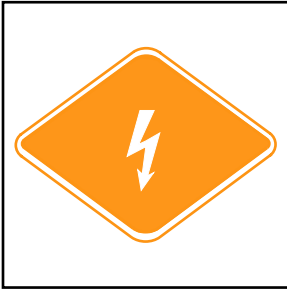


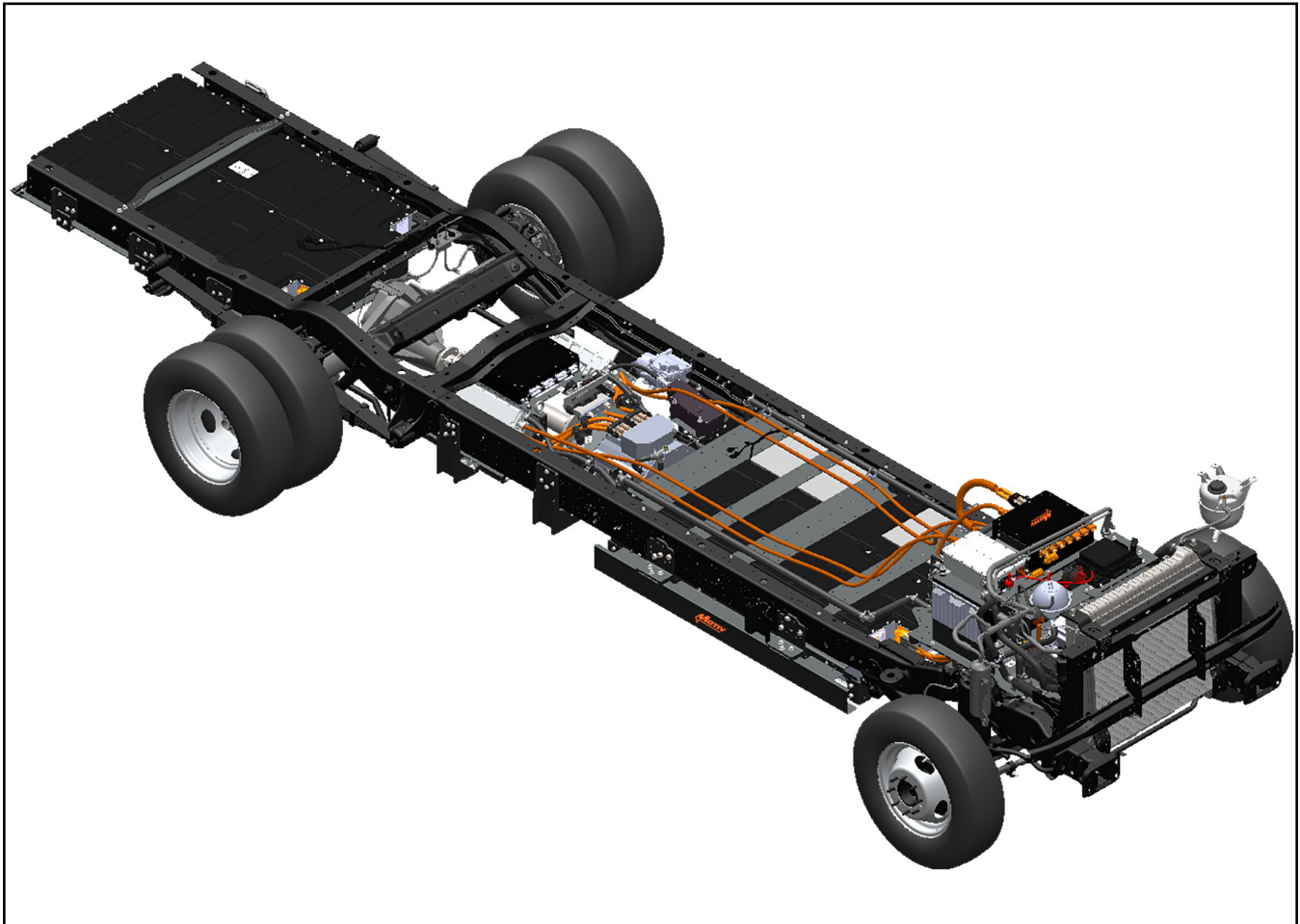
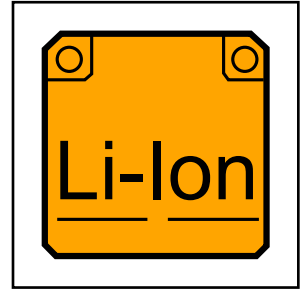


# INFORMATION FOR FIRST AND SECOND RESPONDERS

## EMERGENCY RESPONSE GUIDE



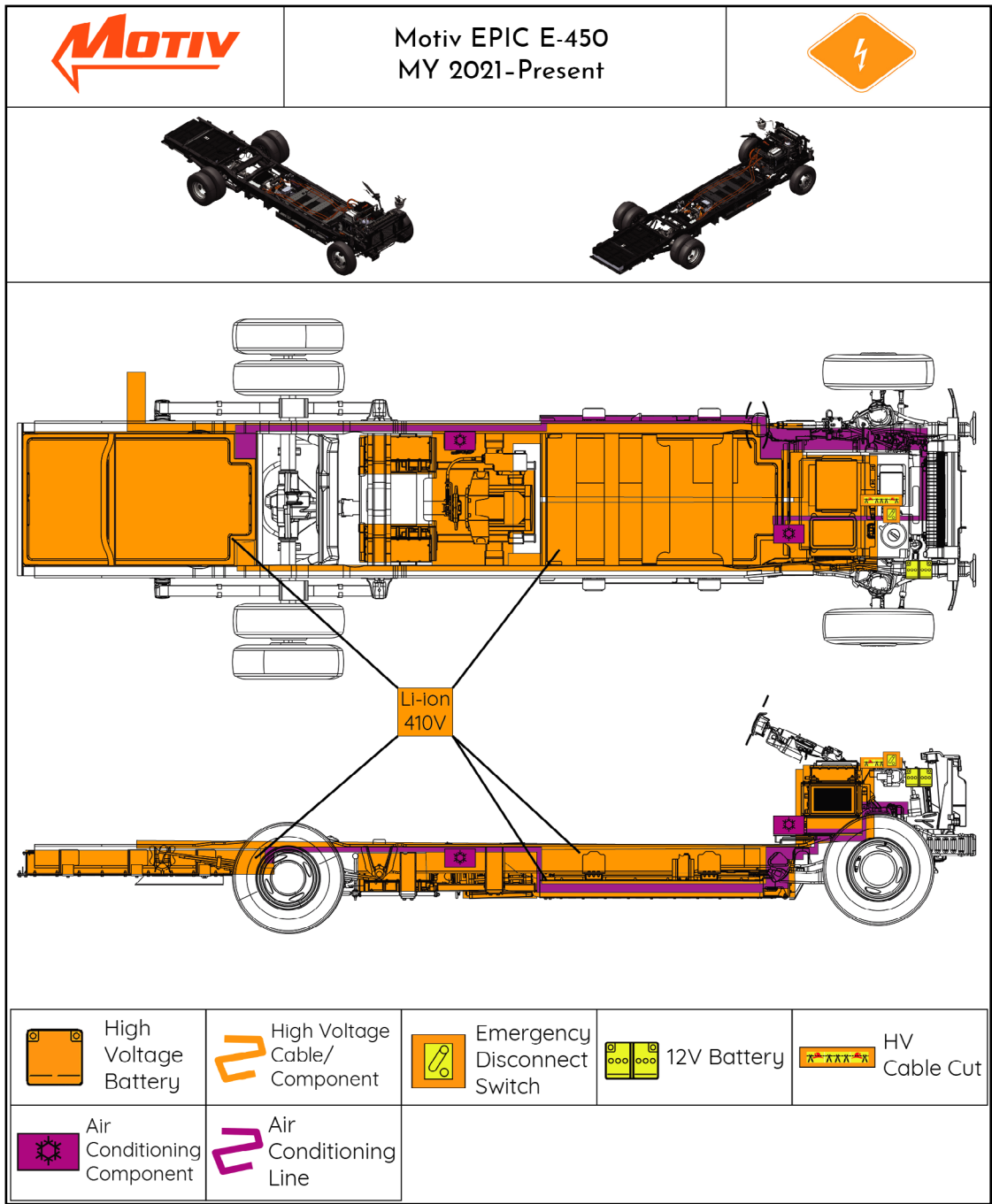
MOTIV  
EPIC 4  
ELECTRIC



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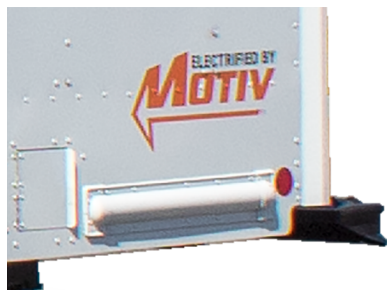
# 0. Rescue sheet



# 1. Identification / recognition

## VEHICLE BADGING

Motiv badging is not present on all vehicles. Badging inclusion is at the discretion of the initial purchaser of the completed vehicle. When present, Motiv badging may be located on the front of the vehicle or on both sides of the cab or along the length of the body. Motiv badging may be in the format of the examples shown below.



## Vehicle Labeling

Motiv EPIC 4 vehicles can be identified by the Intermediate Vehicle Manufacturer (IVM) label applied to the driver side door frame and Vehicle Emission Certification Information (VECI) label applied under the hood.

|             |   |
|-------------|---|
| SN: MVNXXXX | INTERMEDIATE MFR BY MOTIV POWER SYSTEMS<br>VIN: XXXXXXXXXXXXXXXX<br>ALL MODIFICATIONS COMPLY WITH APPLICABLE<br>FEDERAL SAFETY STANDARDS<br><br>DATE OF MANUFACTURE MM/YYYY<br>GVWR: XXXX POUNDS (XXXXX KG) |
|-------------|---|

| VEHICLE EMISSION CONTROL INFORMATION   |            |              |               |
|--|------------|--------------|---------------|
| Manufactured by Motiv Power Systems (MPW)  |            |              |               |
| MFG Date   | MM/YYYY    | GVWR         | 14,500 LBS    |
| Veh Model  | EPIC E-450 | Veh Model Yr | 2022          |
| THIS VEHICLE COMPLIES WITH U.S. EPA AND CALIFORNIA REGULATION FOR MODEL YEAR 2023 HEAVY-DUTY CLASS 4 VOCATIONAL VEHICLES.<br>REGULATORY SUBCATEGORY: LIGHT-HDV/OTTO/MULTI-PURPOSE.<br>THIS IS AN ELECTRIC VEHICLE. NO FUEL-FIRED HEATERS MAY BE INSTALLED. |            |              |               |
| Emission Control Systems   | TPMS       | Veh Family # | IPMPW2VOCVC04 |

| VEHICLE EMISSION CONTROL INFORMATION   |         |              |               |
|--|---------|--------------|---------------|
| Manufactured by Motiv Power Systems (MPW)  |         |              |               |
| MFG Date   | MM/YYYY | GVWR         | 14,500 LBS    |
| Veh Model  | EPIC 4  | Veh Model Yr | 2022          |
| THIS VEHICLE COMPLIES WITH U.S. EPA AND CALIFORNIA REGULATION FOR MODEL YEAR 2023 HEAVY-DUTY CLASS 4 VOCATIONAL VEHICLES.<br>REGULATORY SUBCATEGORY: LIGHT-HDV/OTTO/MULTI-PURPOSE.<br>THIS IS AN ELECTRIC VEHICLE. NO FUEL-FIRED HEATERS MAY BE INSTALLED. |         |              |               |
| Emission Control Systems   | TPMS    | Veh Family # | IPMPW2VOCVC04 |

## Under the Hood

Motiv EPIC 4 vehicles can be identified by the Motiv electronics package located under the hood and Motiv logo that may be visible on components under the hood on some vehicle body configurations.



## 2. Immobilization / stabilization / lifting

### Put Vehicle Into Park and Chock Wheels

If necessary to park the vehicle:

1. Turn the key switch to the ON position.
2. Apply and hold the brake pedal.
3. Press the park "P" button on the shift mode selector to enter Park.
4. Apply the foot operated parking brake.
5. Turn the key switch to the OFF position and remove the key.
6. Chock the wheels.



### Stabilization/Lift Points



**WARNING** Use caution to avoid damaging the high voltage battery while stabilizing/lifting the vehicle.



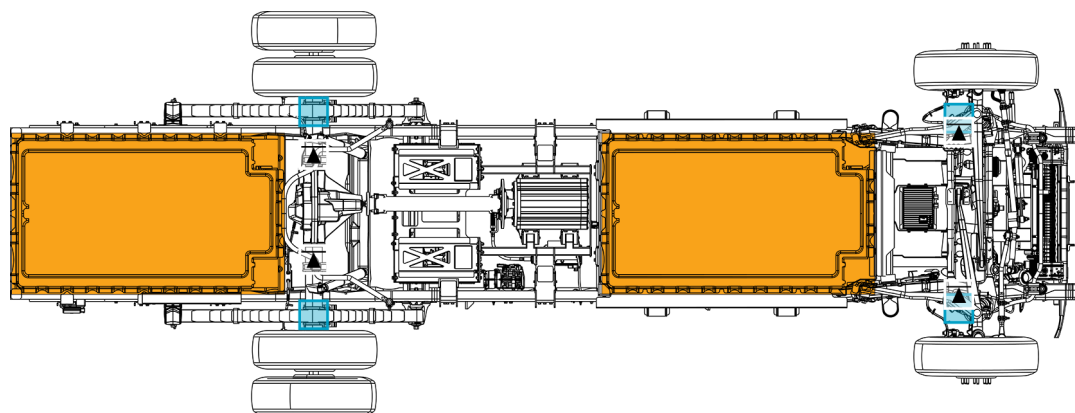
**WARNING** Do not use the high voltage battery to lift or stabilize the vehicle.



**WARNING** Use caution to avoid coming in contact with the high voltage battery or other high voltage components.



**WARNING** Only first responders who are trained and equipped at the technician level per the National Fire Protection Association (NFPA) and are familiar with the lift points should be lifting or manipulating the vehicle.



High Voltage Component

Jacking Points

Lifting Points

### 3. Disable direct hazards / safety regulations

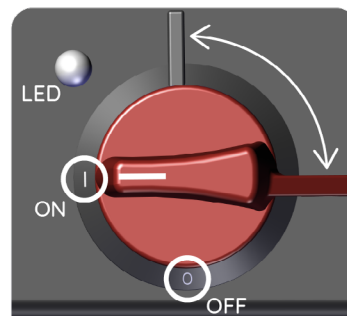
#### High Voltage Emergency Cut-Off Switch - Preferred Disconnect Method



The red emergency cut-off switch is also the main power switch. This switch disconnects the 12V supply from the high voltage and control components, thereby halting high voltage power processing. When this happens, the high voltage battery controllers disconnect the batteries internally, isolating high voltage safely within the batteries.

It takes up to three (3) minutes after shut-off for the energy to dissipate to a safe voltage level.

Turning off the emergency cut-off switch does not disable the 12V battery providing power to the accessory systems. The 12V battery negative cable must be double cut in order to disable the 12V battery system.



#### Cable Cut - Alternate Disconnect Method



When cut, the First Responder Loop disables power to the HV system. Cutting the First Responder Loop disconnects the 12V supply from the high voltage and control components, thereby halting high voltage power processing.

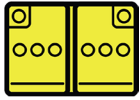
The First Responder Loop is located under the hood and is the red wire connecting the emergency disconnect switch to the 12V battery.

When the First Responder Loop has been cut, always treat the high voltage batteries and high voltage components as if they are live. The high voltage batteries have stored energy and it is not known if high voltage components have been damaged and made unsafe in an accident. Treat every orange cable and high voltage component as if high voltage is present. Never cut an orange high voltage cable or cut into any high voltage component.



**WARNING** There is no way to instantly discharge the energy that is stored inside of the high voltage batteries. Use caution to avoid damaging the high voltage batteries during vehicle rescue and recovery operations.

## Low Voltage Battery



The Motiv EPIC 4 has a low voltage electrical system providing power to all essential and accessory vehicle services. The 12V battery is located under the hood on the left side of the compartment.

When necessary, the negative 12V battery cable should be double cut to disconnect the 12V battery circuit. Ensure the positive and negative battery terminals do not make contact double cutting the negative battery cable.



**WARNING** Even when the red emergency cut-off switch is turned off to disconnect the high voltage, all of the 12V wiring to the standard lights, fans, communication equipment, and other accessory components remains active.



## Disconnect the Charging Connector

In the event of a vehicle fire or other situation that requires relocating the vehicle, ensure that the vehicle charging connector is disconnected before the vehicle is moved. There is no lock securing the vehicle charging connector to the vehicle charge port, the charging connector may be removed at any time. The vehicle charging station will not provide energy to the vehicle when the high voltage emergency cut-off switch is turned off or the first responder loop is cut.

## **4. Access to the occupants**

Refer to the final-stage manufacturer's documentation for information related to accessing the occupants for the specific body installed on the chassis.

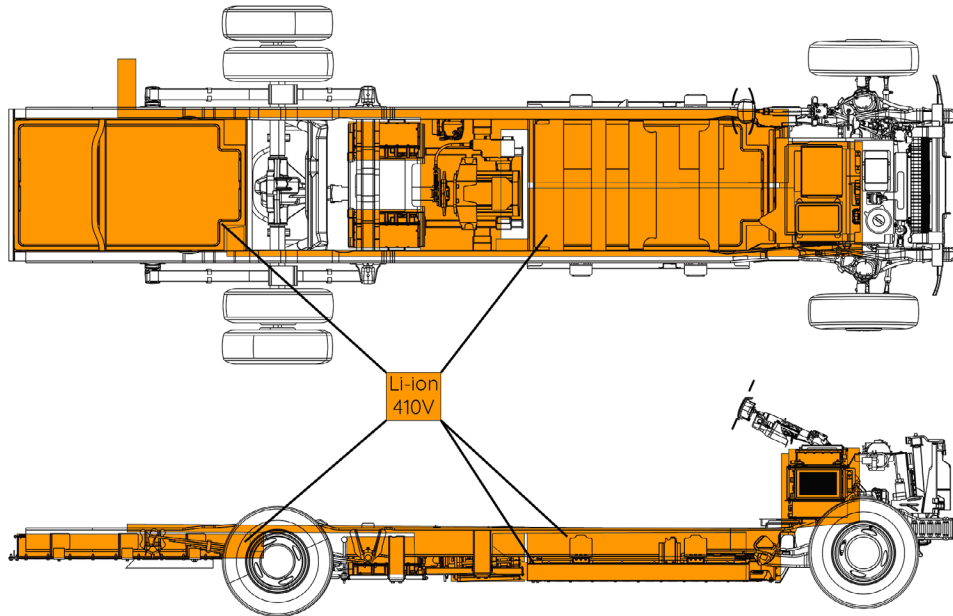


# 5. Stored energy / liquids / gases / solids

## High Voltage Components



|  |      |  |
|--|------|--|
|  | 12V  |  |
|  | 410V |  |



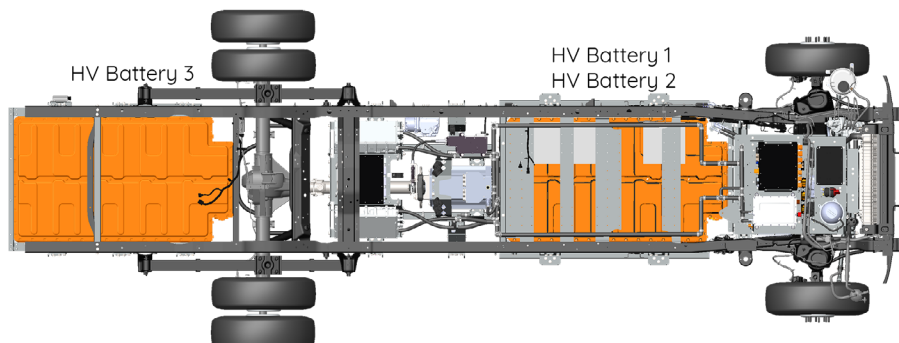
## High Voltage Battery Packs



The Motiv EPIC 4 is equipped with 410V lithium-ion high voltage batteries mounted between and below the chassis frame rails. The batteries are made up of multiple cells inside an enclosed housing that are cooled using R134a refrigerant.



**WARNING** Use caution to avoid damaging the high voltage batteries during vehicle rescue and recovery operations. The batteries may have stored energy within them and present a danger to personnel.



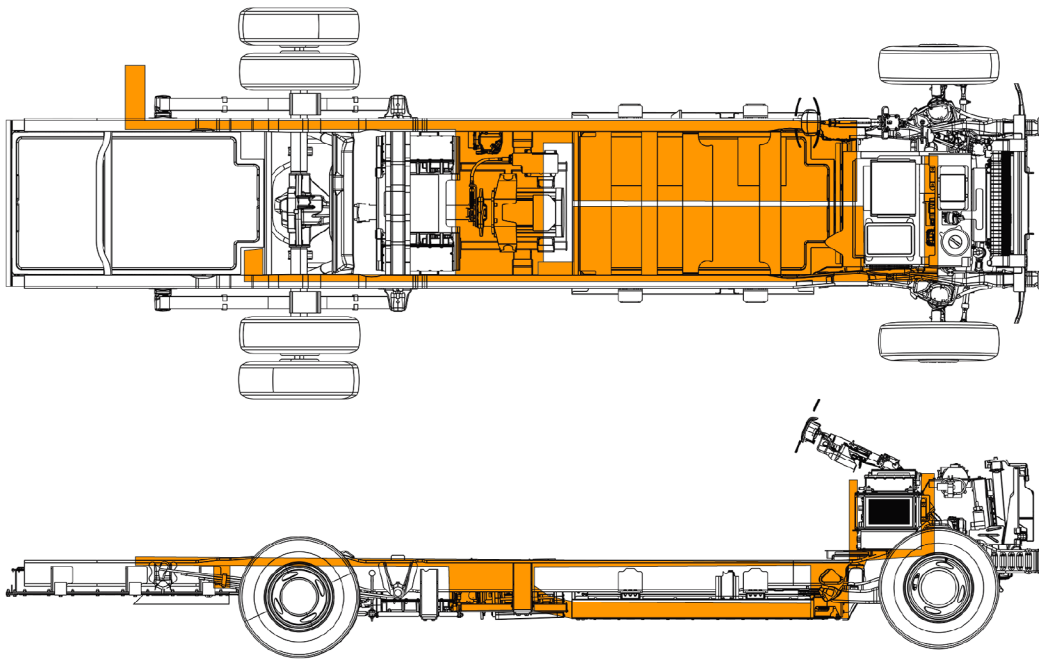
## High Voltage Cables



High voltage cables are shown in orange. There are high voltage cables that run the length of the vehicle between and under the chassis frame rails. High voltage cables are colored orange and protected by orange looming.

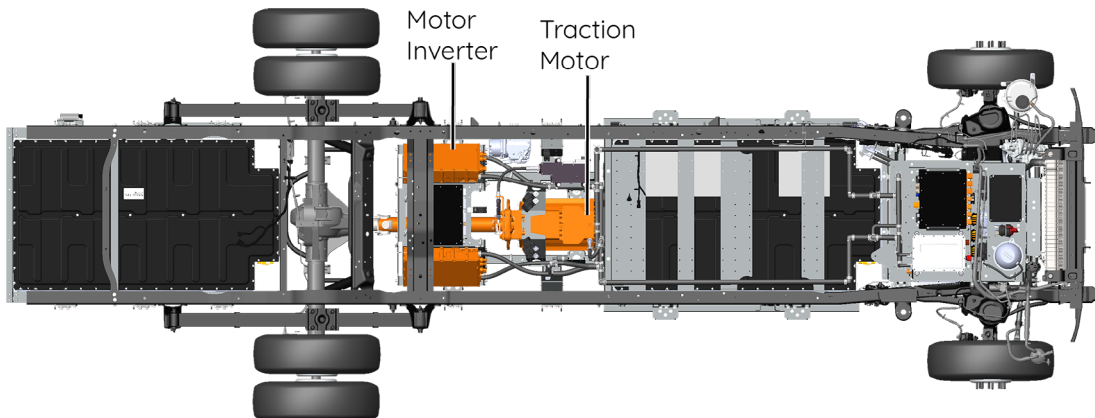


**WARNING** Use caution to avoid damaging the high voltage cabling during vehicle rescue and recovery operations. All high voltage cabling must always be assumed to have high voltage present.



## Traction Motor

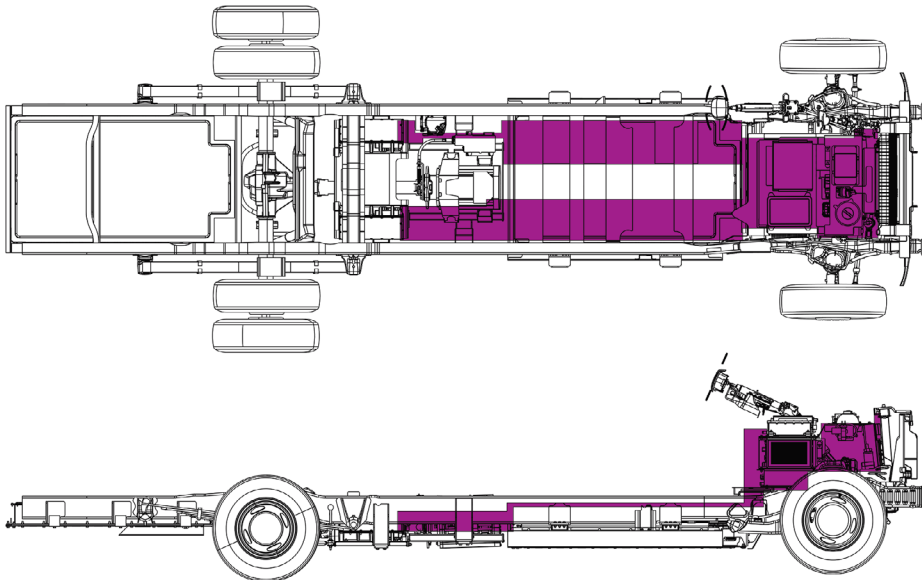
The traction motor is located between the chassis frame rails. The traction motor is connected to the rear axle using a traditional drive shaft. The motor inverter provides power from the high voltage batteries to the traction motor. The motor inverter is located between the frame rails behind the traction motor directly in front of the rear axle and is connected to the traction motor with high voltage cables.



## Coolant System



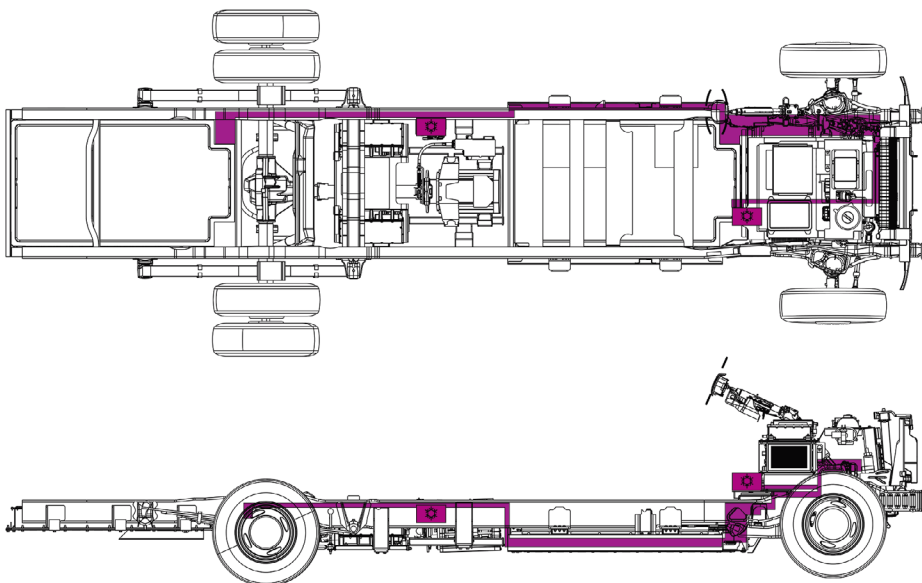
Coolant lines are shown in purple. There are coolant lines that run from the front of the vehicle to the rear axle between the chassis frame rails. Coolant lines are a combination of black flexible hose lines and welded metal lines. Do not compromise the coolant lines with rescue tools. Ethylene glycol based coolant is used in the coolant system.



## R134a Refrigerant System



Refrigerant lines are shown in purple. There are refrigerant lines that run the length of the vehicle between, under, and outside the chassis frame rails. Refrigerant lines are a combination of black flexible hose lines and welded metal lines. Do not compromise the refrigerant lines with rescue tools. R134a is used in the refrigerant system.



## 6. In case of fire



 **POSSIBLE BATTERY RE-IGNITION**

 **USE LARGE AMOUNTS OF WATER**

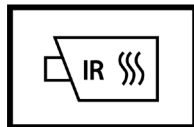
### Firefighting



Use water to fight a high voltage battery fire. Always obtain an additional water supply early, it can take thousands of gallons of water, applied directly to the battery, to fully extinguish and cool down a battery fire.

Extinguish small fires that do not involve the high voltage battery using typical firefighting procedures.

Battery fires can take up to 24 hours to fully cool. There must be no fire, smoke, or heating present in the high voltage batteries for at least 60 minutes and the batteries must be completely cooled before the vehicle can be released to law enforcement, vehicle transportation, or any other second responder.

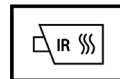


Use a Thermal Imagery Camera or Infrared (TID or IR) to monitor battery temperatures during the cooling procedures.

Always advise second responders about the risk of battery re-ignition.



**WARNING** Damaged lithium-ion batteries may re-ignite after the fire is extinguished. Use an infrared camera to check that the temperature is not above ambient.



**WARNING** A vehicle involved in a submersion, fire, or collision that has compromised the high voltage batteries should be stored in an open area at least 50 feet from any other vehicles, buildings, or other property.



**WARNING** A burning high voltage battery releases heated gases and toxic vapors. Always wear full PPE, including a Self-Contained Breathing Apparatus (SCBA).

## 7. In case of submersion

Treat the submerged EPIC 4 like any other submerged vehicle.

Remove the vehicle from the water and allow the water to drain before continuing to disable the high voltage.



**WARNING** Vehicles that have been submerged in water have a greater risk of a high voltage battery fire. First Responders should be prepared to respond to a high voltage battery fire.

## 8. Towing / transportation / storage



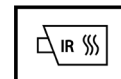
**WARNING** Even with the powertrain shut off, magnets in traction motors generate dangerous high voltage when the vehicle is towed or coasting. Always tow the vehicle on a cradle when moving the vehicle or disconnect the driveshaft and remove the rear section of the driveshaft from the vehicle.



**WARNING** A vehicle involved in a submersion, fire, or collision that has compromised the high voltage batteries should be stored in an open area at least 50 feet from any other vehicles, buildings, or other property.



**WARNING** Damaged lithium-ion batteries may re-ignite after the fire is extinguished. Use an infrared camera to check that the temperature is not above ambient before towing.



The traction motor can generate power when the rear wheels spin. Always transport the vehicle with all four tires off the ground.

If necessary, the vehicle may be towed with the front wheels suspended. Always disconnect the driveshaft from the rear axle and remove the rear section of the driveshaft from the vehicle. Store the disconnected driveshaft in the vehicle for reinstallation after transport.

## 9. Important additional information



**WARNING** Use caution to avoid damaging the high voltage battery while stabilizing/lifting the vehicle.



**WARNING** Do not use the high voltage battery to lift or stabilize the vehicle.



**WARNING** Use caution to avoid coming in contact with the high voltage battery or other high voltage components.



**WARNING** Only first responders who are trained and equipped at the technician level per the National Fire Protection Association (NFPA) and are familiar with the lift points should be lifting or manipulating the vehicle.



**WARNING** There is no way to instantly discharge the energy that is stored inside of the high voltage batteries. Use caution to avoid damaging the high voltage batteries during vehicle rescue and recovery operations.



**WARNING** Even when the red emergency cut-off switch is turned off to disconnect the high voltage, all of the 12V wiring to the standard lights, fans, communication equipment, and other accessory components remains active



**WARNING** Use caution to avoid damaging the high voltage batteries during vehicle rescue and recovery operations. The batteries may have stored energy within them and present a danger to personnel.



**WARNING** Use caution to avoid damaging the high voltage cabling during vehicle rescue and recovery operations. All high voltage cabling must always be assumed to have high voltage present.



**WARNING** Damaged lithium-ion batteries may re-ignite after the fire is extinguished. Use an infrared camera to check that the temperature is not above ambient.



**WARNING** A vehicle involved in a submersion, fire, or collision that has compromised the high voltage batteries should be stored in an open area at least 50 feet from any other vehicles, buildings, or other property.



**WARNING** A burning high voltage battery releases heated gases and toxic vapors. Always wear full PPE, including a Self-Contained Breathing Apparatus (SCBA).



**WARNING** Vehicles that have been submerged in water have a greater risk of a high voltage battery fire. First Responders should be prepared to respond to a high voltage battery fire.



**WARNING** Even with the powertrain shut off, magnets in traction motors generate dangerous high voltage when the vehicle is towed or coasting. Always tow the vehicle on a cradle when moving the vehicle or disconnect the driveshaft and remove the rear section of the driveshaft from the vehicle.

## **Contact Us**

Motiv Power Systems, Inc.

330 Hatch Drive

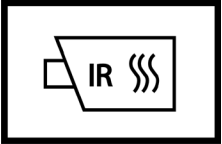








Foster City, CA 94404

Phone: 1-650-458-4804

For Customer Support, select option 3



## 10. Explanation of pictograms used

|   |   |
|---|---|
|    | <p>Infrared (IR) device, also known as a Thermal Imaging Camera (TIC)</p> |
|    | <p>General Warning</p>  |
|    | <p>Electricity Warning</p>  |
|    | <p>Flammable</p>  |
|   | <p>Explosive</p>  |
|  | <p>Corrosive Substances Present</p>                                       |
|  | <p>Hazardous to Human Health</p>  |
|  | <p>Acute Toxicity</p>   |
|  | <p>Use Water to Extinguish</p>  |