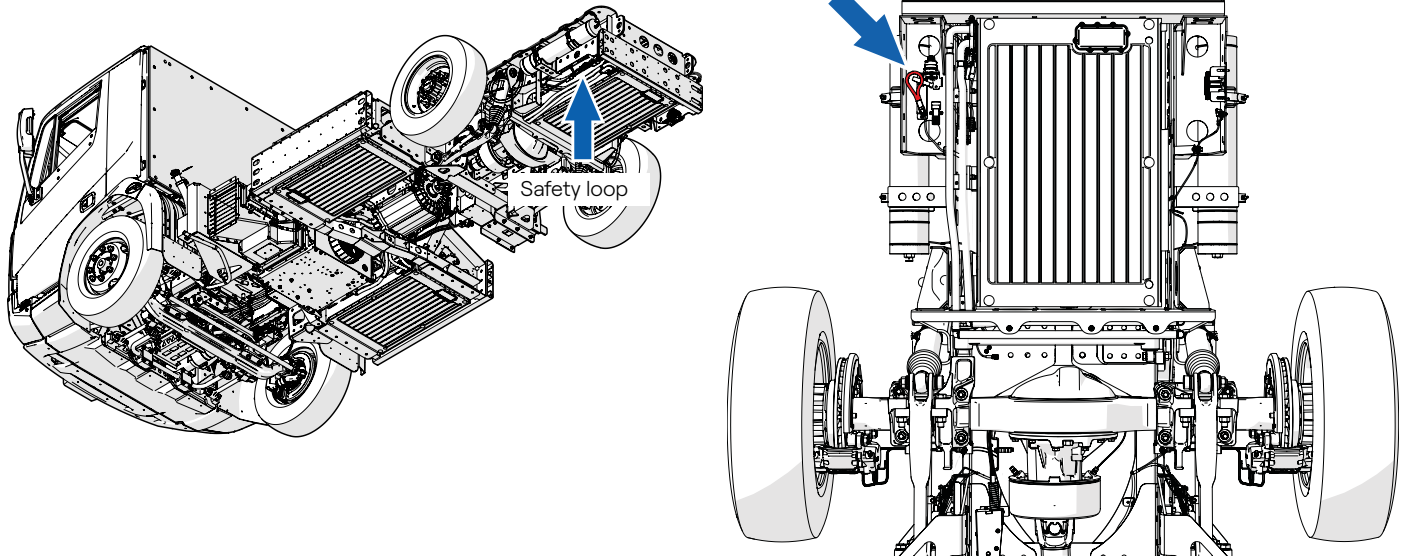


Figure 15 - Rear safety loop

CRASH SENSORS

Crash sensor locations

The vehicle is equipped with three crash sensors, also known as impact detectors, that instantly shut down the high-voltage circuit in case of an impact.

If one of the crash sensors is triggered, the high-voltage circuit is deactivated and locked out. It cannot be re-activated without using the proper equipment to reset the crash detection circuit.

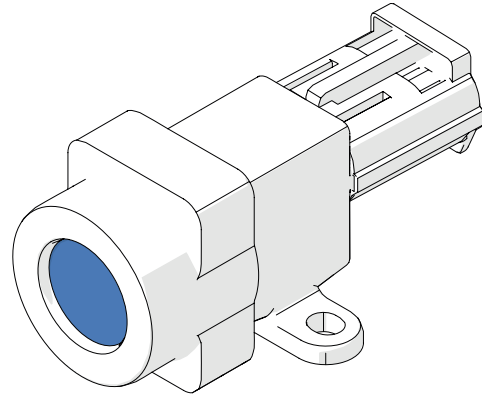


Figure 16 - *Crash sensor*

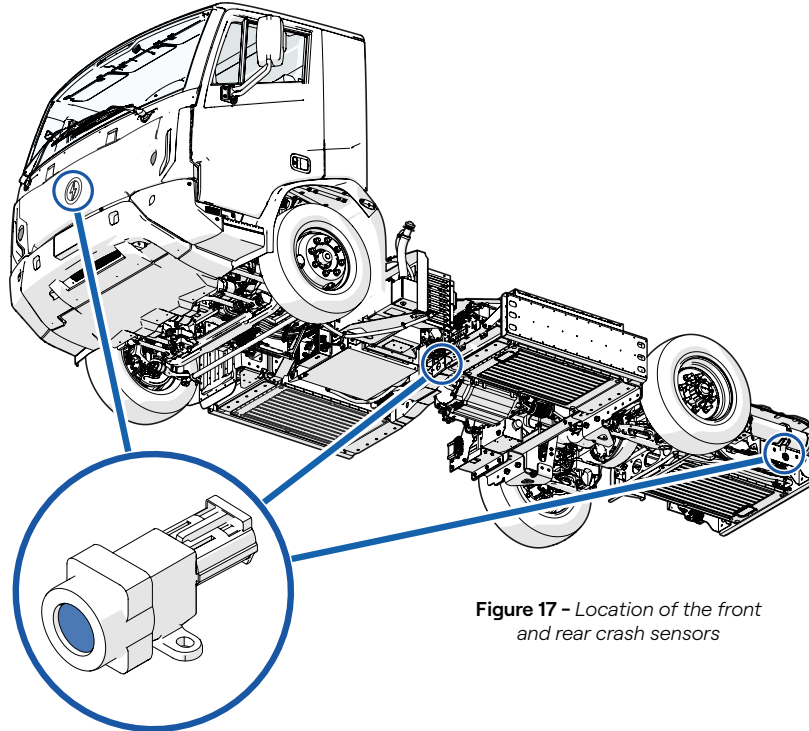


Figure 17 - Location of the front and rear crash sensors

IN CASE OF FIRE OR WATER IMMERSION

Fire extinguishment of HV battery modules

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

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

Depending on the availability, other extinguishing agents (fire extinguishing foam or 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 is a fire that is not emerging from the high-voltage battery, it can be treated using typical vehicle firefighting procedures.

Submerged vehicle

A Lion5 that is submerged in water will not present the risk of electrocution since the high-voltage battery modules are isolated from the vehicle chassis.

Treat a partially or fully submerged Lion5 as any other vehicle and use the appropriate personal protective equipment (PPE).

Once the vehicle is removed from the water, disable the high voltage using the procedure listed in this manual ([See Disabling the high-Voltage battery section](#)).



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.

Opening the hood

The Lion5 has several reservoirs containing various liquids. Three reservoirs are located under the hood, and three are located outside the cab, on the driver's side.

Some components and fluid reservoirs are accessible under the hood.

To open the hood:

1. Stand in front of the vehicle and locate the hood latch under the bottom edge of the hood.
2. Pull the latch levers.
3. Slowly lift the hood until fully open.

The hood will remain open.

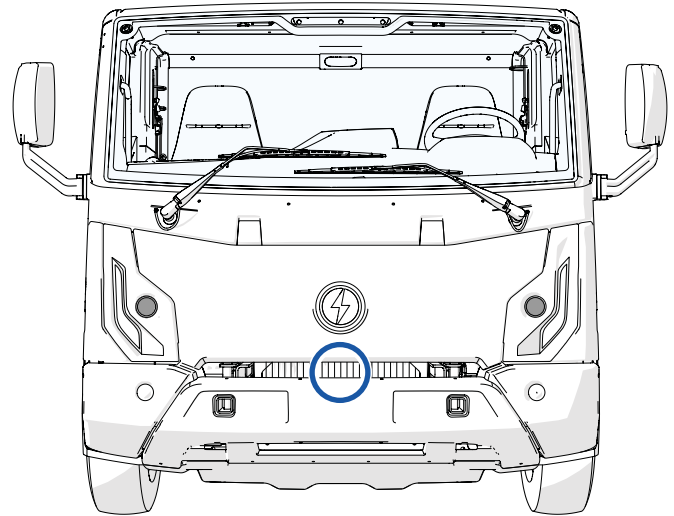


Figure 18 - Hood latch location

FLUID RESERVOIRS

Under hood fluid reservoirs

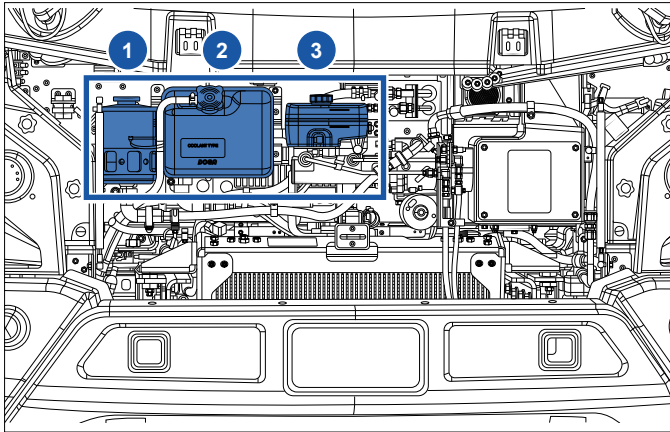


Figure 19 – Fluid reservoirs

N°	Description
1	Power steering fluid reservoir (flammable)
2	Powertrain coolant fluid reservoir (hot liquid)
3	Brake fluid reservoir (flammable)

Table 3 – Fluid reservoir locations



WARNING

The Lion5 is equipped with Lion MD battery modules. The battery modules temperature is regulated by the Battery Thermal Management System (BTMS) that uses a special low-conductivity fluid. This fluid is pale blue in color.

Battery coolant reservoir

1. Open the driver's door and locate the black door handle at the bottom of the access panel (**Figure 20**).
2. Pull the handle to open the access panel.
3. The battery thermal management system (BTMS) reservoir (**Figure 21**) contains a special low-conductivity coolant fluid (light blue in color).

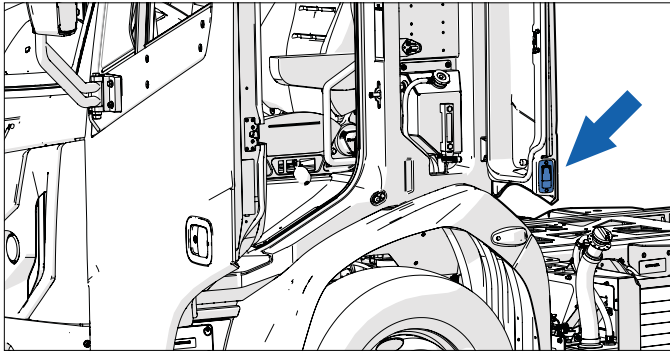


Figure 20 - Access panel handle

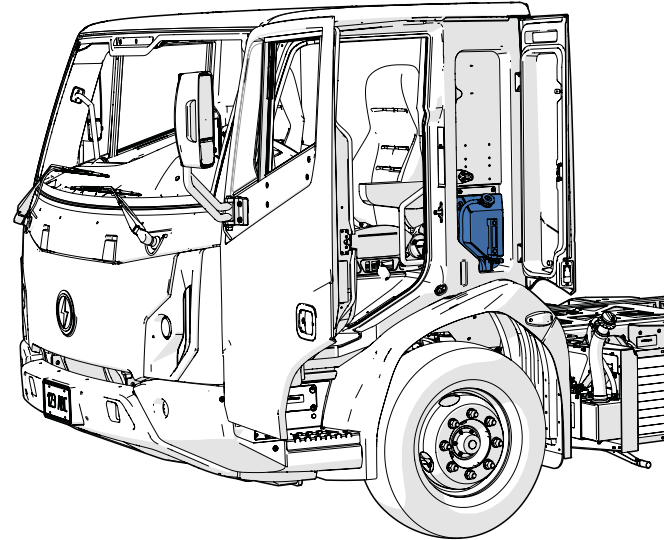


Figure 21 - BTMS reservoir

FLUID RESERVOIRS

Windshield washer fluid reservoir

- The windshield washer fluid reservoir is located behind the bottom of the driver's side door next to the cab step (Figure 22).

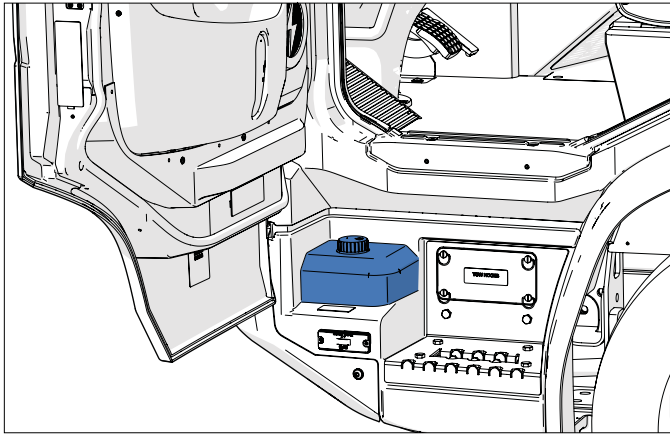


Figure 22 - Windshield washer fluid reservoir

Auxiliary heater fuel tank

The Lion5 can be equipped with an optional auxiliary gasoline-burning heater. The fuel tank is located behind the driver side front wheel (Figure 23).

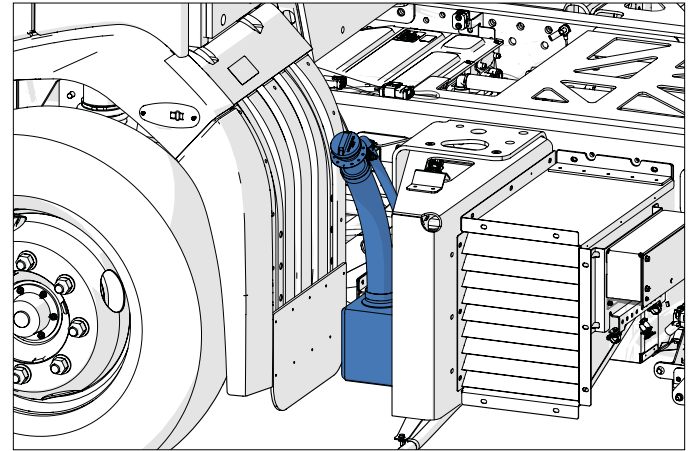


Figure 23 - Auxiliary heater fuel tank

Lifting Procedure

Proper lifting procedures and basic safety measures must be followed to ensure the safety of personnel while working under the vehicle. Always check the conformity of any lifting equipment prior to use.

Ensure that the lifting equipment is of sufficient strength to handle the vehicle, and that the surface beneath the lifting equipment provides the necessary support to bear the weight of the vehicle concentrated on the footprint of the jack. Never move under a vehicle supported only by a hydraulic jack.

1. Park the vehicle on a flat, level surface capable of bearing the load of the lifting equipment.
2. Chock the wheels in both directions.
3. Use only certified jacks and stands of sufficient capacity to support the vehicle. Following the jack manufacturer's recommendations, place the jack securely at the lifting points illustrated in **Figure 24** and **Figure 25**.
4. Lift the vehicle only to the height necessary to service.



The Lion5 hydraulic suspension system can modify the truck ride height, creating potential pinch points between suspension components and chassis.

Always support the chassis on proper stands.

Before performing any work beneath the vehicle, always deactivate the vehicle's hydraulic suspension system by disconnecting the suspension's safety connector behind the passenger seat (see Figure 35).

LIFTING THE VEHICLE

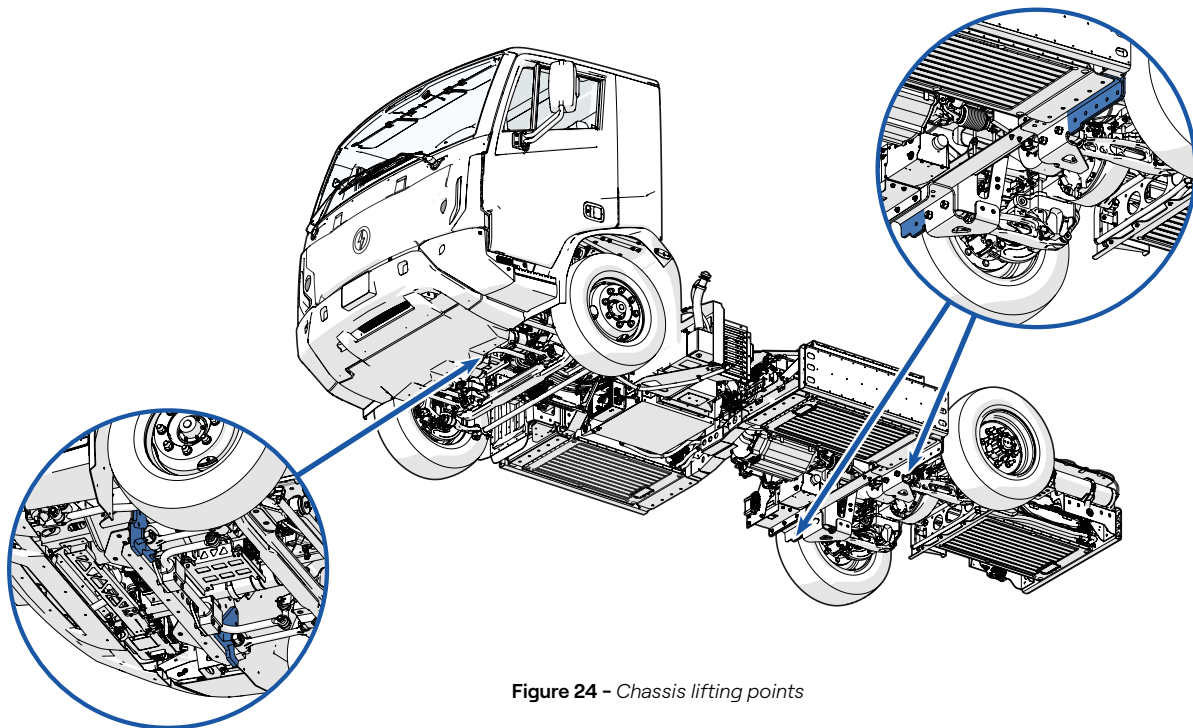


Figure 24 - Chassis lifting points

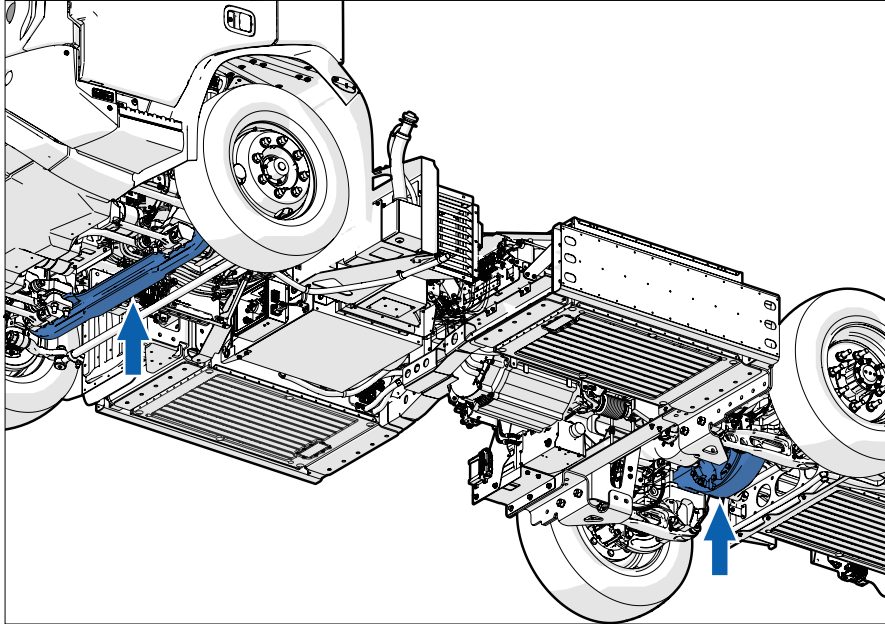


Figure 25 - Axle lifting points

TOWING THE VEHICLE

General towing guidelines

- If the hydraulic suspension is non-functional and the distance between front tire and fender is less than 5 in (13 cm) (**Figure 26**), a flatbed platform towing is required.
- If the hydraulic suspension is non-functional and the distance between front tire and fender is 5 in (13 cm) or more (**Figure 26**), towing by the front axle is allowed. Confirm there is at least 6.75 in (17 cm) between battery bracket and ground (**Figure 27**).

If the low-voltage circuit (12 V / 24 V) is available and the hydraulic suspension system is functional, disable the Auto mode and select Normal or High mode ([see Hydraulic suspension section](#)), and proceed to tow by the front axle.

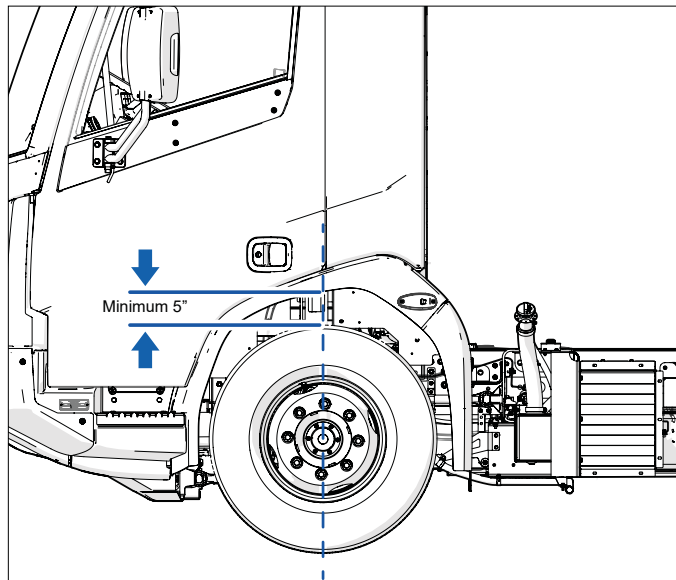


Figure 26 - Minimum front ride height for towing

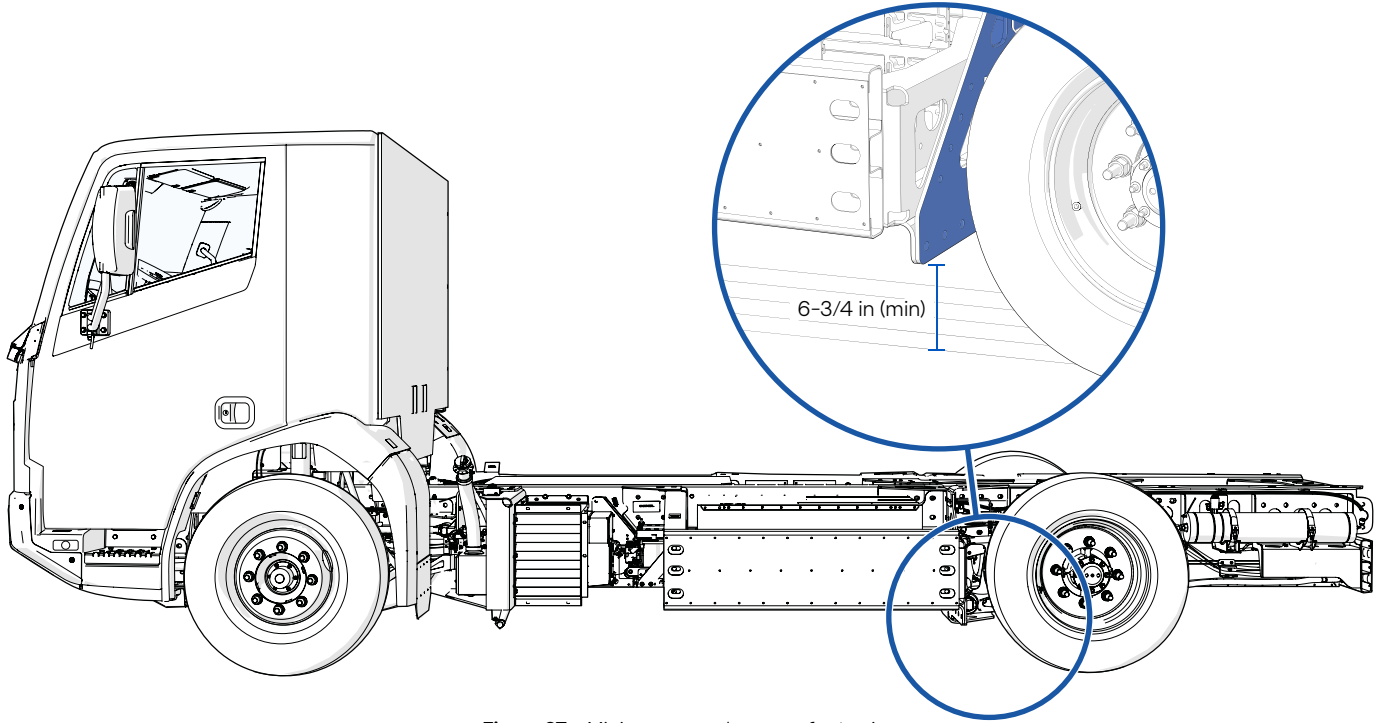


Figure 27 - Minimum rear clearance for towing

TOWING THE VEHICLE

- If need be, an auxiliary 24 V supply can be applied to the two electrical terminals (optional equipment) located at the top of the accessory compartment (**Figure 28**) on the passenger side of the truck.

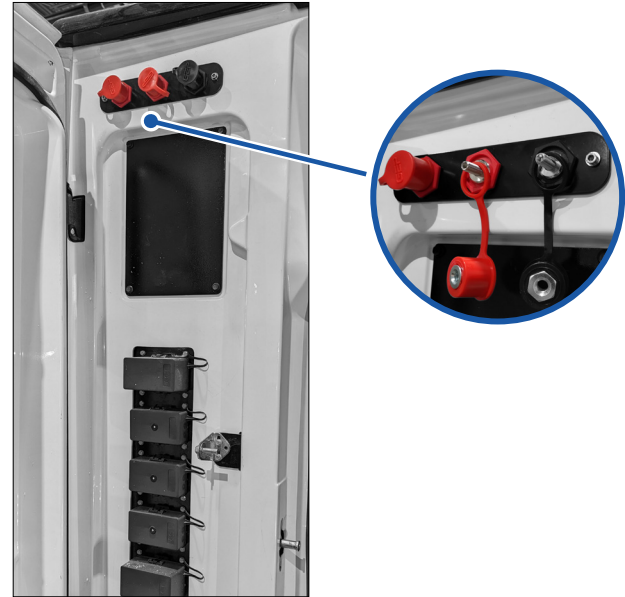


Figure 28 - Low-voltage remote battery posts
(if equipped)

Towing the vehicle



The Lion5 preferred method of towing is by placing the truck on a flatbed or platform trailer (Figure 29).

It can also be towed by lifting the front axle with the rear wheels on the ground if the rear half-shafts are removed.

The Lion5 can also be towed with the rear half-shafts in place, but speed shall not exceed 15 mph (20 km/h) and distance shall not exceed 6 miles (10 km). Failing to follow the limits stated above may result in high-voltage hazards such as electrocution or electrical fire.



If the Lion5 is fitted with an Automatic Parking Brake and it is not possible to deactivate it by selecting "Towing" mode on the multifunction display, then the rear axle half-shafts must be removed and the vehicle towed by the front.

DO NOT TOW THE LION5 FROM THE REAR.

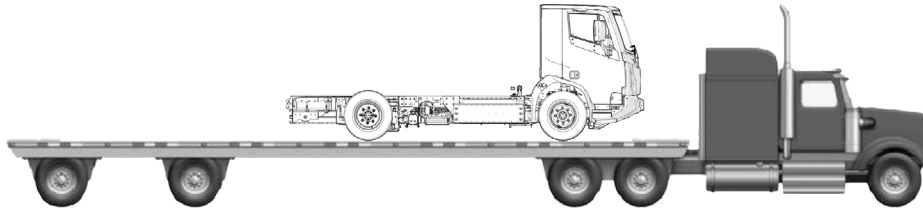


Figure 29 - Flatbed towing

Front tow hooks

Two Lion5 removable front tow hooks are stored in a compartment located above the step on the operator's side. Open this compartment to retrieve the tow hooks (**Figure 30**).

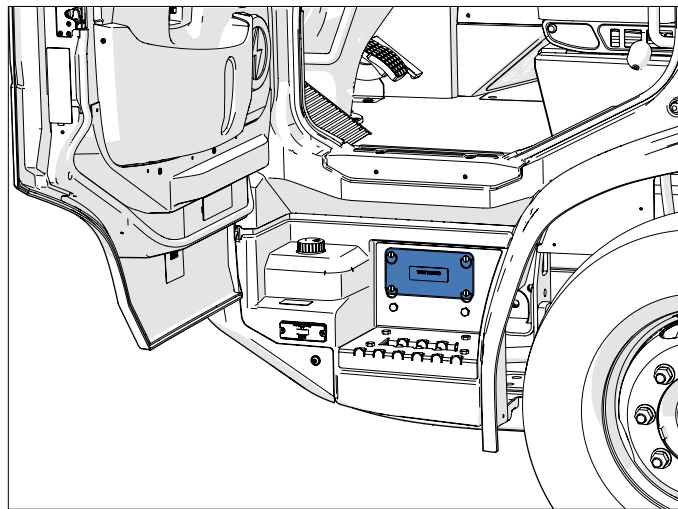


Figure 30 - Tow hook compartment

Installing front tow hooks:

1. Open the hood and remove the lock pins that hold the locking dowels in their receptacles (**Figure 31 no. 1**).
2. Lift the locking dowels (**Figure 31 no. 2**).

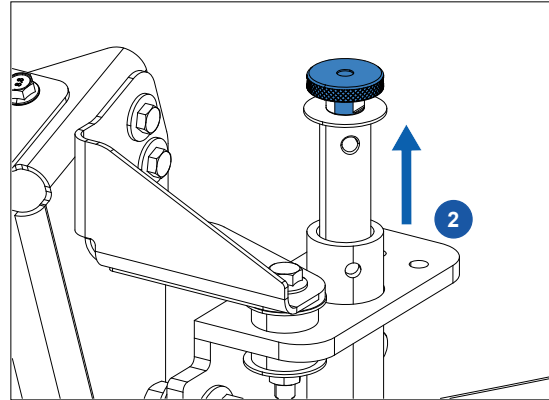
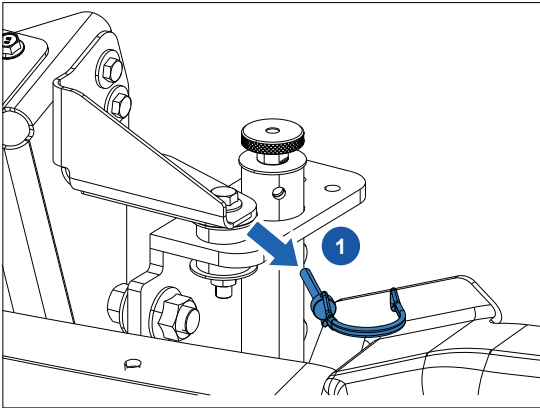


Figure 31 - Tow hook locking dowel with lock pin

TOWING THE VEHICLE

3. Insert the tow hooks into the openings of the bumper cover (Figure 32).
4. Lower the locking dowels in their receptacle (Figure 33).

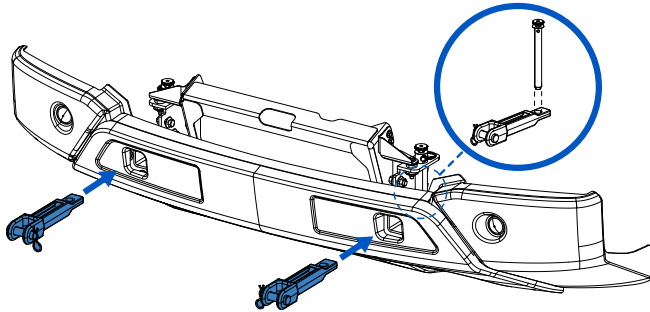


Figure 32 - Tow hooks and locking dowel

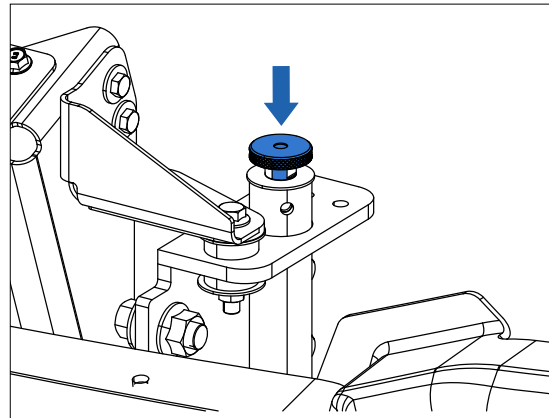


Figure 33 - Tow hook locking dowel

5. Replace the lock pins on the locking dowels (**Figure 34**).

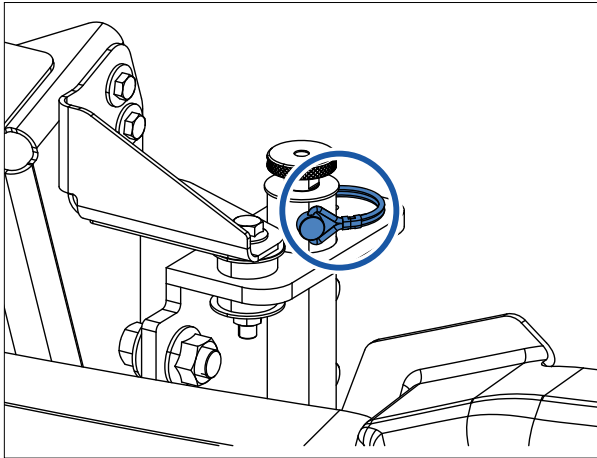


Figure 34 - Locking pins

Towing by lifting the front axle

1. Chock the rear wheels.
2. Release the parking brake.
3. Turn on the vehicle and set the vehicle ride height to **<< Normal >>** or **<< High >>** using the suspension height control switches (see section on [Hydraulic Suspension](#)). Provide an auxiliary 24 V supply if need be (**Figure 28**).

TOWING THE VEHICLE

4. Remove the hydraulic suspension system safety connector, which is located under an access panel behind the passenger seat (**Figure 35**).

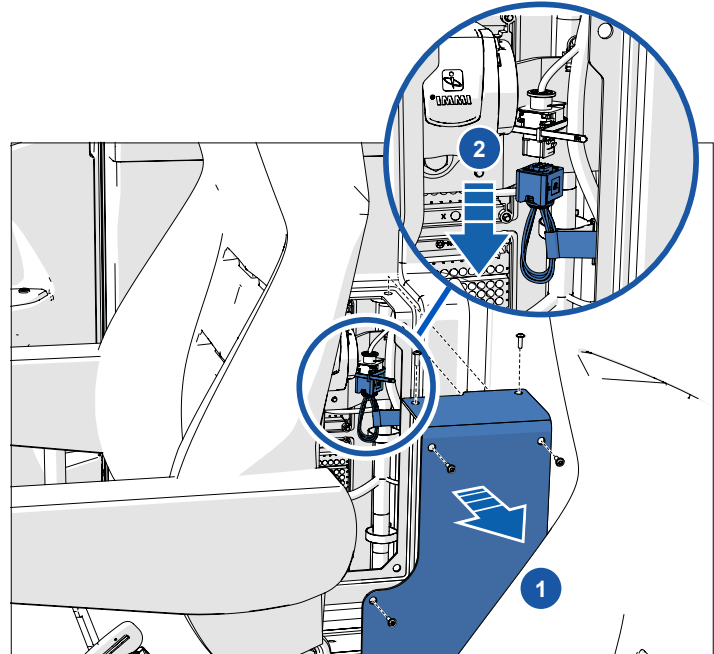


Figure 35 - LiquidSpring suspension safety disable connector

5. Raise the vehicle by the front two hooks until the front wheels are at least 6 in (15 cm) off the ground (**Figure 36**).
6. Drop the front wheels on blocks (or place stands under the jacking points on the chassis). You can now insert the tow boom under the front bumper.
7. Raise the vehicle by lifting the front axle (**Figure 37**).

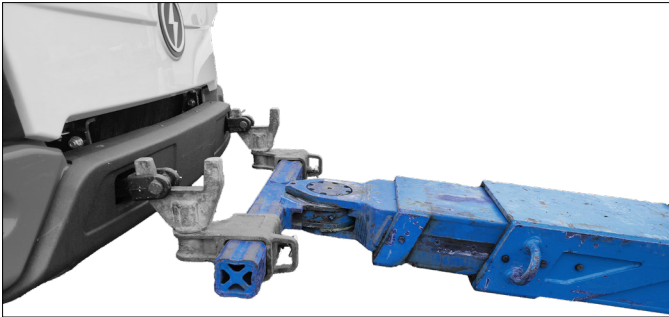


Figure 36 - Lifting by the front hooks



Figure 37 - Raising the front axle

TOWING THE VEHICLE

8. Remove the rear wheel half-shafts (**Figure 38**).

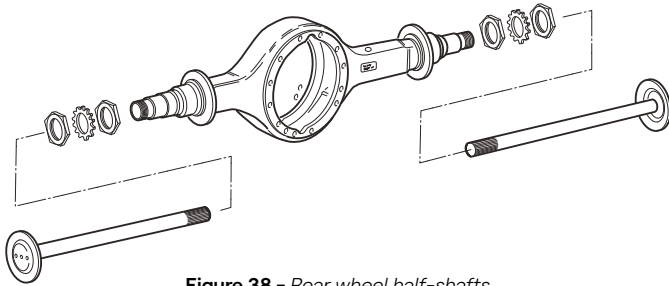


Figure 38 - Rear wheel half-shafts

9. Turn the battery disconnect switch to "OFF" (**Figure 39**).

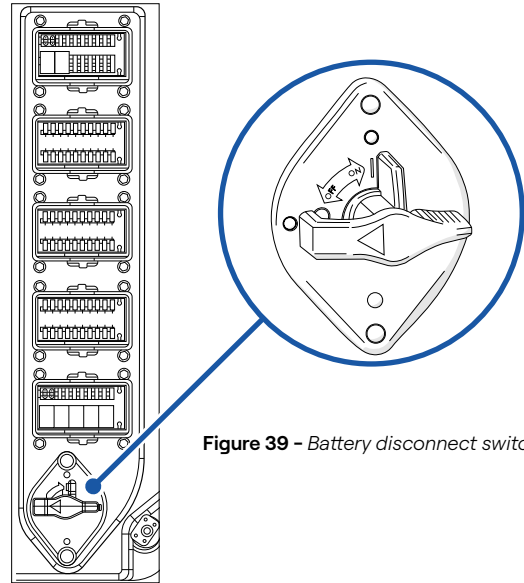


Figure 39 - Battery disconnect switch

LiquidSpring suspension

The Lion5 is equipped with a hydraulic suspension system. Vehicle ride height is adjustable and controlled by switches located on the dashboard. Three ride heights can be set: normal, low or high.

To raise the front of the vehicle, ensure the vehicle is turned on and use the front suspension control switch (**Figure 40**).

To raise the rear of the vehicle, ensure the vehicle is turned on and use the rear suspension control switch (**Figure 41**).

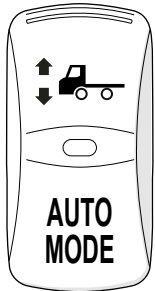


Figure 40 - Front suspension height control

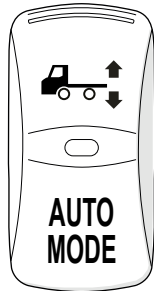


Figure 41 - Rear suspension height control

Vehicle ride height for towing

The ride height must be set to << **Normal** >> or << **High** >> before towing can take place.

Switch LED color

The LED light in the center of the switches (**Figure 42**) indicates the actual vehicle ride height or if the **Auto mode** is activated.

LED Off: Suspension is at its << **Normal** >> ride height. Towing is permitted.

Red: Suspension is at its << **High** >> ride height. Towing is permitted.

Green: Suspension is at its << **Low** >> ride height. Towing is prohibited. Raise the suspension or use a flatbed.

Amber: **Auto mode** is active. Towing is prohibited. Return ride height to << **Normal** >> or << **High** >>.

HYDRAULIC SUSPENSION

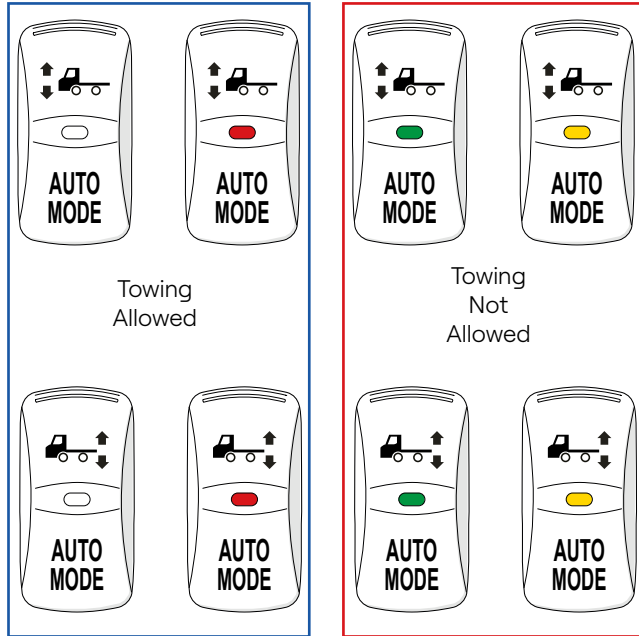


Figure 42 - Switch LED color

To select the **Normal** vehicle ride height when the LED is green or amber:

- Press the top part of the switch once. The LED on the switch will not be illuminated.

To select the **High** vehicle ride height:

- Press and hold the top part of the switch for 5 seconds. The LED on the switch will be red and the vehicle will rise to the maximum ride height.

The automatic mode (amber LED) lowers the vehicle ride height when a door is opened. Once that door is closed, the vehicle returns to its normal ride height.

To deactivate the automatic mode, press the top part of the switch once.

Front anchoring equipment capacity

The maximum pulling capacity of the front tow hooks depends on the direction of the pulling force. See **Table 4** for the maximum calculated capacity allowed for two pulling points working simultaneously.



WARNING



The data in the table above assumes that the constraints are shared equally between the two towing points. 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 respect capacity limits. Damage to axles, suspension, or chassis can occur even if the force at the pulling points is less than the maximum capacity.

Direction of the traction exerted	Maximum capacity	
	kg	lb
Straight towards the front or the rear	11 600	25,500
Up front in a V	not allowed	
Vertical straight (front only)	7 484	16,500
20 degrees towards the side (front or rear)	11 600	25,500
20 degrees upward or downward (front or rear)	11 600	25,500

Table 4 - Tow hooks capacity by pull direction

Safe recovery recommendations:

- Use double chains or cables to distribute the load evenly between both tow hooks.
- Never run a single chain or cable passing through both tow hooks.
- Use a spreader bar to distribute the load between the tow hooks (**Figure 43**).
- Secure the recovered vehicle with two additional chains or cables.

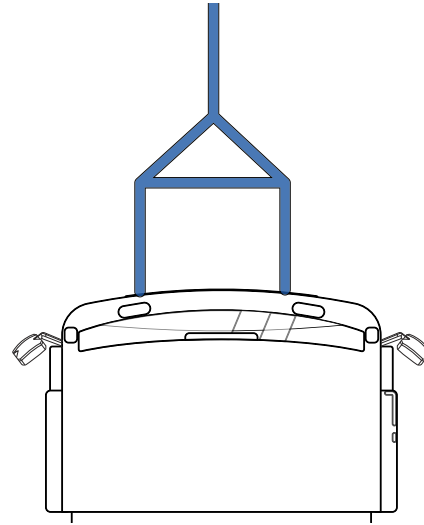


Figure 43 – Spreader bar

Rear anchoring points

The truck is equipped with two anchoring lugs at the rear end of the chassis (**Figure 44**). These are to be used only to pull or recover the vehicle. They are not lifting points.

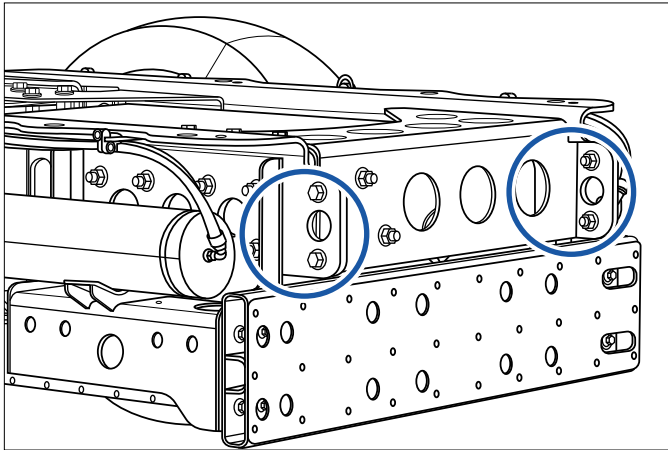


Figure 44 - Rear anchoring lugs



NOTES



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