Audi Battery Handling and Logistics Guide

The Audi Battery Handling and Logistics Guide provides detailed information on the safety standards and inspection processes that must be followed when handling and servicing a high-voltage battery.

AoA provides these materials for guidance and best practices to authorized Audi dealers when handling batteries for electric vehicles. It is the responsibility of the dealer to ensure proper training, materials andfacility are in place and up to date. These materials are not designed to address all possible scenarios that may occur with a high voltage battery. Dealer must comply with all applicable federal, state and local laws,rules, and ordinances at all times.

Dealership Personnel

The handling and servicing of high voltage batteries requires specialized training by designated Audi dealership technicianswho have achieved either HVT or HVE designations. Dealer should have plans for receiving a battery in the dealership such as temporary storage, directions for delivery truck, what to do if delivery in off hours, etc. EHS, Parts Logistics

1.1 High Voltage Technician (HVT)

- Any disconnection of the car from the battery, and its reconnection, must be performed by an HVT.
- The HVT is qualified to perform the battery classification test.
- See section 1.4 for specific repairs an HVT can perform.

1.2 High Voltage Expert (HVE)

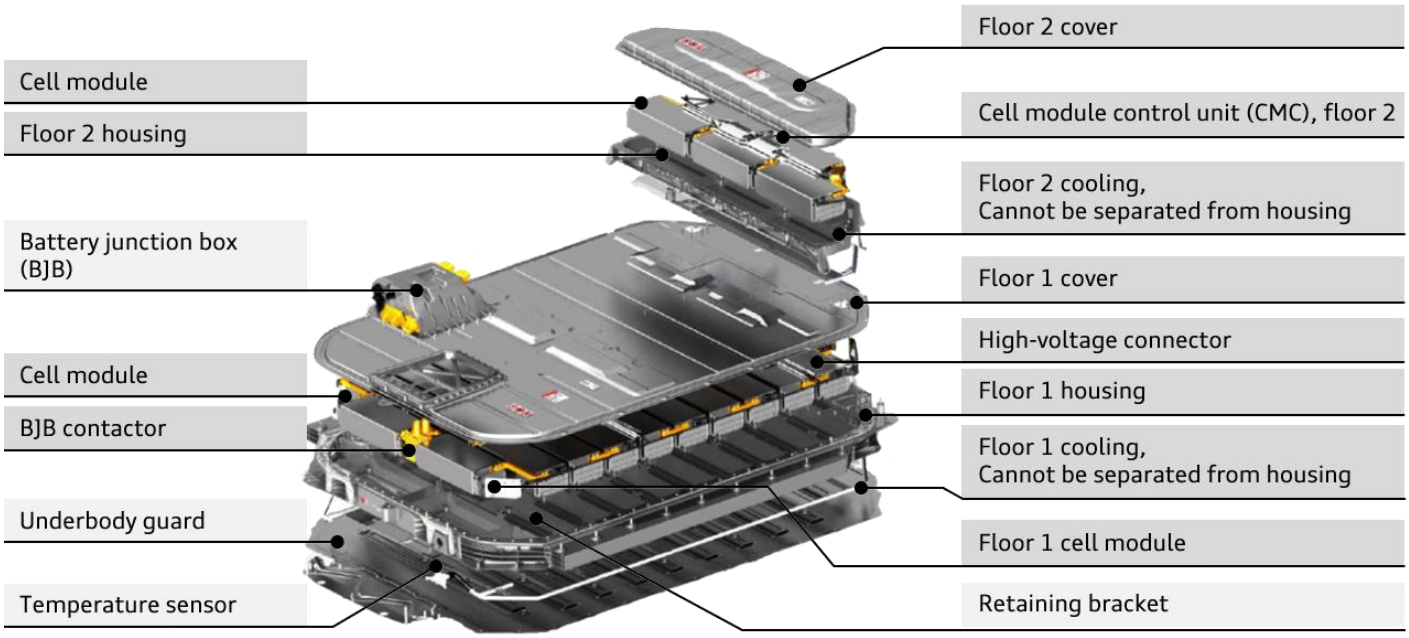
- The HVE is the most highly-trained person for performing work on high-voltage components.
- In addition to battery repairs, HVEs support dealerships in handling of “Warning” and “Danger” classified batteries.
- See section1.4 for specific repairs an HVE can perform.
- If your dealership does not have an HVE onsite, and one is needed, follow the steps below:
  - Open a case in the Technical Assistance Center (TAC) – access TAC through iAudi.
  - Contact your local Technical Field Manager (TFM).

1.3 Electrically Instructed Person (EIP)

- An electrically instructed person is permitted to perform specific repair work on high-voltage vehicles, such as changing tires or replacing the wipers.
- An EIP cannot repair high-voltage components. Any EIP performing work on a high-voltage vehicle must be instructed and supervised by a HVT.

1.4 Repair Responsibilities – HVE v. HVT

Repair	HVT	HVE
High-voltage systems (power electronics, on-board charger)	X	X
Battery management controller (BMC)	X	X
Battery junction box (BJB)	X	X
Cell module		X
Cell module controller (CMC)		X



1.5 Training

> For additional information regarding the training that dealership personnel are required to complete to repair or service vehicles with high-voltage batteries, please visit the Audi Academy, accessed through iAudi.

> Specific course numbers can be found in Section 8.2.

Workshop Safety

This section provides an overview of the safety protocols to adhere to when handling a high-voltage battery, the equipment and tools needed for servicing and repair, and the best practices for fire suppression.

Electric vehicles require specialized workshop equipment and tools for both common maintenance tasks and heavy repairs, such as battery removal and battery module replacement. The following minimum standards were established to ensure safe, proper handling of Audi EVs and high voltage batteries.

2.1 Workshop Lifts

> At least one lift must have unobstructed clearance between superstructure posts of at least 67”. Clearance of 70” is recommended.

> Lift capacity must be 8,000 lbs. or greater.

2.2 Workshop Tools

Audi e-Mobility Tooling — AT-377 Tool Package

HVT and General Repair			A3 e-tron	Audi e-tron
T 10358	Bracket			
T 40155	Retaining strap	2 items		
T 10408+ /1-/5				
T 40258	High-voltage release tool			
T 40259	Battery removal eyes			
T 40262	Service disconnect lock			
T 40409	Key for coolant expansion tank			
T 40430				
VAS 5581	High-voltage diagnostics box			

HVT and General Repair (cont.)			A3 e-tron	Audi e-tron
VAS 5581/8	Adaptor cable			
VAS 611009	Diagnostic adaptor for high-voltage charging system			
VAS 6558A	High-voltage test adaptor			
VAS 6558/1A	High-voltage test adaptor			
VAS 6558A/9-6	High-voltage test adaptor			
VAS 6558/14A	High-voltage test adaptor			
VAS 6558/15	High-voltage test adaptor			
VAS 6558/18A	High-voltage test adaptor			
VAS 6558A/23	High-voltage test adaptor			
VAS 6558A/28	Earth cable			
VAS 6558A/29	High-voltage test adaptor			
VAS 6558A30	High-voltage test adaptor	2 pieces		
VAS 6606/10	Test adaptor			
VAS 6649	Sign — flash			
VAS 6650A	Sign — switch			
VAS 681001	USB adaptor for e-tron charging system			
VAS 691007	Shackle	3 pieces		
VAS 691009	Shackle	2 pieces		
VAS 691013	Lifting eye, M8	4 pieces		
VAS 691015	Lifting eye, M10	2 pieces		
VAS 6911/3A	Test connector set			
VAS 6911/4	Leak-tight connector	2 pieces		
VAS 6911/10	Rubber bung			
VAS 6946	Test instrument adaptors/DSO			
TBD	Personal protective clothing **PHEV protective clothing is not sufficient**			

Audi e-Mobility Battery Repair — US & CA		A3 e-tron	Audi e-tron
3409	Trim removal wedge		
T 10341	Guide pin		
T 10542A	Adaptor		
T 10543	Suspension device		

T 10544	Contact protection			
Audi e-Mobility Ba ttery Repair — US & CA (cont.)			A3 e-tron	Audi e-tron
T 40417	Leak-tight connector	2 pieces		
T 40418	Leak-tight connector	3 pieces		
T 40420	Cover			
T 40421	Contact protection			
T 40422	Seal			
T 40424	Module remover			
VAG 1561A	Cutter			
VAS 611013	Pressure sensor			
VAS 6648	Pneumatic gun, 18 bar			
VAS 6762	High-voltage tool set			
VAS 6762/44	Insulating mat			
VAS 6762/48	End caps			
VAS 6786	Batter warning notice			
VAS 6845	Scraper set			
VAS 6881	Warning sign			
VAS 6886	Warning sign (danger from batteries)			
VAS 6883/1(A)	Torque wrench, 5-25 Nm			
VAS 6884	High-voltage barrier tape			
VAS 6900/1	Blade			
VAS 9600/2	Scraper			
VAS 6900/3	Scraper			
VAS 6900/6	Lever			
VAS 691003A	High-voltage tool set, TORX			
VAS 691003/19	High-voltage socket, TORX			
VAS 691005	Cooling system tester for high-voltage batteries			
VAS 691005/9	Guide sleeve			
VAS 6911/15	Rubber plugs			
VAS 852015	Plastic wedge set			
VAS 891005	2- Component cartridge gun			

Audi e-Mobility Tooling Importer Owned Battery — Lifting Module Ba lancing — US & CA			A3 e-tron	Audi e-tron
T 40416	Battery limit stop (BEV)	4 pieces		
VAS 501009	Fork-lift cross beam with chains			
VAS 501011	Sling chain	4 pieces		
VAS 6910	Module balancer			
VAS 6910/12A	Wiring harness			
VAS 6910/17/1&/2	Wiring harness			

2.3 Forklifts

- Forklifts are required to move a high-voltage battery. If your dealership does not have a forklift, you must either rent, lease or purchase a forklift. The forklift must have a minimum lifting capacity of 3,500 lbs and have forks that are minimum of 6 feet long. Contact Jesus Rodriguez Gonzalez for additional details.
  - Jesus Rodriguez Gonzalez - Parts Program Specialist, Audi of America
  - Jesus.RodriguezGonzalez@audi.com // (703) 364-7153
- Options for obtaining a forklift:
  1. Rent a forklift from a local equipment rental company. It is recommended to call a local equipment rental company a minimum of three days before the forklift is needed to place an order.
  2. Lease or purchase a forklift through Audi After Sales' partnership with Doosan through Valley Industrial.
     - For a lease or purchase, contact Jim Hammond at Valley Industrial. Identify yourself as an authorized user.
     - jhammond@valleyindustrialtrucks.com // (330) 506-2896.
- Any individual operating a forklift must complete a training program prior to operating the forklift. Dealerships should ensure compliance with OSHA standards, including 29 CFR § 1910.178.

2.4 Fire Suppression

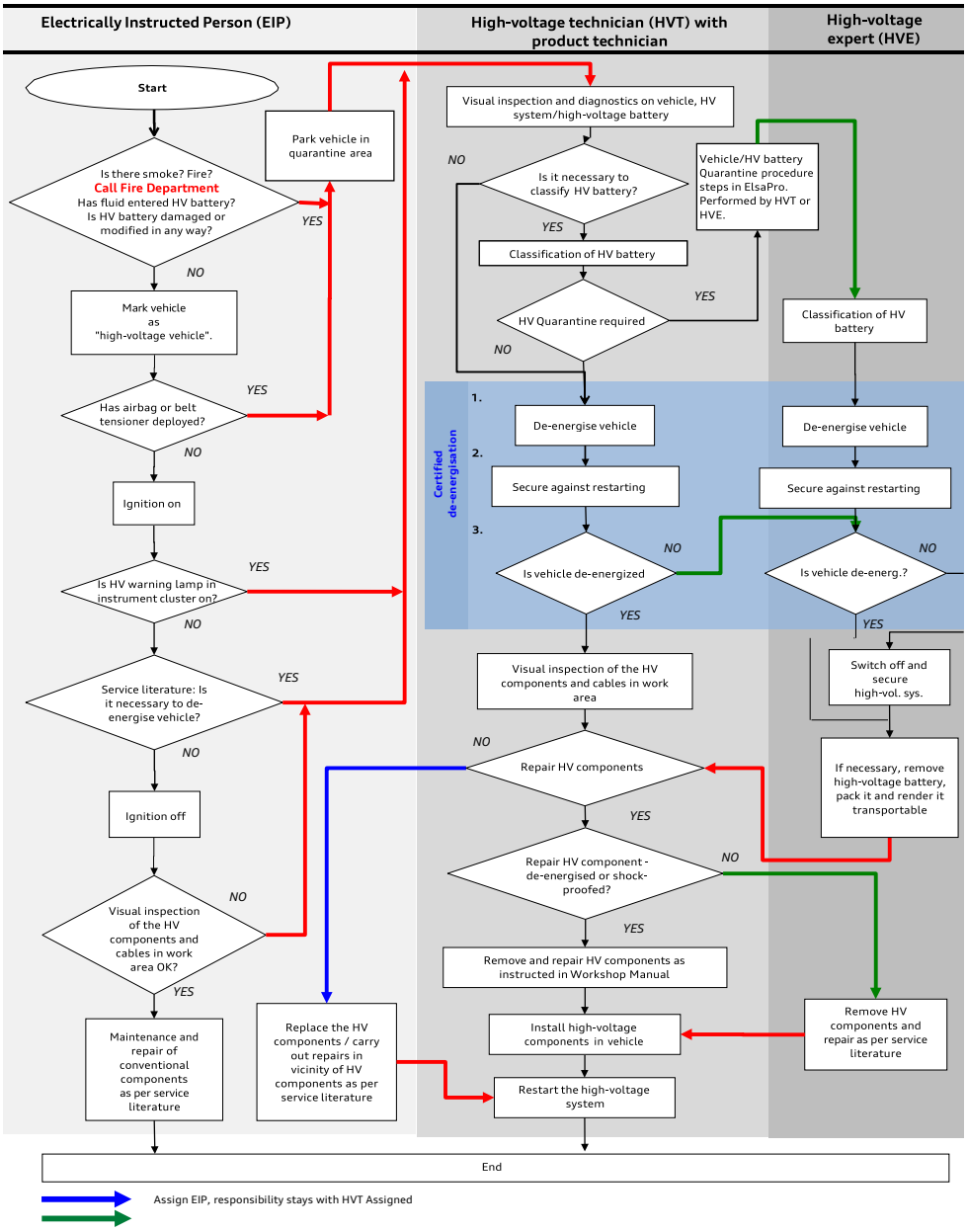
- Before starting and during repairs, there should be a pathway that remains clear to the outside of the building that is the shortest route possible to the designated quarantine area.
- Do not house batteries near fuel tanks or gas cylinders in the workshop.
- A Class ABC fire extinguisher should be present in the near vicinity.
  - A standard ABC fire extinguisher should be used.
  - One (1) 20 lb. unit or two (2) 10 lb. units dedicated to the area where battery repairs are being conducted.

Workshop Procedures

This section provides an overview of the different processes and procedures that are used when servicing and repairing a high-voltage vehicle. Specific use cases for when to perform these procedures are outlined in Section 6.

3.1 Workshop Procedure Plan for High-Voltage Vehicles

- The following process flow chart should be followed upon the arrival of a high-voltage vehicle at the workshop. Use the workshop procedure plan to determine when an issue with a high-voltage vehicle needs to be escalated to an HVT or HVE.
- The Workshop Procedure Plan can be accessed online through ServiceNet.




VE / transfer responsibility
Assign HVT and transfer responsibility

3.2 Reporting Requirements for a Vehicle in a Collision

In an instance where a high-voltage vehicle has been involved in an accident and the customer makes contact with the dealership, the customer should be instructed to bring the vehicle to the nearest Audi Certified Collision Center.

- The standard reporting requirements for a vehicle that has been in a collision must be followed for a high-voltage vehicle.
- These reporting requirements are found in the brochure included with the high-voltage vehicle, as is standard with all Audi vehicles.

3.3 Battery Classification Test

The battery classification test is used to determine whether or not the high-voltage battery is in a critical or non-critical state. The procedure for the battery classification test can be found on ODIS.

- The battery classification test examines the battery from three dimensions:
  - Visual Inspection: is there any visual damage to the lithium-ion battery?
  - Functional Inspection: are there any functional abnormalities of the lithium-ion battery?
  - Thermal Inspection: are there any thermal abnormalities on the lithium-ion battery?
- The results of the test classify the battery into one of three categories:
  - Normal (non-critical): there is no functional damage to the battery.
  - Warning (may be critical): there is damage to the battery and the battery may react.
  - Danger (critical): the damaged battery is already reacting.

For transportation, a “Lithium-ion Battery Evaluation for Ground Transportation” form must be completed for each module/battery.

Determining Battery State Classifications

	Normal	Warning/May Be Critical	Danger
Visual Inspection	No mechanical damage or loss of fluids.	There is mechanical damage, leakage of fluids and a penetrative smell.	There is smoke, vapor or fire coming from the battery.
Functional Inspection	Battery can be diagnosed and there are no critical entries in the fault memory.	The battery cannot be diagnosed or there are critical entries in the fault memory.	Do not attempt a function inspection if there is smoke, vapor or fire coming from the battery.

Thermal Inspection	The temperature is within the tolerance range.	The temperature is within the tolerance range after degassing or the temperature exceeds the tolerance temporarily.	The temperature exceeds the tolerance range.

Quarantine Dimensions & Temporary Battery Handling

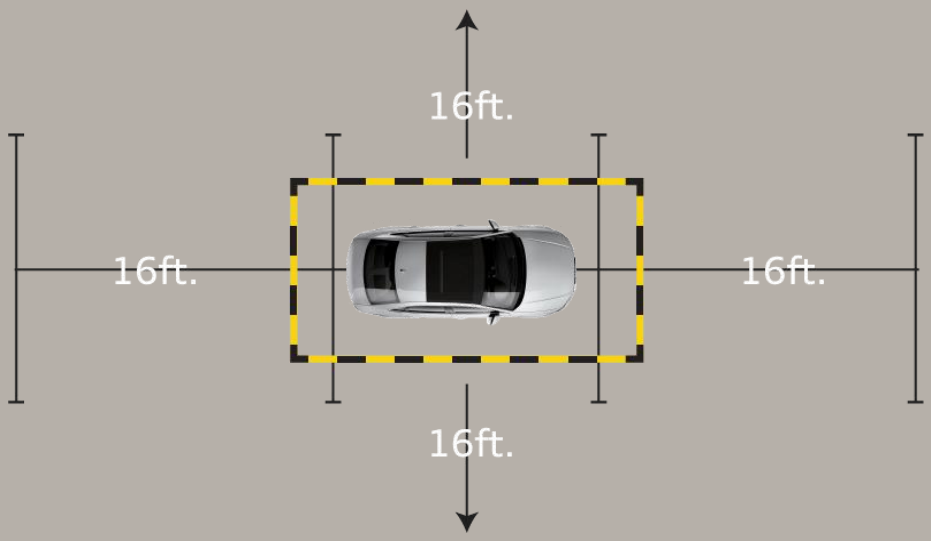
This section provides an overview of the recommended dimensions for a quarantine zone and outlines best practices for temporarily storing a high-voltage battery.

4.1 Recommended Quarantine Area

> The following guidelines designate an area as a quarantine zone. Any battery classified as “Warning” or “Danger” must be moved in to the quarantine area, if safely possible. The process for removing a “Warning” or “Danger” battery must be coordinated by an HVE.

Quarantine Zone Guidelines

1. Park the vehicle outside, as far away as reasonably possible from the building and other established structures, with the following safe distance dimensions (see diagram below for a visual outline):
   > Minimum unobstructed vehicle parking area (shown as yellow and black box around vehicle): 16 ft. x 8 ft.
   > Minimum safety distance between parking area and surrounding buildings, etc.: 16 ft.
2. The surface area must be sealed for vehicles involved in a collision or a drip tray must be placed under the vehicle where the battery is located.
3. The vehicle must be covered with a waterproof tarp.
4. The vehicle must be secured from unauthorized access by barricades, ropes, or caution tape, the area must be marked with the designated warning labels (see warning labels in Section 8.3), and a warning sign must be posted in the area (see recommended signage below).



Recommended Warning Sign

THIS IS NOT A SALES AREA

DO NOT ENTER

SPECIFICALLY AUTHORIZED EMPLOYEES ONLY

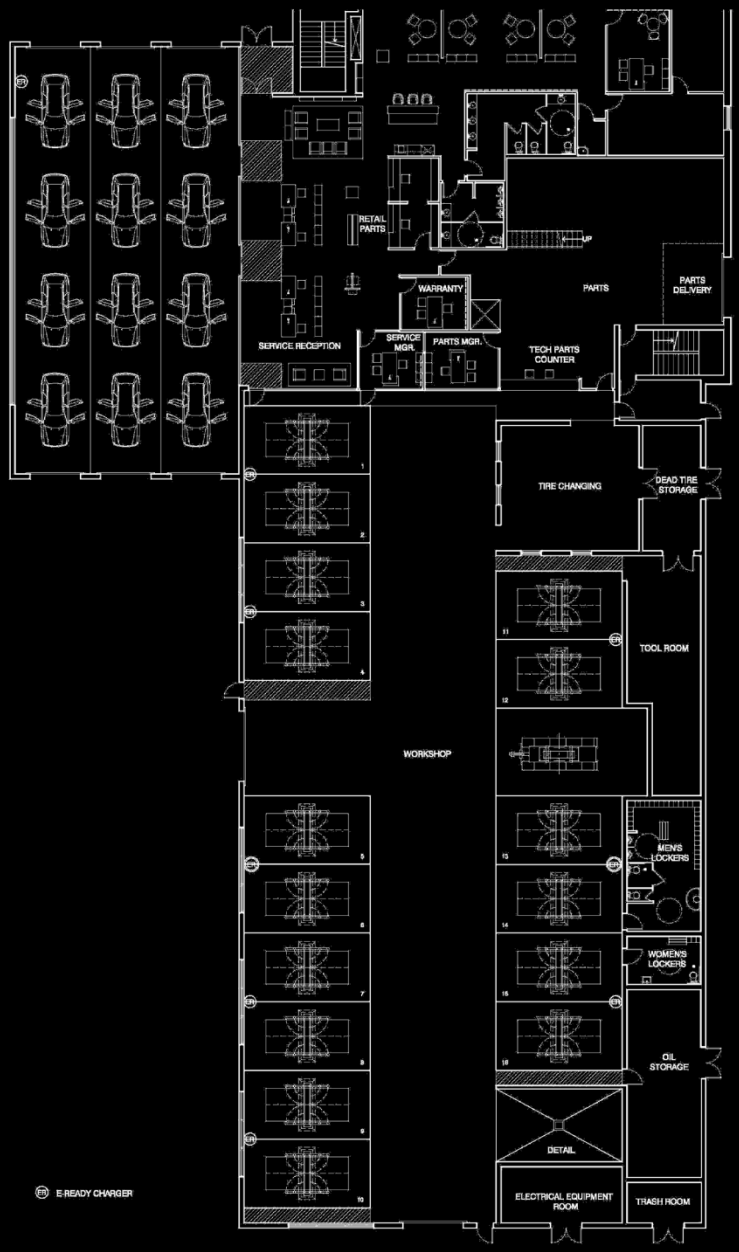
SMOKING IS PROHIBITED

4.2 Temporary Battery Handling & Storage

- Non-critical, high-voltage batteries can be temporarily stored with less restrictions than the quarantine zone recommended for critical batteries. **Note that high-voltage batteries should only be stored temporarily for repair purposes and should not be stockpiled at the dealership.**
  - A temporary storage timeframe should be included. Example:
    - "Temporary battery/module storage should not exceed 30 days. Dispositions should be available within 1 day of claim submission" – EHS
- To ensure that storage of a high-voltage vehicle does not create a hazard, follow the storage instructions specified in the safety data sheet (SDS) for the particular battery, in addition to the temporary storage guidelines outlined below.
  - Use the online EH&S system to access Audi SDSs.
    - Access EH&S through the following platforms:
      - Access Audi – App Links – Parts –Safety Data Sheets.
      - Parts on Command – Safety Data Sheets.
- When performing service on a high-voltage vehicle, pull the SDS for the relevant part number and follow any handling and storage instructions provided. More information on servicing a high-voltage vehicle can be found in Section 6.
- At a minimum, the following guidelines must be followed for the temporary storage of high-voltage batteries.

  Temporary Storage Guidelines:

  1. Mark the battery storage area with the appropriate warning labels. See the labels in Section 8.3.
  2. Do not store the battery out in the open or in areas where repairs are being performed.
  3. Protect the battery from mechanical and thermal exposure.
  4. Store the battery in an area not accessible to other technicians, dealer staff or customers.
  5. The storage area should be adequately ventilated.
  6. A Class B fire extinguisher should be present in the near vicinity.
- Dealerships should ensure compliance with OSHA's Material Handling and Storage



regulation 29 C.F.R. § 1910.176(b).

Battery Handling

Reference this section for detailed instructions on moving and handling a high-voltage vehicle and its battery upon arrival at the dealership.

5.1 Equipment Needed

Forklifts

> Forklifts are required to move a high-voltage battery. Before a battery is delivered to the dealership, ensure you have a forklift. If your dealership does not have a forklift, you must either rent, lease or purchase a forklift. See Section 2.1 for complete details on obtaining and operating a forklift.

Battery Replacement Tool Kit

> When a replacement battery is ordered through VWGoA Parts Logistics, the tools required to prepare the replacement high-voltage battery for installation will be kitted and shipped with the replacement high-voltage battery. This process will take place automatically and there is no need to contact the Audi Tools and Equipment Program to request this tool kit.

> Prior to shipping, you will be contacted by the High-Voltage Battery Distribution Center to complete a Mandatory Loaner Agreement.

  > NOTE: This agreement must be filled out and returned to the High-Voltage Battery Distribution Center before shipping of the high-voltage battery can take place. The use of these tools, as outlined in ELSA, is critical in avoiding serious damage to the high-voltage battery. Instructions and return FAX number will be provided by the High-Voltage Battery Distribution Center at that time.

> There is no cost for return shipping of this tool kit. Return shipping labels and instructions will be provided inside the tool kit shipping container.

5.2 Unloading a Battery from the Transport Vehicle

1. Upon the battery's arrival to the dealership, use the forklift to move the shipping container out of the transport vehicle.
2. Use the forklift to transport the battery in its shipping container to the designated temporary storage area within the workshop.
   > This process is outlined in the flow diagram below.

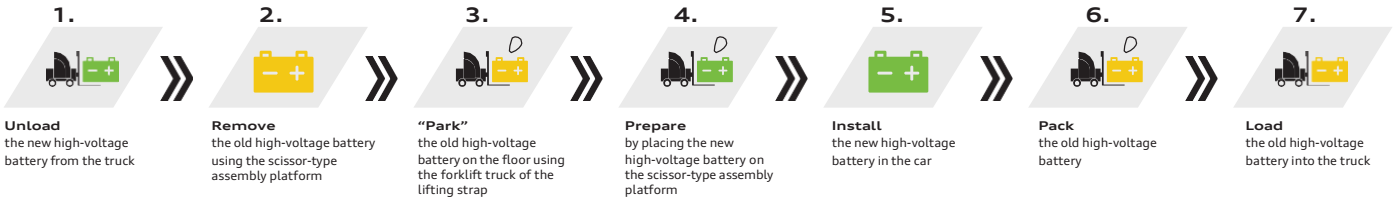
5.3 Packing an Old Battery Pack or Module in the New Battery Pack or Module's Shipping Container

1. Unbolt the battery from the vehicle and lower it onto the transmission table. Follow the removal procedure outlined in group 93 in the repair manual found on ElsaPro.
   > Remove the transmission table and the old battery from underneath the vehicle.
2. Use the battery lifting kit to connect the battery to the forklift.
   > The battery lifting kit will be delivered with the new battery's shipping container. See Section 5.1 for more details on the battery lifting kit.
3. Forklift the old battery off the transmission table and place it on floor.
   > Remove the battery lifting kit from the old battery.
4. Connect the battery lifting kit to the new battery and forklift the new battery to the transmission table, then remove the lifting kit from the battery.
5. Connect the battery lifting kit to the old battery and forklift the old battery into the shipping container the new battery arrived in.
6. Store the old battery, now packed in the shipping container, in the designated temporary storage area until the battery is picked up.

   Note that damaged modules are subject to different labeling and packing requirements under 49 C.F.R. § 1910.173.

5.4 Removing an Old Battery from the Dealership or Collision Center

1. Upon the arrival of the transport vehicle, use the forklift to carry the battery in its shipping container from the temporary storage area to the transport vehicle.
2. Load the battery into the vehicle using the forklift.
3. Ship the battery lifting kit that arrived with the new battery with the battery container.



Battery Inspection & High-voltage Vehicle Repair

This section provides a process flow to follow when inspecting both a non-critical battery and a high-voltage vehicle that is faulty or accident-damaged. Note that during the launch period all instructions will be given through TAC.

6.1 Process for Inspecting & Replacing a Non-Critical Battery

In the event an e-tron is undergoing normal inspection and a non-critical repair is identified that will require removal and replacement of the battery pack or a battery module, the following steps must be taken to ensure safe battery handling and temporary storage:

1. Report the repair to the Technical Assistance Center and submit the warranty claim per the normal operating procedures.
   - > The HV battery classification test must be performed for all battery replacements. See ELSA repair manual.
   - > TSB 2049384 must be followed by the technician along with the attachment found in the TSB, which should be filled out and completed.
   - > This protocol will go into effect when the launch period has ended.
   - > The HV battery must remain in the vehicle until the replacement part(s) is available to complete the repair.
   - > If the battery/module is required for analysis the request will be made through the Warranty Parts Portal
2. TAC must release the high-voltage battery part.
   - > A TFM can release a HV battery if TAC is unavailable.
   - > The dealer must provide the part number required for release.
   - > Use the standard process for supplying replacement parts through ETKA, which can be accessed through iAudi.
3. Before the battery is delivered to the dealership, ensure you have a forklift.
   - > If your dealership does not have a forklift, you must pursue one of the options outlined in Section 2.2.
4. When the new battery is delivered to the dealership, adhere to the guidelines for temporarily storing a high-voltage battery.
   - > Note that high-voltage batteries should only be stored temporarily for repair purposes and should not be stockpiled at the dealership.
     - > A temporary storage time frame should be included. Example:
       - “Temporary battery/module storage should not exceed 30 days. Dispositions should be available within 1 day of claim submission” – EHS
   - > For complete details on temporary storage, see Section 4.2.

     Temporary Storage Guidelines:

     1. Mark the battery storage area with the appropriate warning labels. See the labels in Section 8.3.
     2. Do not store the battery out in the open or in areas where repairs are being performed.
     3. Protect the battery from mechanical and thermal exposure.
     4. Store the battery in an area not accessible to other technicians or customers.
     5. Store the battery at ground level.

6. The storage area should be adequately ventilated.
7. A Class B fire extinguisher should be present in the near vicinity.

5. The HVT removes the existing battery or module from the vehicle and places it in the original packaging for the new battery or module.
   > If the battery will not be immediately shipped, follow the temporary storage guidelines.
   > When performing service on a high-voltage vehicle, pull the SDS for the relevant part number and follow any handling and storage instructions provided.
   > Use the online EH&S system to access Audi SDSs.
6. After completing the battery replacement, submit the warranty claim if applicable.
   > If the battery/module is required for analysis the request will be made through the Warranty Parts Portal (WPP)

   > Based off whether or not the battery is needed for analysis, follow either Step 7 or Step 8 below.
7. If the non-critical battery is REQUIRED for analysis, it will appear in the Warranty Parts Portal under the "Photo" tab.
   > A photo request for the non-critical battery/module will be made so the part number and serial information is identified.
   > A Lithium-ion Battery Evaluation for Ground Transportation form is required for each battery/module
   > If the non-critical battery/module is not required for analysis a final disposition will be provided in the WPP
   > If the non-critical battery/module is required for analysis then follow the same Warranty Return process that you would for any other HAZMAT warranty parts.
   > Shipping instructions will be provided when the claim is submitted and approved for payment.
   > You will receive a shipping label to ship the battery through the WPP.
   > Ship the used battery in the new battery's shipping container. See Sections 7.2 and 7.4 for more details.
8. If the non-critical battery or module is NOT NEEDED for analysis, it will appear in the Warranty Parts Portal under the “Scrap/Core/Recycle” tab.
   > Dealer contacts Redwood Materials at audi@redwoodmaterials.com (see Section 8.1 for more info)
   > Dealer is responsible for proper marking and shipping to Redwood Materials.
   > Ship the used battery or module in the new battery or module’s shipping container. See Sections 7.2 and 7.4 for more details.
   > The transportation and recycling services are offered at no-cost to dealers for batteries and modules replaced under warranty. (see Section 8.1 for more info)
9. Dealers are responsible for managing batteries in accordance with state-specific hazardous waste requirements while pick-up is pending.

6.2 Process for Inspecting a Faulty or Accident-Damaged High-voltage Vehicle

In an instance where a high-voltage vehicle has been involved in an accident and the customer makes contact with the dealership, the customer should be instructed to bring the car to the body shop. The following steps must be taken to ensure safe battery handling.

1. Ensure the HVT is onsite for the arrival of a faulty or accident-damaged vehicle.
2. Follow the Workshop Procedure Plan.
   > Outlined in Section 3.1.
3. Follow the reporting protocol and perform the battery classification test.
   > Conduct the regular reporting requirements for a vehicle in a collision, outlined in Section 3.3.
   > The HVT performs the battery classification test.
4. The results of the battery classification test will determine the appropriate next step, detailed in Sections 6.3 – 6.5.

6.3 Process for Repairing an Accident-Damaged High-voltage Vehicle with a Battery Classified as “Normal”

If a high-voltage vehicle needs a repair, and the battery is classified as “Normal”, the vehicle can be removed from the quarantine zone and the below steps must be followed to repair the vehicle.

1. Determine if the battery will need to be de-energized to perform the necessary repairs.
   - The high-voltage system must be de-energized to perform the following work:
     - Welding, grinding or cutting work near high-voltage components.
     - Any repair where ELSA or ODIS instructs to de-energize the HV system.
2. If the vehicle DOES NOT need to be de-energized, repair the e-tron at the body shop.
3. If the vehicle DOES need to be de-energized, the HVT can do one of the following:
   - The high-voltage battery must be de-energized according to the Guided Fault Finding routine. The Guided Fault Finding routine can be found in ODIS under the Special Functions tab.
     1. De-energize the battery at the dealership before sending the vehicle to the body shop.
     2. Travel to the body shop to perform the de-energization.
4. If the battery needs to be de-energized, determine if the battery will also need to be removed from the vehicle.
   - If the battery DOES NOT need to be removed, the HVT will re-energize the battery at the dealership or collision center after the repairs are completed.
   - If the battery DOES need to be removed, the HVT can do one of the following:
     1. The HVT can remove the battery at the dealership and send the battery and the vehicle to the body shop for repair. Both components will then be returned to the dealership, where the HVT will re-install and re-energize the battery. This is the AoA-preferred method.
     2. The HVT can travel to the body shop to remove the battery. When repairs are completed, the HVT will return to the collision center to re-install and re-energize the battery.

6.4 Process for Removing a Battery Classified as “Warning/May be critical”

If a high-voltage vehicle is faulty or accident-damaged, and the battery is classified as “Warning/May be critical”, follow the below steps to safely remove the battery from the vehicle.

1. Upon the battery receiving a “Warning/May be critical” classification, do not immediately attempt to remove the battery from the vehicle.
2. Notify an HVE of the “Warning/May be critical” classification.
   - Open a case with the Technical Assistance Center (TAC). See Section 8.2 for how to access TAC.
   - Technical Assistance Center: 1 (800) 388-2834
   - The quarantine will be started and the instructions will be given through the TAC case.
   - TAC will verify the classification ÒòĹèļ ĭ ľÒļÒęĹĂęè and, if verified as damaged and/or in a possible critical state, the case will be escalated to your area TFM/EFK.
   - Contact your local Technical Field Manager (TFM). See Section 8.2 for details on contacting a TFM.

3. See Section 7 for additional information on packaging and shipments.
   - In an instance where a battery or a module is classified as “critical”, please contact Redwood Materials. (see Section 8.1 for more info)
4. Observe the battery in the vehicle for (5) days, following the below observation protocol.
   - Observation of the battery requires regularly checking the temperature and voltages of the battery.
5. Regularly inform the HVE on the battery’s condition.
6. Repeat the (5) day observation routine until the battery condition remains constant.
7. Once the battery condition is constant, TAC or TFM will provide further instructions

after review of quarantine results.

8. The HVE will:
   - Transport the vehicle from the quarantine area into the workshop.
   - Pack the critical battery or module(s) in the recycling or transport box(es) provided by Redwood Materials.
   - Arrange for proper shipping of the removed battery or module(s) through Redwood Materials.
   - See Section 8.1 for info about the AoA HV Battery Recycling Program and Redwood Materials.

6.5 Immediate Response Actions for a Battery Classified as “Danger”

If a high-voltage vehicle is faulty or accident-damaged, and the battery is classified as “Danger”, immediately follow the below steps.

1. Call the local fire department immediately.
2. If safely possible, quarantine the vehicle.

Packaging & Shipments

Packing and shipping a complete battery pack or battery module requires special evaluation and care. Batteries or modules classified as “Normal” or “Warning” can be shipped under certain circumstances. A battery classified as “Danger” cannot be transported.

7.1 Battery Replacement Tool Kit

- When a replacement battery is ordered through VWGoA Parts Logistics, the tools required to prepare the replacement high-voltage battery for installation will be kitted and shipped with the replacement high-voltage battery. This process will take place automatically, and there is no need to contact the Audi Tools and Equipment Program to request this toolkit.
- Prior to shipping, you will be contacted by the High-Voltage Battery Distribution Center to complete a Mandatory LoanerAgreement.
- NOTE: This agreement must be filled out and returned to the High-Voltage Battery Distribution Center before shipping of the high-voltage battery can take place. The use of these tools, as outlined in ELSA, is critical in avoiding serious damage to the high-voltage battery. Instructions and return FAX number will be provided by the High-Voltage Battery Distribution Center at that time.
- There is no cost for return shipping of this tool kit. Return shipping labels and instructions will be provided inside the toolkit shipping container.

7.2 Non-Critical Battery Packaging

> If a non-critical, high-voltage battery needs replacement:

> > The packaging for the new high-voltage battery can be reused for the non-critical battery being removed.

> If a module in a non-critical, high-voltage battery needs replacement:

> > The packaging for the new high-voltage module can be reused for the non-critical module being removed.

> To obtain replacement packaging, contact VWGoA Parts Logistics at VWoAPackaging@vw.com

7.3 Critical Battery Packaging

> If a critical battery or module needs to be removed from the vehicle:

> > Contact Redwood Materials to obtain a critical shipping container.

> > > audi@redwoodmaterials.com

> > The HVE is qualified to package the battery or module in the transport box.

7.4 Non-Critical Battery Shipping – Battery under Warranty

> After completion of battery repairs or replacement, submit the warranty claim if applicable.

1. If the non-critical battery is REQUIRED for analysis, it will appear in the Warranty Parts Portal under the “Requested” tab.
   > Follow the Warranty Return process that is standard for any other HAZMAT warranty parts.
   > Shipping instructions will be provided when the claim is submitted and approved for payment.
   > The dealer will receive a supplier label to ship the battery.
2. If the non-critical battery is NOT NEEDED for analysis, it will appear in the Warranty Parts Portal under the “Scrap/Core/Recycle” tab.

   > Dealer contacts Redwood Materials at audi@redwoodmaterials.com (see Section 8.1 for more info)

   > Dealer is responsible for proper marking and shipping to Redwood Materials.

   > The transportation and recycling services are offered at no-cost to dealers for batteries and modules replaced under warranty.

7.5 Critical Battery or Module Shipping

> In an instance where a battery or module is classified as “critical”, contact Redwood Materials. Reference the steps in Section 6.4 to remove a battery classified as "Warning/May be Critical".

> Shipment of the critical battery or modules see Section 7.3.

Appendix

8.1 Contacts

- Forklifts
  - To lease & purchase:
    - Jim Hammond at Valley Industrial
    - jhammond@valleyindustrialtrucks.com // (330) 506-2896
  - General questions:
    - Jesus Rodriguez Gonzalez - Parts Program Specialist, Audi of America
    - Jesus.RodriguezGonzalez@audi.com // (703) 364-7153
- Battery Shipment
  - Redwood Materials - audi@redwoodmaterials.com
- Audi Warranty
  - Transportation and recycling services are offered at no-cost to dealers for batteries and modules replaced under warranty.
  - No need to submit any claim for transportation and recycling costs.
  - (866) 677-2834
- Technical Support
  - Technical Assistance Center
    - 1 (800) 388-2834
  - Battery Observation Protocols
    - TAC
  - Download Safety Data Sheets through EH&S
    - Access Audi – App Links – Parts – Safety Data Sheets
    - Parts on Command – Safety Data Sheets
  - Technical Field Managers
    - Dealers can contact their direct Technical Field Managers as needed for technical process questions.
- VWGoA Parts Logistics
  - Obtain replacement Packaging: VWoAPackaging@vw.com
- AoA HV Battery Recycling Program
  - Program Guide and PDF forms can be found:
    - ServiceNet -> Electric/PHEV Vehicles

8.2 Helpful Links

- Technical Assistance Center: Access Audi – Service – ElsaPro – Technical Assistance Icon

Available through iAudi:

- ElsaPro
- ETKA
- Warranty Parts Portal
- ServiceNet

8.3 Audi Academy HV Training Courses

- 670154 Audi Hybrid Aware
- 990442 2016 Audi A3 Sportback e-tron Introduction (3 day)
- 990592 2019 Audi e-tron quattro and HVE
- 970192 Audi High Voltage Technician (HVT)
- 970292 Audi High Voltage Expert (HVE)

> Audi Warranty Home>Resource Center->Dealer Processes & Guide -> HV Battery Recycling Program Guide and forms

> POC-> Web Links

8.4 Warning & Prohibition Labels

VAS 6786

VAS 6649

VAS 6881
KEEP OFF

VAS 6650A
DO NOT SWITCH ON

VAS 6871
DO NOT PLUG IN

VAS 6882