

# RCI-30-25-001-1 High Voltage (HV) Battery Handling and Damage Inspection Guidelines

## Rivian Automotive, LLC - Service Guideline

Document Type	Collision Repair Information Document
Date	November 21, 2025
Affected Region(s)	North America, Europe
Affected Model(s)	R1T, R1S, EDV
Model Year(s)	2022+
Vehicle System	30 - High Voltage Battery

**Notice:**

This document supersedes RCI-30-23-001-1: High Voltage (HV) Battery Storage and Handling Guidelines, and RCI-30-23-002-1: High Voltage (HV) Battery Damage Inspection Guidelines.

**Attention:**

- Always refer to the Rivian service manual for up-to-date information regarding the disablement of the High Voltage (HV) system and safety precautions/steps to follow prior to performing any work on the HV system.
- 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 for assistance with repairs

## General Information and Best Practices

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 inspecting vehicles for HV battery damage after a collision event.

**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.

- Make sure the appropriate PPE is worn as per NFPA 70E, OSHA guidelines, or the local equivalent.
- Follow all applicable laws or safety guidelines for storage of electric vehicles involved in collision events (DOT HS 811 576).
- Review all necessary service procedures and safety documents prior to performing repairs or storage of the HV battery pack.
- Use RiDE to scan for system faults.
- 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, may vary between vehicle model and battery/drive unit configurations.

## Handling and Storage Guidelines

**Warning:**

A HV battery pack, as well as all related HV components, pose a significant electrocution risk if the housing or the built-in safety components have experienced significant damage during a collision event. Rivian strongly recommends that you contact your regional Rivian Collision/Service team for

assistance prior to servicing or storing a damaged HV battery pack.

- Never store a vehicle with a damaged HV battery indoors.
- Never attempt to charge a damaged HV battery.
- Never store a standalone HV battery at temperatures below -40C° (-40F°)
- Never store a standalone HV battery at temperatures over 60C° (140F°)
- Never charge or discharge a standalone HV battery at temperatures below -20C° (-4F°) or above 45C° (113F°).
- Never store a HV battery at either a high State of Charge (SOC), or in a completely discharged state. The ideal SOC for a HV battery pack in storage is between 30% -50%.

**Note:**

For shipping purposes, the required SOC is 30%

- Never stack HV battery packs on top of each other without proper crating.

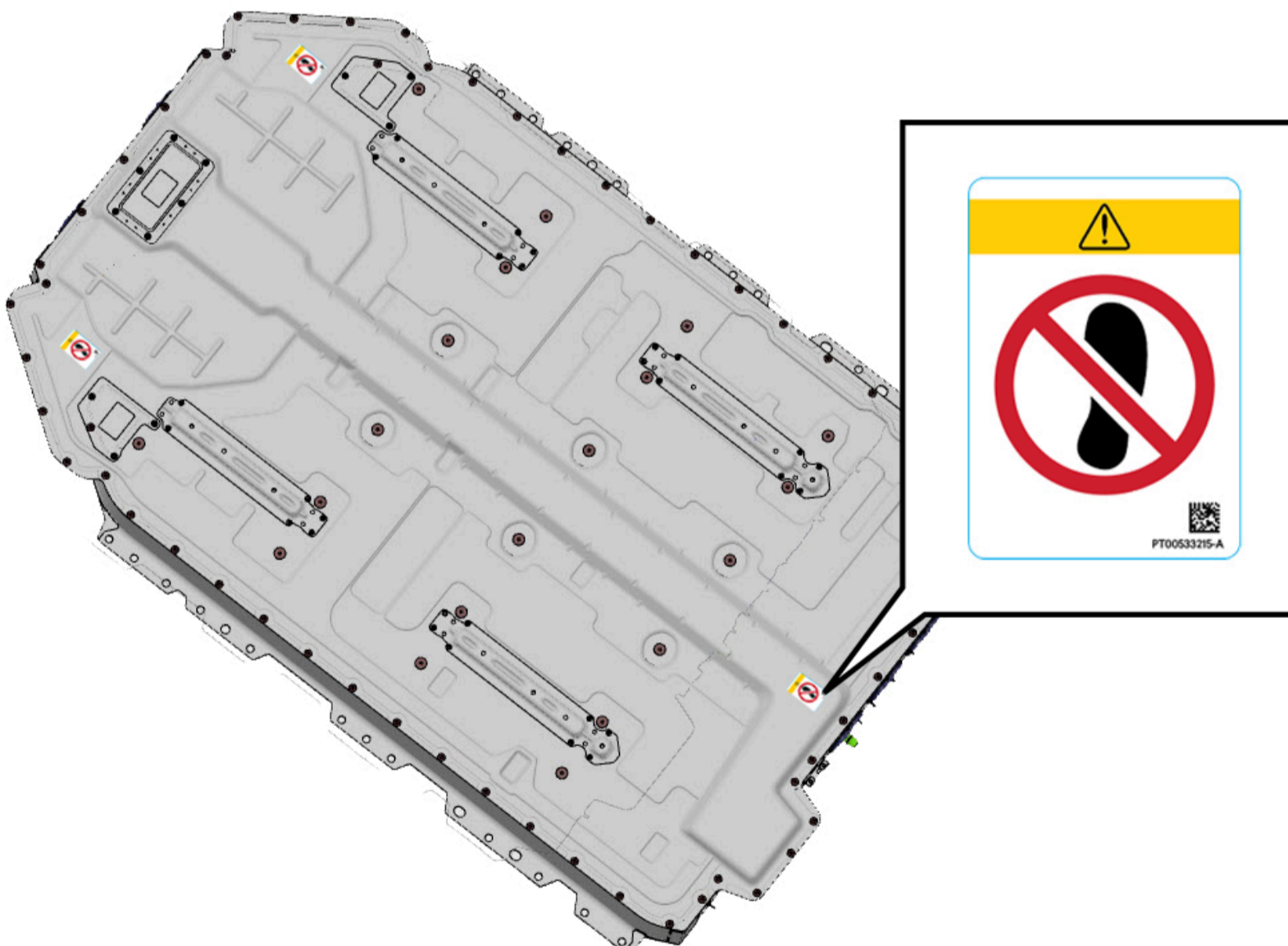
**Note:**

A maximum of two HV battery packs can be stacked with proper crating.

- Never perform any work that generates sparks or flammable debris near a stored HV battery
- Never store or place heavy objects on top of a HV battery.
- Never use a HV battery as a platform of any kind.

**Warning:**

Never step on the housing lid as this could result in irreversible damage to the HV battery and/or cause bodily injury.



- Always use the proper lock out/tag out procedures when working on a HV battery.
- Always store damaged HV battery packs at least 15m (50 ft) away from flammable materials, structures, vehicles, or other HV battery packs.
- Always call emergency services if you observe leaking fluids, sparks, smoke, flames, or hear gurgling or bubbling noises coming from the HV battery.
- Always make sure there is adequate ventilation prior to performing a damage inspection of a HV battery pack.
- Always maintain clear access to stored Rivian vehicles, or HV battery packs which are damaged, for proper monitoring and emergency response access, if needed.

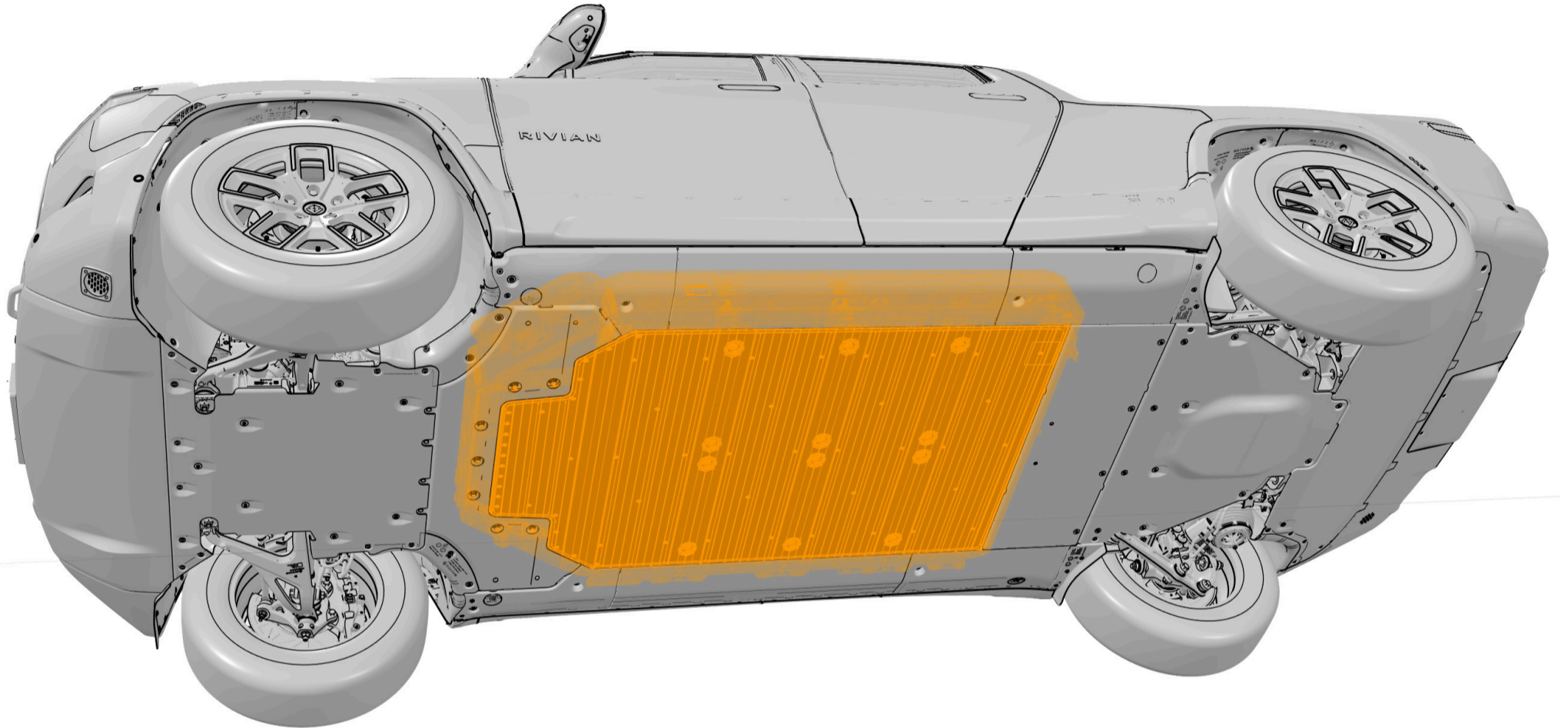
## HV Battery Damage Inspection

If possible, prior to allowing a vehicle with suspected HV battery damage to enter the shop area, perform the steps in the table below to ensure the vehicle is safe to work on. Make sure there is adequate ventilation prior to performing the inspection and always maintain clear access to the vehicle for proper monitoring and emergency response access, if needed. Begin by inspecting the bottom of the pack not covered by exterior trim or plates, then remove exterior trim or plates as necessary to continue inspection of exterior portions of the pack suspected to be damaged.

**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.

### Areas of Inspection

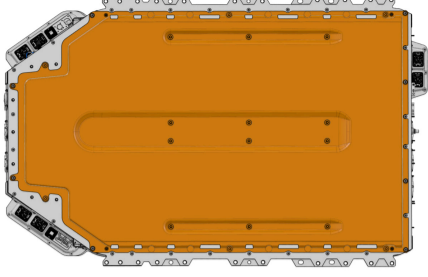
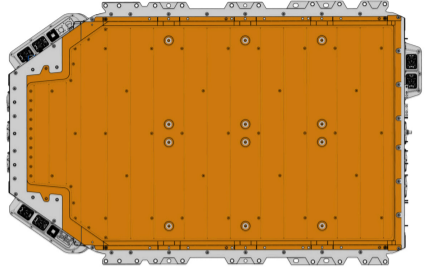
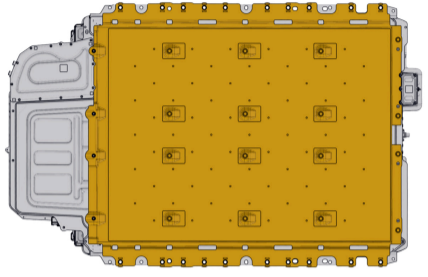


Inspection Point	Inspect For	Action
Battery housing	Sparks, smoke or flames	Call Emergency Services
	Electrical odors and fumes	
	Gurgling or bubbling noises	
	Any external leak(s) of battery cooling fluid (check coolant level)	Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.
	Signs of moisture accumulation and possible corrosion	
	Any cracks, holes, or tears in the HV battery housing, or deformations that exceed the acceptable limits defined in the Non-Critical Damage section of this document.	
	Damaged non-serviceable HV Connectors	
	Damaged housing Seals	
	Evidence of electrical arc or thermal event such as welding or spatter marks, burn marks, or melted plastic or seals.	

### Replaceable Skid Plates

Some Rivian vehicles feature a replaceable skid plate mounted on the bottom of the HV battery pack to protect internal components from direct impact. If the skid plate is damaged, refer to the applicable service manual procedure for step-by-step replacement instructions.

Model	Model Year	Variant/Battery Type	Figure
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Model	Model Year	Variant/Battery Type	Figure
R1	2022-2024	On-Road	
		Off-Road	
	2025+	Large and Max Pack/On-Road and Off-Road	
		Standard	No replaceable skid plate. Refer to Non-Critical Damage Evaluation Guide below for damage assessment.
EDV	2022+	All Variants	

### Non-Critical Damage

**CAUTION:**

Any visible hole, crack, or tear damage in the HV battery housing that may compromise the internal volume of the pack is not repairable and requires replacement on the HV battery pack to meet Rivian's standard for quality and safety.

Some visible damage to the HV battery housing may be non-critical to continuing operation and can either be left as is or repaired as directed in this document.

**Attention:**

A HV battery must pass the pressure and leak checks and no HV related DTCs can be present in the system, regardless of whether the observed physical damage is deemed as 'non-critical'.

**Note:**

HV Battery Housing Leak Test procedure(s) can be found below:

Model	Link
R1	<a href="#">HV Battery Housing Leak Test</a>
EDV	<a href="#">HV Battery Housing Leak Test</a>

Any scratches or gouges on the HV battery housing that fall within the acceptable limits, as defined below, should have any sharp edges deburred and lightly sanded, then refinished with epoxy primer and an automotive grade topcoat to prevent any potential future corrosion.

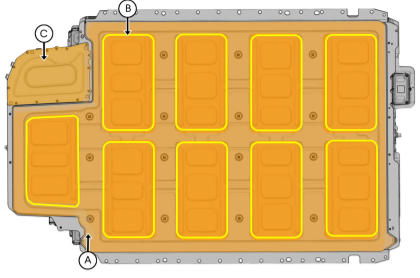
**Note:**

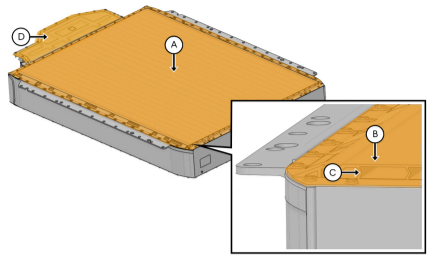
Any deformation damage should be assessed by placing a straight edge across the deformed area and measuring the deepest point of deformation.

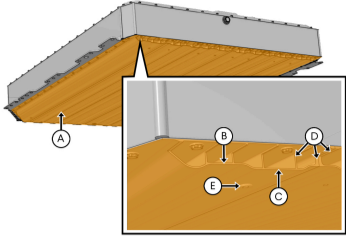
### Non-Critical Damage Evaluation Guide

Model	Model Year	Variant/ Battery Type	Damage Guidelines	Figure
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Model	Model Year	Variant/ Battery Type	Damage Guidelines	Figure
R1	2022-2024	On-Road	<p>The HV battery bottom cover is manufactured from composite materials and, therefore, no damage is acceptable unless signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</p> <ul style="list-style-type: none"> <li>• <b>Scratches or gouges</b> <ul style="list-style-type: none"> <li>◦ Less than 1mm in depth on the cast or extruded sides of the HV battery housing are acceptable when refinished.</li> </ul> </li> <li>• <b>Deformations</b> <ul style="list-style-type: none"> <li>◦ No deformation damage is acceptable on the HV battery housing, or bottom cover, unless signed off by Rivian. Contact your regional Rivian Collision/Service team to request more information or assistance with repair.</li> </ul> </li> <li>• <b>Threaded Fastener Damage</b> <ul style="list-style-type: none"> <li>◦ Thread damaged rivnuts or rivstuds on the exterior flanges of the HV battery housing can be replaced only when there is no deformation damage adjacent to the fastener. For cases where there is deformation damage adjacent to the fastener, contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ Replacement of damaged rivnuts and rivstuds installed into the main body of the HV battery housing need to be reviewed and signed off by Rivian. Contact your regional Rivian Collision/Service Team for more information or assistance with repair.</li> </ul> </li> </ul>	N/A
		Off-Road		

Model	Model Year	Variant/ Battery Type	Damage Guidelines	Figure
	2025+	Large and Max Pack/On-Road and Off-Road	<p><b>Bottom Cover Components:</b></p> <ul style="list-style-type: none"> <li>A. Stamped Aluminum Panel(s)</li> <li>B. Acceptable Deformation Area(s)</li> <li>C. HVDB Cover</li> </ul> <p>The HV battery pack bottom covers are composed of stamped aluminum panels. The replaceable skid plates provide the internal battery components with protection from direct impact. The HVDB cover is replaceable. Inspect the internal components of the HVDB for damage prior to replacing the cover.</p> <ul style="list-style-type: none"> <li>• <b>Scratches or Gouges</b> <ul style="list-style-type: none"> <li>◦ Less than 0.5mm in depth on the stamped aluminum bottom cover are acceptable when refinished.</li> <li>◦ Less than 1mm in depth on the cast or extruded sides of the battery housing are acceptable when refinished.</li> </ul> </li> <li>• <b>Deformations</b> <ul style="list-style-type: none"> <li>◦ Up to 5mm of depth on the stamped aluminum bottom are allowed only within the acceptable deformation area(s). No deformation damage is allowed outside of the acceptable deformation area(s) unless signed off by Rivian. Contact your regional Rivian Collision/Service Team for more information or assistance with repair.</li> <li>◦ No deformation is acceptable on the top or sides of the HV battery housing unless signed off by Rivian. Contact your regional Rivian Collision/Service Team for more information or assistance with repair.</li> </ul> </li> <li>• <b>Threaded fastener damage</b> <ul style="list-style-type: none"> <li>◦ Thread damaged rivnuts or rivstuds on the exterior flanges of the HV battery housing can be replaced only when there is no deformation damage adjacent to the fastener. For cases where there is deformation damage adjacent to the fastener, contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ Replacement of damaged rivnuts and rivstuds installed into the main body of the HV battery housing need to be reviewed and signed off by Rivian. Contact your regional Rivian Collision/Service Team for more information or assistance with repair.</li> <li>◦ Thread damage in the casting can be repaired with time-serts for only M6 sized bolts and smaller.</li> </ul> </li> </ul>	 <p>The diagram shows a top-down view of the HV battery pack bottom cover. It is a rectangular metal housing with several internal compartments. Three specific areas are labeled with letters: 'A' points to the bottom edge of the housing, 'B' points to the central area containing the battery modules, and 'C' points to the top edge of the housing.</p>

Model	Model Year	Variant/ Battery Type	Damage Guidelines	Figure
		Standard	<p><b>Bottom Cover Components:</b></p> <ul style="list-style-type: none"> <li>A. Bottom Cover</li> <li>B. Outer Wall</li> <li>C. Internal Vertical Supports</li> <li>D. HVDB Cover</li> </ul> <p>The HV battery pack bottom cover is composed of an extruded aluminum panel with a raised double wall to protect the internal battery components from direct impact. The outer wall is supported by regularly spaced internal vertical supports that run the length of the pack. The position of these vertical supports along the width of the pack can be identified by the exposed extrusion profile at the rear edge of the bottom panel. The HVDB cover is replaceable. Inspect the internal components of the HVDB for damage prior to replacing the cover.</p> <ul style="list-style-type: none"> <li>• <b>Scratches or gouges</b> <ul style="list-style-type: none"> <li>◦ Scratches or gouges less than 0.75mm in depth on the battery housing and bottom cover are acceptable when refinished.</li> </ul> </li> <li>• <b>Deformations</b> <ul style="list-style-type: none"> <li>◦ No deformation damage on the outer wall of the bottom cover is acceptable within 5mm of the vertical support walls. No deformation damage to the inner wall or single wall portion of the bottom cover is acceptable.</li> <li>◦ Up to 5mm of depth on the outer wall are acceptable as long as the deformed area does not encroach on the restrictions defined around the vertical support walls. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ No deformation damage is allowed on the top or sides of the HV battery housing unless signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> </ul> </li> <li>• <b>Threaded Fastener Damage</b> <ul style="list-style-type: none"> <li>◦ Thread damaged rivnuts and rivstuds on the exterior flanges of the battery housing can be replaced if there is no deformation damage adjacent to the fastener. For cases where there is deformation damage adjacent to the fastener, contact your regional Rivian Collision/Service Team to request more inform</li> <li>◦ Replacement of damaged rivnuts or rivstuds installed into the main body of the HV battery housing need to be reviewed and signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> </ul> </li> </ul>	

Model	Model Year	Variant/ Battery Type	Damage Guidelines	Figure
EDV	Mid 2023+	All Variants	<p><b>Bottom Cover Components:</b></p> <ul style="list-style-type: none"> <li>A. Bottom Cover</li> <li>B. Upper Outerwall Protrusion</li> <li>C. Lower Outerwall Protrusion</li> <li>D. Internal Vertical Supports</li> <li>E. Rivet Nut</li> </ul> <div style="border: 1px solid black; border-radius: 10px; padding: 5px; margin: 10px 0;"> <p><b>Note:</b> Shown with components removed for clarity.</p> </div> <p>The HV battery pack bottom cover is composed of an extruded aluminum panel with a raised double wall to protect the internal pack components from direct impact. The outer double wall is composed of a high outerwall protrusion and a low outerwall protrusion, varying across the width of the pack and extending along its length. The outer wall is also supported by irregularly spaced internal vertical supports that run the length of the pack. The position of these vertical supports along the width of the pack can be identified by the exposed portions on the front and rear edge of the bottom panel where they are machined down, as shown.</p> <ul style="list-style-type: none"> <li>• <b>Scratches or gouges</b> <ul style="list-style-type: none"> <li>◦ Scratches or gouges less than 0.75mm in depth on the battery housing and bottom cover are acceptable when refinished.</li> </ul> </li> <li>• <b>Deformations</b> <ul style="list-style-type: none"> <li>◦ No deformation damage on the outer double wall of the bottom cover is acceptable within 5mm of the vertical support walls or 25mm of any rivet nut locations. No deformation damage to the single walled portion of the bottom cover is acceptable.</li> <li>◦ Up to 5mm of depth on the upper outer wall protrusion, and up to 3mm of depth on the low outer wall protrusion are acceptable as long as the deformed area does not violate the restrictions defined around the vertical wall or rivet nuts. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ No deformation damage is acceptable on the top or sides of the battery housing unless signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> </ul> </li> <li>• <b>Threaded fastener damage</b> <ul style="list-style-type: none"> <li>◦ Thread damaged rivnuts and rivstuds on the exterior flanges of the pack can be replaced if there is no deformation damage adjacent to the fastener. For cases where there is deformation damage adjacent to the fastener, contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ Replacement of damaged rivnuts or rivstuds installed into the main body of the HV battery housing need to be reviewed and signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> </ul> </li> </ul>	

Model	Model Year	Variant/ Battery Type	Damage Guidelines	Figure
	2022 – Mid-2023	All Variants	<p><b>Bottom Cover Components:</b></p> <p>A. Bottom Cover(s)</p> <p>B. Acceptable Deformation Area(s)</p> <p>The HV battery pack bottom cover is composed of an inner stamped aluminum panel and three separate outer stamped aluminum panels to protect the internal battery components from direct impact.</p> <ul style="list-style-type: none"> <li>• <b>Scratches or gouges</b> <ul style="list-style-type: none"> <li>◦ Less than 0.25mm in depth on the stamped aluminum bottom cover are acceptable when refinished.</li> <li>◦ Less than 1mm in depth on the cast or extruded sides of the HV battery housing are acceptable when refinished.</li> </ul> </li> <li>• <b>Deformations</b> <ul style="list-style-type: none"> <li>◦ Up to 5mm of depth on the stamped aluminum bottom cover are allowed only within the acceptable deformation area(s) shown in the image above. No deformation damage is acceptable outside of the acceptable deformation area(s) unless signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ No deformation damage is acceptable on the top or sides of the battery housing unless signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> </ul> </li> <li>• <b>Threaded fastener damage</b> <ul style="list-style-type: none"> <li>◦ Thread damaged rivnuts and rivstuds on the exterior flanges of the pack can be replaced if there is no deformation damage adjacent to the fastener. For cases where there is deformation damage adjacent to the fastener, contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> <li>◦ Replacement of damaged rivnuts or rivstuds installed into the main body of the HV battery housing need to be reviewed and signed off by Rivian. Contact your regional Rivian Collision/Service Team to request more information or assistance with repair.</li> </ul> </li> </ul>	