

RCI-34-24-001-1: R1 High Voltage (HV) System Overview

Rivian Automotive, LLC - Service Guideline


Document Type	Collision Repair Information Document
Date	November 26, 2024
Affected Region(s)	USA
Affected Model(s)	R1T, R1S
Model Year(s)	2025+
Vehicle System	34 - High Voltage Distribution


Attention:


- This document is intended as a general High Voltage (HV) system component overview and servicing guideline. Always refer to the Rivian service manual for vehicle-specific information when servicing or replacing HV components.
- Rivian recommends that only Factory Certified Service Technicians inspect and repair the HV System in Rivian vehicles. Please contact your regional Rivian Collision/Service Team to request more information or assistance with repairs.


General Information


To promote and maintain its rigorous standards of quality and safety, Rivian Automotive provides the collision industry with important information, and safety precautions, to use when performing repairs on a Rivian vehicle after a collision event.

 **Important:** Always refer to the Rivian service manual for up-to-date information regarding the disablement of the HV system and safety precautions/steps to follow prior to performing any work on the HV system.

 **Warning:** To lower the risk of possible electrocution, always assume the HV battery pack, and associated components, are energized and fully charged until their status can be verified by following the HV disabling guidelines in the service manual.

 **Warning:** Exposed HV electrical components, cables, and batteries present potential HV shock hazards that could result in bodily injury or death.

 **Warning:** Any venting/off-gassing HV battery vapors may be toxic and/or flammable and could result in bodily injury or death.

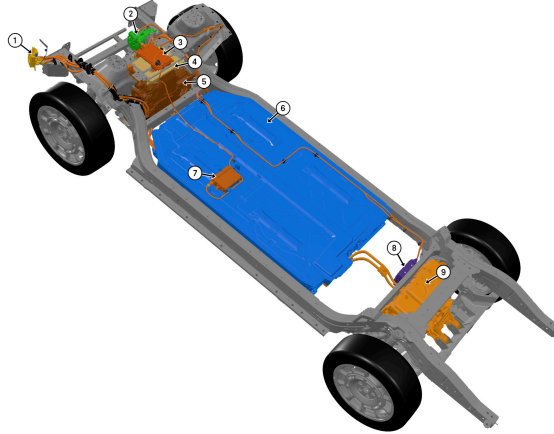
 **Warning:** Physical damage to the HV battery may result in a fire or in immediate, or delayed, release of toxic and/or flammable gases which could result in bodily injury or death.

Things to keep in mind,

- The HV system may vary by vehicle model and configuration.
- Locations to inspect for the presence of HV, after the HV system has been disabled, will vary between by vehicle chassis model and battery/drive unit configurations.

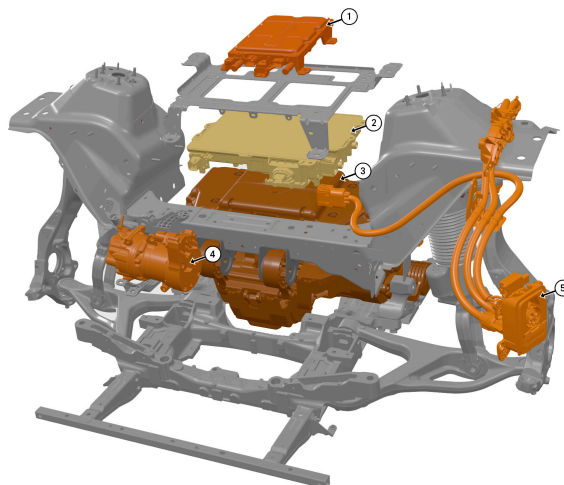
- Review all necessary service procedures and safety documents prior to performing repairs or storage of the HV battery pack.
- A Pre and Post system scan is required when performing any HV repairs on Rivian vehicles.
- Follow all applicable laws or safety guidelines for storage and handling of HV battery packs.
- Make sure the appropriate PPE is worn as per NFPA 70E, OSHA guidelines, or the local equivalent.

High Voltage (HV) Component Location



Number	HV Component
1	Charge Port DC
2	Air Conditioning Compressor
3	DC/DC Converter
4	Onboard Charger (OBC)
5	Front Drive Unit (FDU)
6	HV Battery
7	DC/AC Inverter (Located under passenger seat)
8	Coolant Heater
9	Rear Drive Unit (RDU)

Front Drive Unit/Power Electronics Group

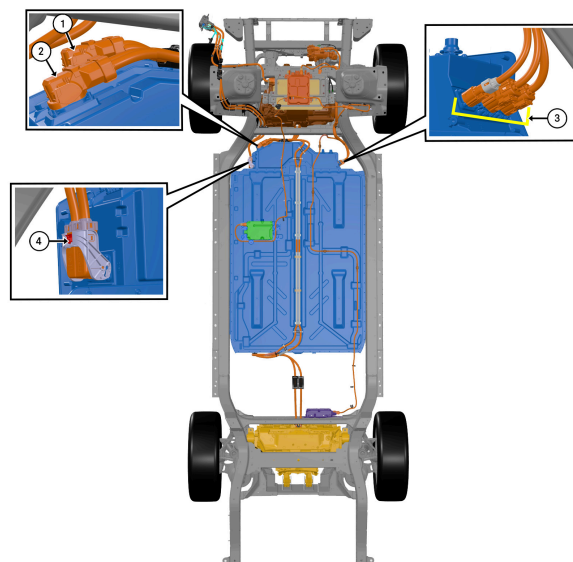


Number	HV Component
1	DC/DC Converter
2	On-Board Charger (OBC)
3	Front Drive Unit (FDU)
4	Air Conditioning Compressor
5	Charge Port

Battery Pack Connectors

Standard Pack

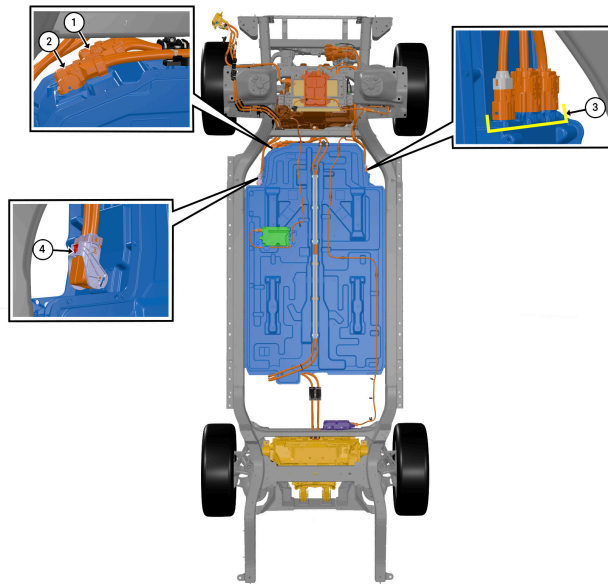
Top View



Number	HV Connector
1	Front Drive Unit (FDU)
2	Rear Drive Unit (RDU)
3	DC/DC Converter, On-Board Charger (OBC), Air Conditioning Compressor, Coolant Heater
4	Charge Port

Max Pack and Large Pack

Top View



Number	HV Connector
1	Front Drive Unit (FDU)
2	Rear Drive Unit (RDU)
3	DC/DC Converter, On-Board Charger (OBC), Air Conditioning Compressor, Coolant Heater
4	Charge Port

Pyrotechnic Fuse

The Pyrotechnic Fuse automatically disables the High Voltage (HV) system to prevent short circuits in the event of a collision with significant deceleration at the time of impact.



Note: The Pyrotechnic Fuses on Model Year 2022-2024 Vehicles disable the HV system by cutting 12 Volt power to the HV contactors. The Pyrotechnic Fuses on Model Year 2025+ Vehicles disable the HV system by directly disconnecting the HV circuit.

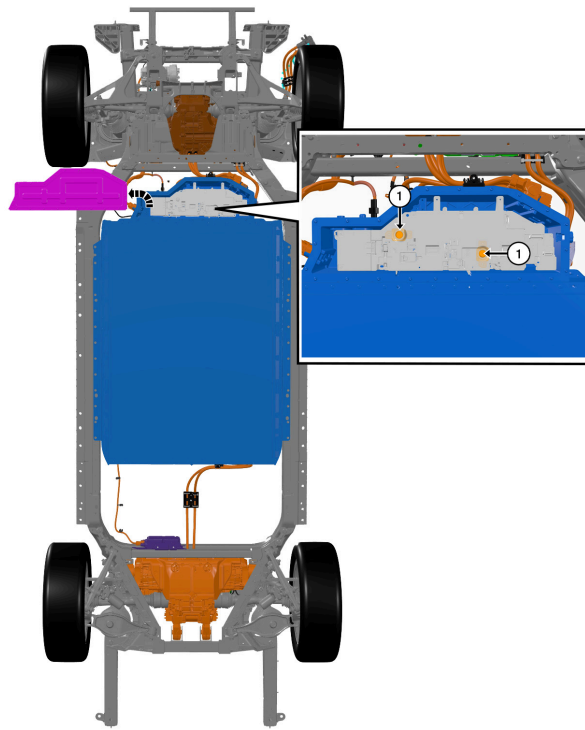


Attention:

- At time of publication, only Rivian Factory Certified Service Technicians are authorized to replace the Pyrotechnic Fuse(s) in Model Year 2025+ Vehicles. Please contact your regional Rivian Collision/Service Team to request assistance with repairs.
- HV contactors can become welded together, under certain circumstances, resulting in the HV system remaining energized even if the pyrotechnic fuse has been deployed. Refer to the Service Manual procedure for disabling the HV system for instructions on how to check the status of the HV system before working on any HV components.

Standard Pack

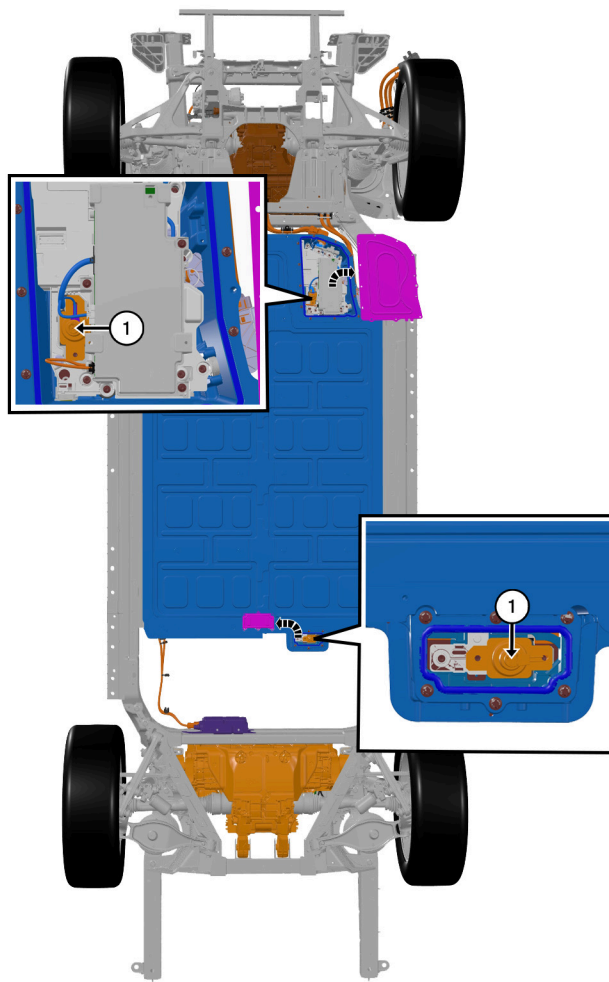
Bottom View



Number	Component
1	Pyrotechnic Fuse

Max Pack and Large Pack


Bottom View

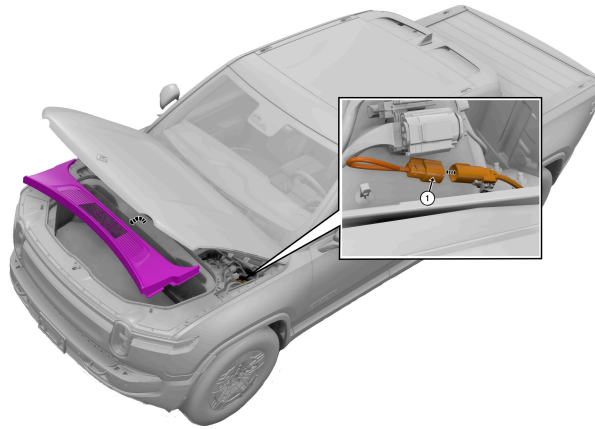


Number	Component
1	Pyrotechnic Fuse

First Responder HV Disconnection Cable

Disconnection of the First Responder HV Disconnect Cable manually disables the HV system to allow for servicing of the HV system in a safe manner.

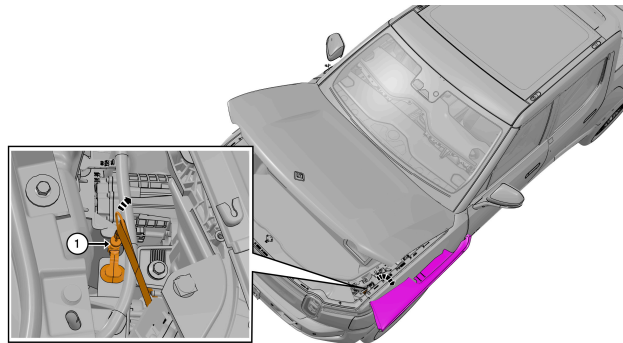
- 
Important: Always refer to the Rivian service manual for up-to-date information regarding the disablement of the HV system and safety precautions/steps to follow prior to performing any work on the HV system.



Number	Component
1	First Responder HV Disconnection Cable

Charging Connector Manual Release Cable

The charging connector manual release cable can be used to release a connector that will not disengage from the charge port. Refer to the R1T Owner's Guide for more information.



Number	Component
1	Charging Connector Manual Release Cable