



2018

FOCUS ELECTRIC



BATTERY REMOVAL GUIDE

SECTION 1: Focus Electric Battery Removal Guide

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WARNING:

ELECTRIC VEHICLES DAMAGED BY A CRASH MAY HAVE COMPROMISED HIGH VOLTAGE SAFETY SYSTEMS AND PRESENT A POTENTIAL HIGH VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION AND WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) INCLUDING HIGH VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. ISOLATE THE HIGH VOLTAGE SYSTEM AS DIRECTED BY THE FORD EMERGENCY RESPONSE GUIDE FOR THE VEHICLE. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

Upper Battery High Voltage Service Disconnect



WARNING:

TO PREVENT THE RISK OF HIGH VOLTAGE SHOCK, ALWAYS FOLLOW PRECISELY ALL WARNINGS AND SERVICE INSTRUCTIONS, INCLUDING INSTRUCTIONS TO DEPOWER THE SYSTEM. THE HIGH VOLTAGE SYSTEM UTILIZES APPROXIMATELY 300 VOLTS DC, PROVIDED THROUGH HIGH VOLTAGE CABLES TO ITS COMPONENTS AND MODULES. THE HIGH VOLTAGE CABLES AND WIRING ARE IDENTIFIED BY ORANGE HARNESS TAPE OR ORANGE WIRE COVERING. ALL HIGH VOLTAGE COMPONENTS ARE MARKED WITH HIGH VOLTAGE WARNING LABELS WITH A HIGH VOLTAGE SYMBOL. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

PRIOR TO SERVICING VEHICLE, REFER TO THE FOCUS ELECTRIC EMERGENCY RESPONSE GUIDE LOCATED AT WWW.MOTORCRAFTSERVICE.COM FREE RESOURCES> QUICK GUIDES> FOCUS ELECTRIC MODIFIERS GUIDE.



WARNING:

SERVICE OF THE HIGH VOLTAGE SYSTEM ON THIS VEHICLE IS RESTRICTED TO QUALIFIED PERSONNEL. THE REQUIRED QUALIFICATIONS VARY BY REGION. ALWAYS OBSERVE LOCAL LAWS AND LEGISLATIVE DIRECTIVES REGARDING ELECTRIC VEHICLE SERVICE. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

TO PREVENT THE RISK OF HIGH-VOLTAGE SHOCK, ALWAYS FOLLOW PRECISELY ALL WARNINGS AND SERVICE INSTRUCTIONS INCLUDING INSTRUCTIONS TO DEPOWER THE SYSTEM. THE HIGH-VOLTAGE SYSTEM UTILIZES APPROXIMATELY 300 V DC, PROVIDED THROUGH HIGH-VOLTAGE CABLES TO ITS COMPONENTS AND MODULES. THE HIGH-VOLTAGE CABLES AND WIRING ARE IDENTIFIED BY ORANGE HARNESS TAPE OR ORANGE WIRE COVERING. ALL HIGH-VOLTAGE COMPONENTS ARE MARKED WITH HIGH-VOLTAGE WARNING LABELS WITH A HIGH-VOLTAGE SYMBOL. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

NEVER INSTALL THE SERVICE DISCONNECT PLUG WHEN A HIGH-VOLTAGE SERVICE COVER IS REMOVED. ALWAYS INSTALL THE COVER PRIOR TO CONNECTING THE SERVICE DISCONNECT PLUG. THE COVER PREVENTS INADVERTENT CONTACT WITH THE HIGH VOLTAGE WHICH IS PRESENT AT SEVERAL POINTS UNDER THE COVER. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.



WARNING:

DISCONNECT THE 12 V BATTERY BEFORE SERVICING THE DIRECT CURRENT TO ALTERNATING CURRENT (DC-AC) INVERTER OR ALTERNATING CURRENT (AC) POWERPOINT TO PREVENT THE RISK OF HIGH VOLTAGE SHOCK. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY.

NOTE:

Lower the rear 60% seat backrest to access the upper battery high voltage service disconnect.

1. Locate the seat backrest release lever at the top of the backrest.
2. Push the release lever and lower the rear seat backrest.

Battery Removal Guide



3. Remove the cover to access the upper battery high voltage service disconnect.



4. Press the release tab at the top of the upper high voltage battery service disconnect and pull the release handle down approximately 45 degrees.

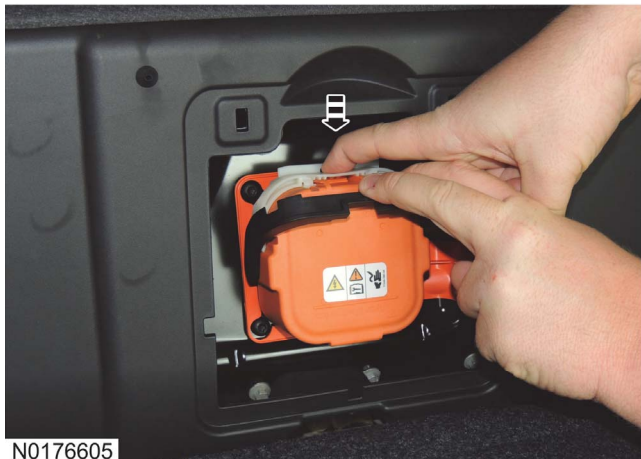
Battery Removal Guide



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5. Press the release tab again and pull the handle downward an additional 45 degrees, to the fully released position. Pull the handle to remove the upper battery high voltage service disconnect.



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Lower Battery High Voltage Service Disconnect

NOTE:

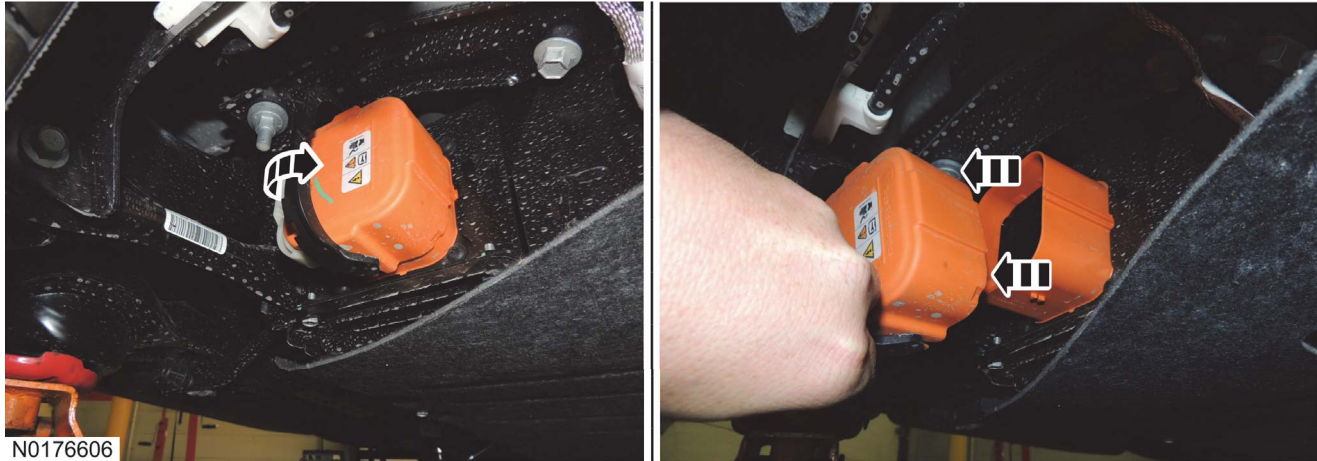
The lower battery high voltage service disconnect is removed in the same way as the upper battery high voltage service disconnect. To gain access to the lower battery high voltage service disconnect, raise the rear of the vehicle using a suitable jack.

NOTE:

The lower battery high voltage service disconnect is located on the passenger side of the vehicle near the rear tire.


1. Remove the parking brake cable bracket retainer and position the parking brake cable and bracket aside.
2. Press the release tab at the rear of the service disconnect, and rotate the release handle approximately 45 degrees towards the front of the vehicle.
3. Press the release tab again, and rotate the release handle another 45 degrees to the fully released position.
4. Pull the handle to remove the lower battery high voltage service disconnect.


Battery Removal Guide



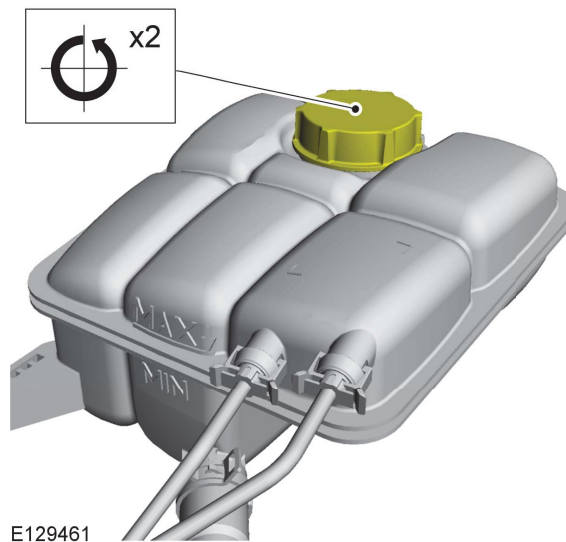
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High Voltage Upper Battery Removal — Electric Vehicle

-  **WARNING:**
THE HIGH VOLTAGE SYSTEM MAY RETAIN A DANGEROUS LEVEL OF VOLTAGE FOR A SHORT TIME AFTER THE SERVICE DISCONNECT HAS BEEN REMOVED. WAIT 5 MINUTES FOR THE VOLTAGE TO DISSIPATE BEFORE BEGINNING SERVICE. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

-  **WARNING:**
DEPOWERING THE HIGH VOLTAGE SYSTEM DOES NOT DISSIPATE THE HIGH VOLTAGE INSIDE THE BATTERY. THE BATTERY PACK WILL REMAIN LIVE AND DANGEROUS.

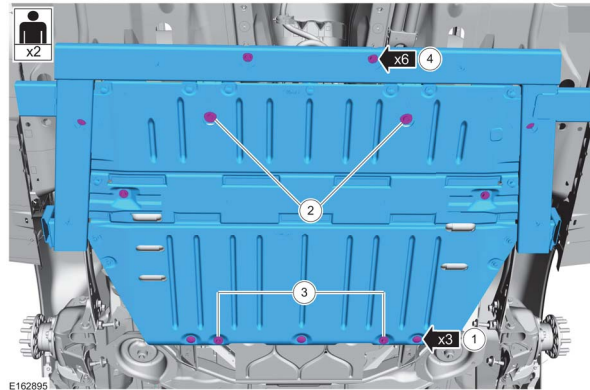
Remove the cooling system degas bottle cap.



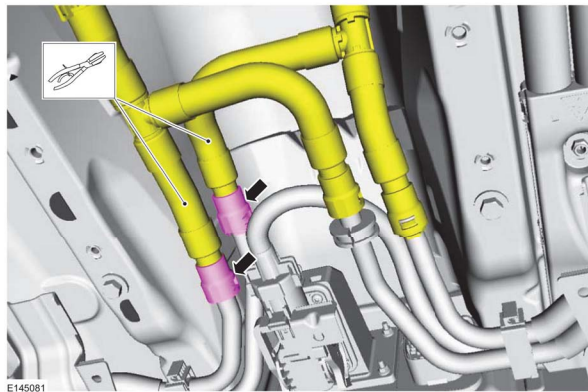
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- Remove the high voltage lower battery cover.

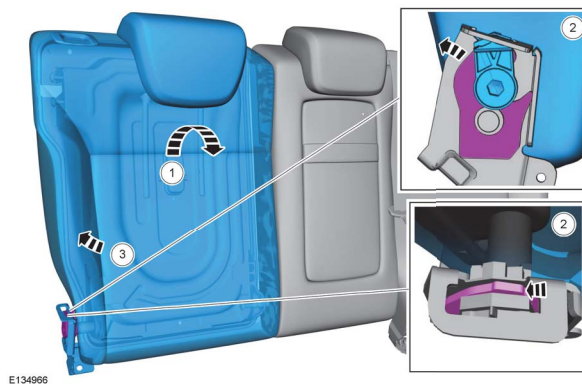
Battery Removal Guide



3. Disconnect the two high voltage upper battery cooling hoses and drain the coolant.

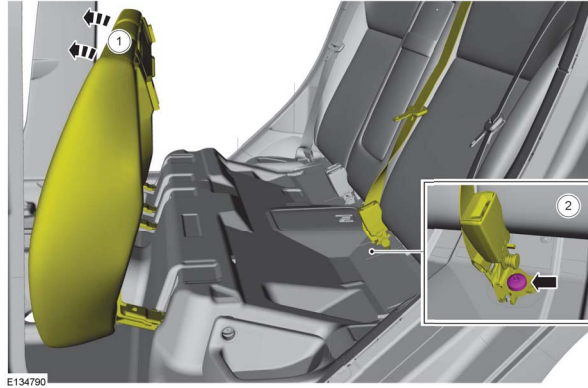


4. Remove the RH seat backrest.
 - a. (1) Lower the backrest.
 - b. (2) Rotate the backrest hinge locking clip rearward and release the backrest.
 - c. (3) Remove the backrest.

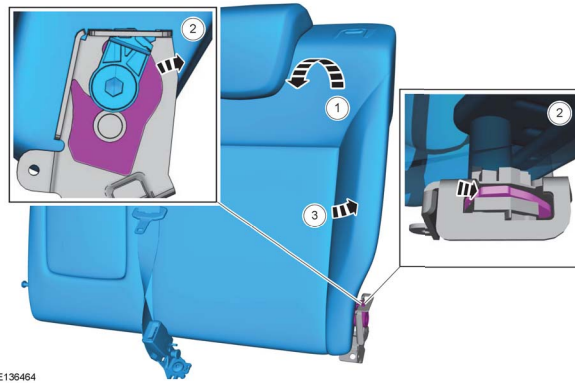


5. Position the rear center safety belt aside.
 - a. (1) Raise the LH rear seat cushion forward.
 - b. (2) Remove the rear center safety belt fastener and position the safety belt aside.

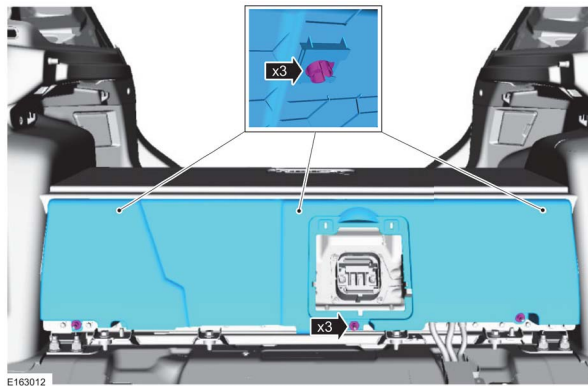
Battery Removal Guide



6. Remove the LH seat backrest.
 - a. (1) Lower the backrest.
 - b. (2) Rotate the backrest hinge locking clip rearward and release the backrest.
 - c. (3) Remove the backrest.



7. Remove the high voltage upper battery cover.

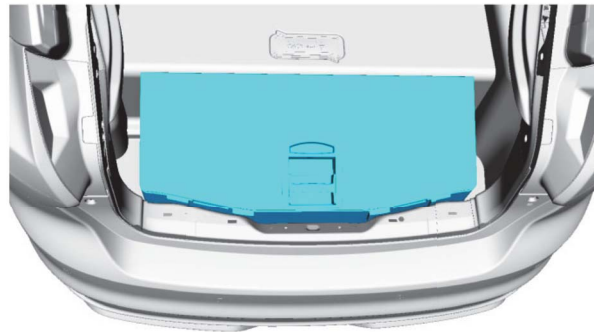


8. Remove the luggage compartment cover.

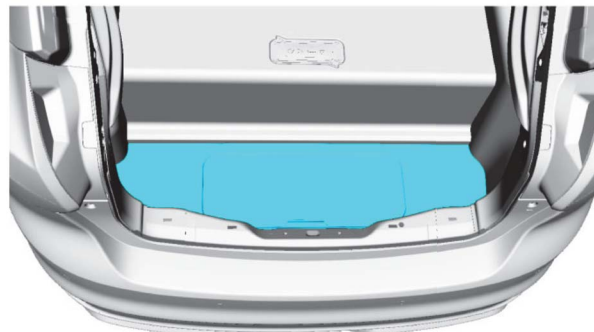
Battery Removal Guide



9. Remove the floor trim cover.

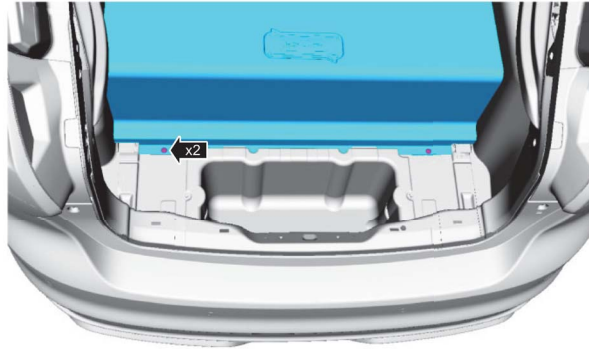


10. Remove the spare tire cover.



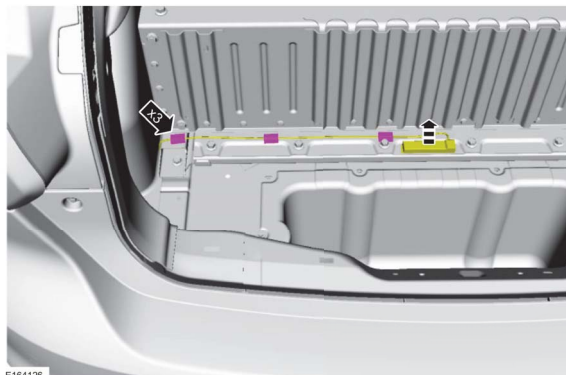
11. Release the 2 pushpins and the upper battery cover.

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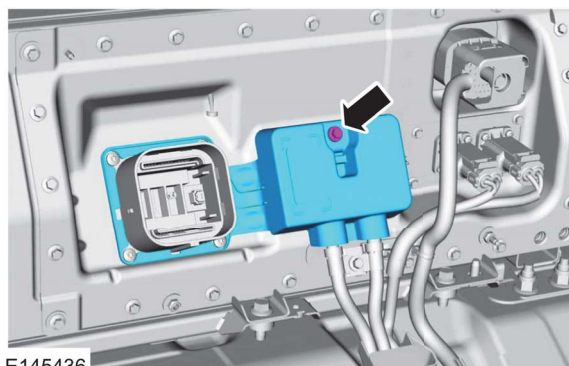
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12. Unclip the keyless rear vehicle antenna from the high voltage upper battery and position the antenna aside.



E164126

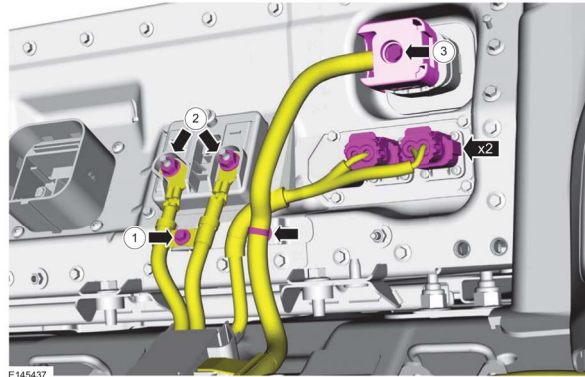
13. Remove the bolt and the high voltage Battery Junction Box (BJB) cover.



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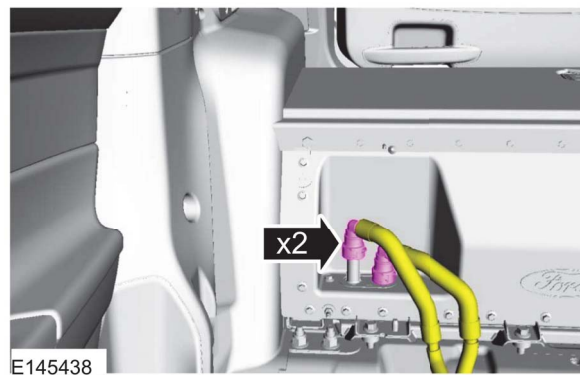
14. Disconnect the high voltage upper battery electrical connections.
- (1) Remove the two nuts at the high voltage BJB and the wire retainer bolt.
 - (2) Disconnect the two high voltage connectors.
 - (3) Disconnect the wire harness retainer from the high voltage upper battery, fully loosen the low-voltage wire connector captured bolt and disconnect the electrical connector.

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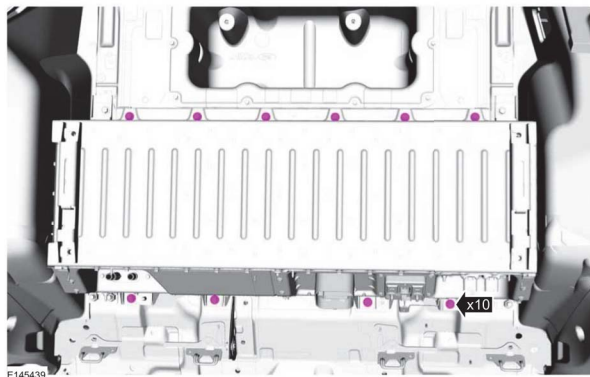


15. **NOTICE:**
To avoid spillage, position a shop towel around the coolant hose to high voltage upper battery connections before disconnecting. Plug the battery's coolant openings after the hoses are disconnected.

Disconnect the high voltage battery coolant connections.

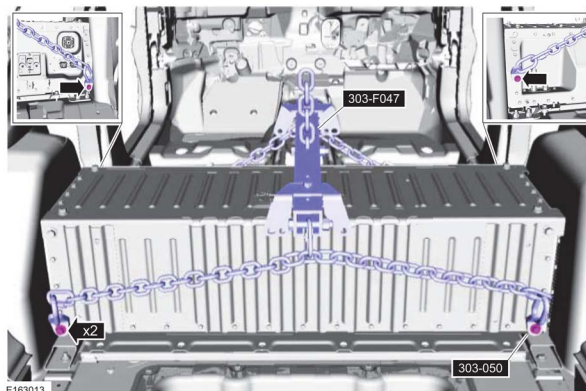


16. Remove the 10 high voltage battery bolts.

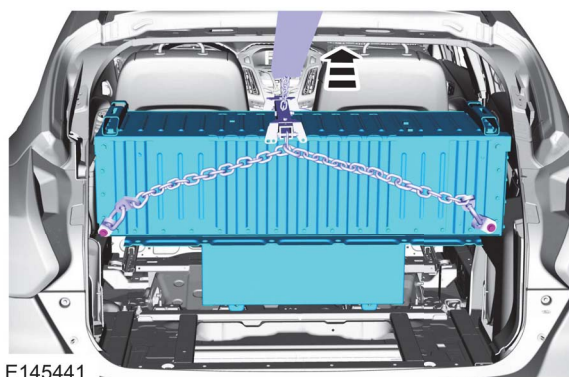


17. **NOTICE:**
Position a shop towel on top of the lift arm to avoid damage to the roof opening panel.
- Install the four 303-050 (lift brackets) to the high voltage upper battery
 - Attach a chain between the lift brackets and the 303-F047 (Engine Lifting Bracket) to 300-OTC1819E (Floor Crane) or equivalent.

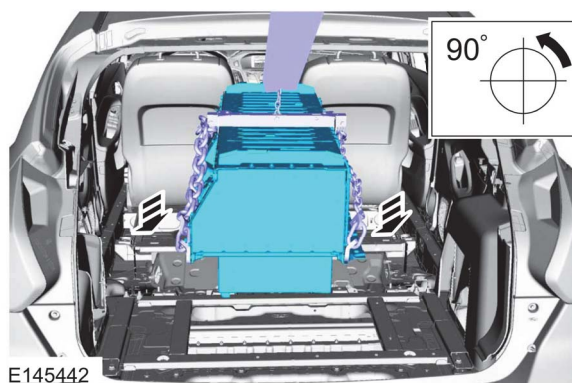
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18. Raise the high voltage upper battery above the floor opening. Position the high voltage upper battery forward until it can rotate.



19. Rotate the high voltage upper battery counterclockwise 90 degrees and remove the battery from the vehicle.



High Voltage Lower Battery Removal — Electric Vehicle

⚠ WARNING:

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Battery Removal Guide

WARNING:

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1.

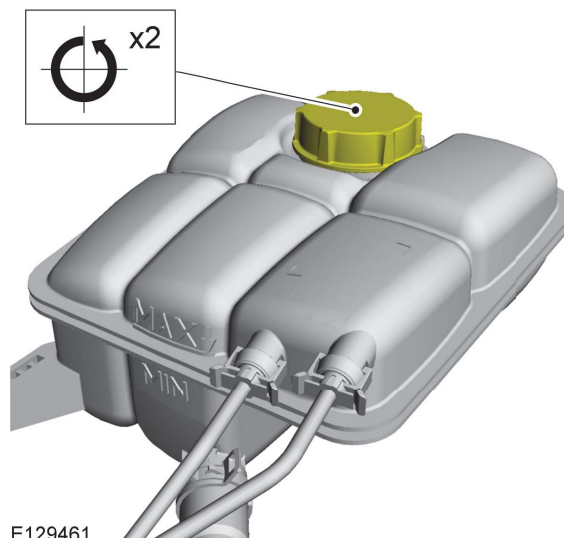
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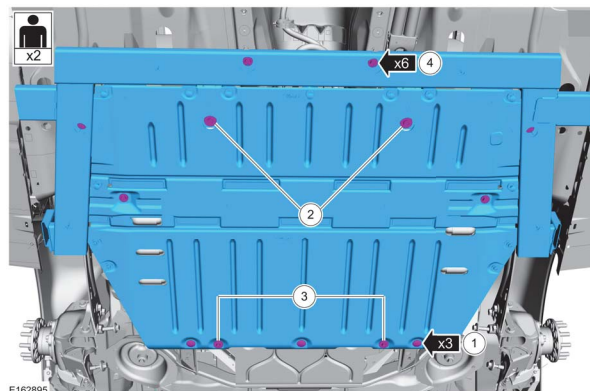
WARNING:

DEPOWERING THE HIGH VOLTAGE SYSTEM DOES NOT DISSIPATE THE HIGH VOLTAGE INSIDE THE BATTERY. THE BATTERY PACK WILL REMAIN LIVE AND DANGEROUS.

Remove the cooling system degas bottle cap.

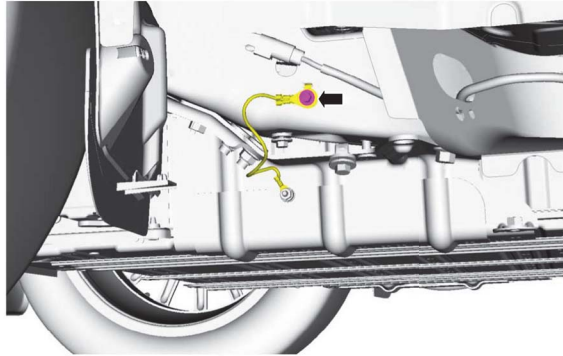


2. Remove the high voltage lower battery cover.



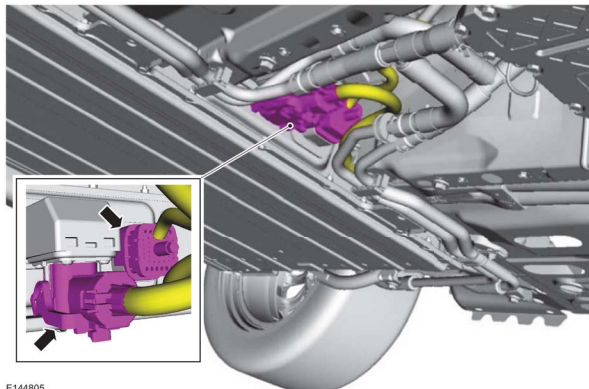
3. Remove the ground bolt from the RH side of the high voltage lower battery.

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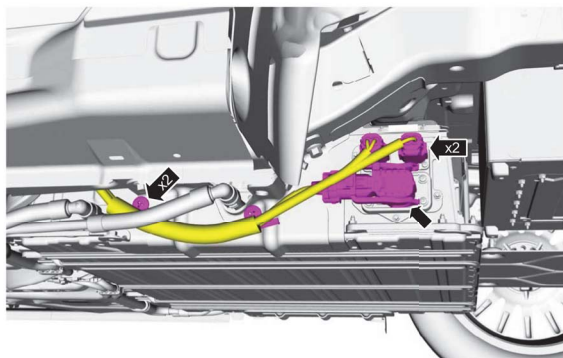
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4. Disconnect the high voltage wire connector at the front of the high voltage lower battery.
 - a. Fully loosen the low-voltage wire connector captured bolt at the front of the high voltage lower battery.
 - b. Disconnect the electrical connector.



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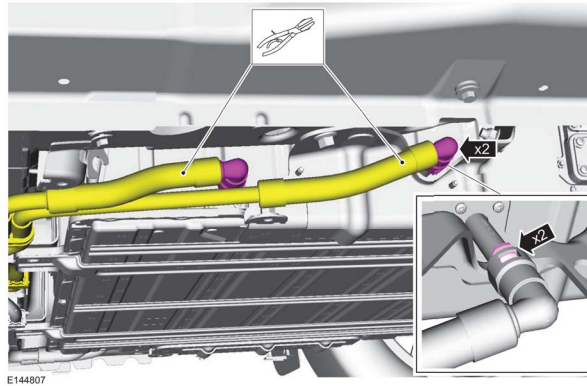
5. Disconnect the 3 high voltage wire connectors and the 2 wire retainers at the LH side of the lower high voltage battery.



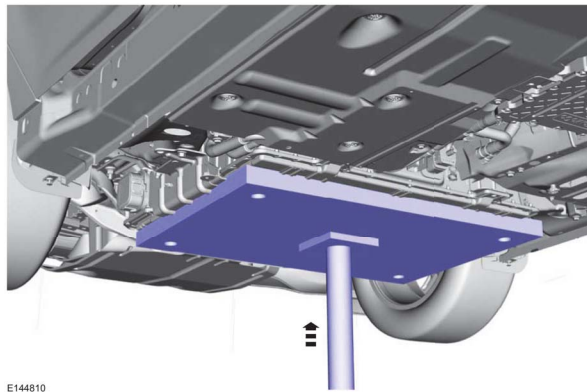
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6. Disconnect the two coolant hoses and drain the coolant at the LH side of the high voltage lower battery.

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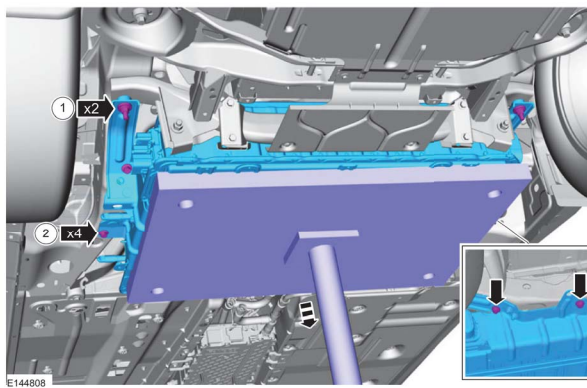


- Position a lift table under the high voltage lower battery.



- Remove the 6 bolts and the high voltage lower battery.

NOTE:
The 2 rear bolts are longer.



SPECIAL NOTE TO DISMANTLERS AND SALVAGE YARDS

If a vehicle with a high voltage battery is to be scrapped, the high voltage battery must be disposed of following all local, state/provincial and federal guidelines.

The Focus electric vehicle's Lithium-Ion High Voltage Battery packs (Li-Ion HVB) are fully recyclable and should be shipped to a permitted recycling facility. The guidelines below are for Li-Ion HVBs which have been removed from the vehicle and discharged.

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General Packaging, Transport, and Recycling Guidelines

Once the battery has been removed from the vehicle and discharged:

- Store the battery components in a building or under shelter so that batteries are kept dry and not exposed to high temperatures.
- Protect battery components from damage (e.g. crushed or punctured).
- It is recommended to ask about the specific packaging requirements for battery shipments to the recycler who will be receiving the battery components in order to avoid inappropriate repacking/stacking of the batteries.
- Batteries should be sorted by type. Keep lead acid batteries, NiMH batteries, and Li-Ion batteries separated from each other (e.g. separate pallets or storage locations).
- Make sure the battery recycler is aware of the battery type. Li-ion batteries cannot be recycled in the same manner as lead acid or NiMH batteries.

Though Ford Motor Company makes no representations or endorsements, there are companies that have the capability to accept, consolidate and recycle undamaged Li-Ion HVBs, and a few are listed below. Contact the appropriate battery manufacturer for additional information.

North America Battery Recyclers

Once the battery has been removed from the vehicle and discharged:

Kinsbursky Brothers, Inc. 125 E. Commercial Street #A Anaheim, CA 92801 Phone: 714-738-8516 Fax: 714-773-4830

Retriev Technologies, Inc. 125 E. Commercial Street #A Anaheim, CA 92801 Phone: 855-4RETRIE (855-473-8743) Fax: 714-278-9745

Applicable Laws/Regulations

The following is a general explanation of certain applicable laws; however, these laws change from time to time, additional regulations are under development and Ford Motor Company makes no representation that this is a complete summary.

Packaging and Transport

The U.S. Department of Transportation (DOT) outlines packaging and shipping requirements for Li-Ion batteries. Certain exceptions on packaging and transportation regulations for large format Li-Ion batteries may be found in 49CFR 173.185 (d) and (g). Make sure that the shipping paperwork is filled out correctly and that the shipment is properly labeled per federal, state, and local laws and regulations. Ensure that you are complying with any record keeping requirements. Generally, under U.S. DOT regulations, Li-Ion batteries are considered a dangerous good and regulated as hazardous materials when transported. Li-Ion batteries are classified as Class 9 hazardous material. Only certified hazardous material shippers should offer transport of a hazardous material. Batteries for recycling should be shipped by ground or vessel only. Do not ship batteries for recycling by air.

NOTE:

A damaged battery (one that is leaking electrolyte from the battery pack) might need to be shipped as a hazardous waste. If you are transporting a damaged battery, utilize a company that specializes in hazardous waste transport and management. Ensure that you comply with all applicable hazardous waste management laws and regulations.

Recycling

40 CFR 261 states that manufactured articles that yield extracts which exceed one or more of the concentration limits of regulated listed constituents, or meets the definition of ignitability, corrosivity or reactivity are defined as hazardous wastes and must be disposed of in accordance with federal and state regulations. Since there are many variations in the specific chemistry of Li-Ion batteries, additional classifications may be necessary to determine if the battery is a hazardous waste. It is the responsibility of the generator to make this determination. Generally, under federal and state law, sealed, Li-Ion batteries may be considered dry cell batteries and therefore may be managed as a universal waste; damaged or leaking Li-Ion batteries may be regulated as hazardous waste under federal and state regulations.