



**2018**  
**FUSION HYBRID**  
**MKZ HYBRID**  
**FUSION ENERGI**



**EMERGENCY RESPONSE GUIDE**

# Table of Contents

<b>FOREWORD .....</b>	<b>2</b>
<b>HYBRID VEHICLE IDENTIFICATION.....</b>	<b>3-4</b>
<b>VIN Layout.....</b>	<b>5</b>
<b>HIGH-VOLTAGE ELECTRICAL DISCONNECT FEATURES.....</b>	<b>6</b>
<b>HIGH-VOLTAGE WARNING DECALS .....</b>	<b>7</b>
<b>HYBRID COMPONENT LOCATION AND IDENTIFICATION.....</b>	<b>8-9</b>
<b>ENERGI COMPONENT LOCATION AND IDENTIFICATION.....</b>	<b>10-12</b>
<b>HIGH-VOLTAGE SERVICE DISCONNECT.....</b>	<b>13</b>
<b>Fusion Hybrid .....</b>	<b>13-14</b>
<b>Fusion Energi.....</b>	<b>15-16</b>
<b>HIGH-VOLTAGE BATTERY PACK.....</b>	<b>16-17</b>
<b>APPROACHING A DAMAGED HIGH-VOLTAGE VEHICLE .....</b>	<b>18-21</b>
<b>Follow Existing Training and Incident Commander Direction .....</b>	<b>18</b>
<b>Approaching a Damaged Vehicle.....</b>	<b>19</b>
<b>If The High-Voltage Battery Case Has Been Ruptured.....</b>	<b>20</b>
<b>Moving Damaged Vehicles - Wrecker Drivers.....</b>	<b>20</b>
<b>Special Note To Salvage Yards .....</b>	<b>20</b>
<b>High Voltage System - Do Not Cut Zones .....</b>	<b>21</b>
<b>DAMAGED VEHICLE GUIDANCE FOR FORD MOTOR COMPANY ELECTRIC AND HYBRID-ELECTRIC VEHICLES EQUIPPED WITH HIGH VOLTAGE BATTERIES.....</b>	<b>22-24</b>
<b>DAMAGED BATTERY ELECTRIC VEHICLE STORAGE PLACARD .....</b>	<b>25</b>

## FOREWORD

The emergency response procedures for the Fusion Hybrid, MKZ Hybrid and Fusion Energi vehicles are similar to those for traditional gasoline-powered vehicles with the addition of special considerations for the high-voltage electric system components.

The Fusion Hybrid, MKZ Hybrid and Fusion Energi vehicles use a conventional gasoline engine in addition to an electric motor to power the vehicle.

- Gasoline is stored in a traditional fuel tank.
- Electricity is stored in a high-voltage battery pack.

The combination of a gasoline engine and electric motor provides for improved performance (V6 performance with a 4-cylinder engine and electric motor), reduced emissions and improved fuel economy. The Fusion Hybrid and MKZ Hybrid high-voltage systems are self contained, never needing to be plugged into an electrical outlet for recharging. The Fusion Energi high-voltage system can be plugged into an electric outlet for recharging to optimize the vehicle's extended electrical range. Both vehicle systems incorporate a generator that charges the high-voltage battery during cruising and braking.

The information in this guide will allow response to emergencies involving the Fusion Hybrid, MKZ Hybrid and Fusion Energi vehicles to be as safe as non-hybrid vehicles.

The Fusion Hybrid, MKZ Hybrid and Fusion Energi vehicles have been designed with many safety features for your protection. These features help provide safe access to the vehicle under various conditions; however, when approaching a high-voltage vehicle in a fire, rescue or recovery situation, always follow one industry standard rule:

***ALWAYS ASSUME THE VEHICLE'S  
HIGH-VOLTAGE SYSTEM IS POWERED UP !***

## HYBRID VEHICLE IDENTIFICATION

- The Fusion Hybrid vehicles can easily be identified by the “Hybrid” badges located on the left and right front doors. There is a “Hybrid” nameplate on the trunk lid (located on the right hand side) that also includes the green leaf/blue highway “Hybrid” icon.



- The Fusion Energi vehicles can easily be identified by the “Energi” badges located on the left and right doors. There is a “Energi” nameplate on the trunk lid (located on the left hand side) that also includes the green leaf/blue highway “Hybrid” icon.



**NOTE:** Fusion Energi shown.

Hybrid/Energi nameplate and icon on trunk lid.

Hybrid/Energi nameplate with Hybrid icon on front doors.



## HYBRID VEHICLE IDENTIFICATION - CONTINUED

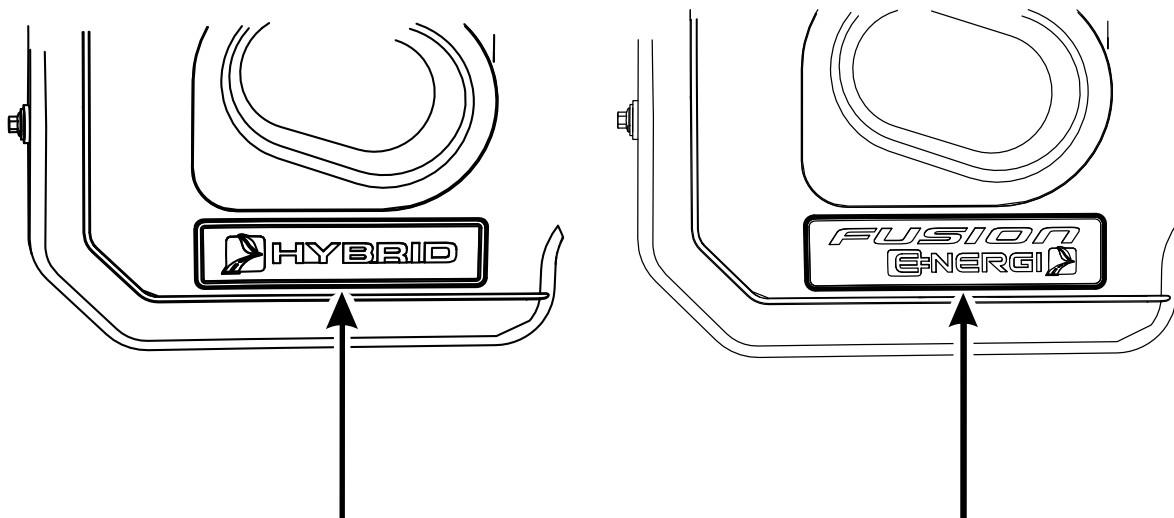
- The MKZ Hybrid vehicles can easily be identified by the “2.0H” badge located on the trunk lid.



MKZ Hybrid “2.0H” nameplate on trunk lid.



- The Fusion Hybrid and MKZ Hybrid vehicles have a unique engine appearance cover with a raised “HYBRID” (or “HYBRID ENERGI” for Energi vehicles) icon.



Unique Hybrid engine appearance cover with raised lettering and icon

**NOTE:** Fusion/MKX Hybrid shown, Fusion Energi similar.

- The 5th, 6th and 7th digits of the Vehicle Identification Number (VIN) identify the Hybrid vehicle line.

VIN POSITIONS 5, 6 and 7	VEHICLE
P0L	Fusion SE Full Hybrid
L2L	MKZ Hybrid Full Hybrid
P0P	Fusion SE Energi Plug-in Hybrid
P0R	Fusion Titanium Full Hybrid
P0S	Fusion Titanium Energi Plug In Hybrid

**SAMPLE VIN**

3 F A D P 0 L 3 0 A R 1 0 0 0 0 1



Fusion Hybrid FWD

## HIGH-VOLTAGE ELECTRICAL DISCONNECT FEATURES



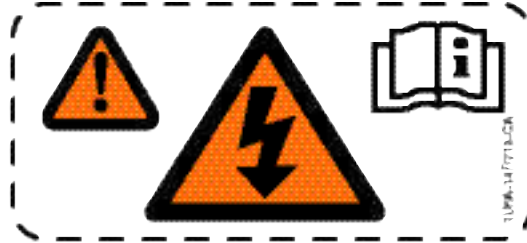
**WARNING: ELECTRIC VEHICLES DAMAGED BY A CRASH MAY HAVE COMPROMISED HIGH-VOLTAGE SAFETY SYSTEMS AND PRESENT A POTENTIAL HIGH-VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION AND WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SAFETY GEAR, INCLUDING HIGH-VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. ISOLATE THE HV 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.**

The following list describes certain features that have been incorporated into the Fusion Hybrid, MKZ Hybrid and Fusion Energi vehicles that allow for either simple or automatic shut off of the high-voltage electrical systems.

- High-Voltage Fuse — In the event of a high-voltage short circuit, the high-voltage fuse will open, disabling the high-voltage system.
- High-Voltage Interlock Circuit — Whenever a high-voltage connector is disconnected, the high-voltage interlock circuit opens and disables the high-voltage system.
- Ignition Key in the OFF Position — Any time the 12-volt system is turned off (ignition lock cylinder is in the OFF position), the high-voltage system is disabled.
- High-Voltage Service Disconnect — Whenever the high-voltage service disconnect (located behind the rear seat back) is removed, the high-voltage system is disabled. For additional information, refer to Page 10 in this manual.
- Thermal Sensors — In the event the battery is exposed to extreme hot ambient conditions and/or is being driven extremely aggressively with compromised cooling, power limits will be employed to prevent overheating. However, if the battery is in use and does become too hot, contactors will be opened and the vehicle will shut down. In some instances, if the ignition key is left in the “ON” position, this could cause the high-voltage battery temperature to exceed 60°C (140°F); if this temperature is reached, the thermal sensors located near the high-voltage battery will automatically disable the high-voltage battery.

## HIGH-VOLTAGE WARNING DECALS

- On Hybrid and Energi vehicles, WARNING decals are located on components in the high-voltage system throughout the vehicle. Please see example below.



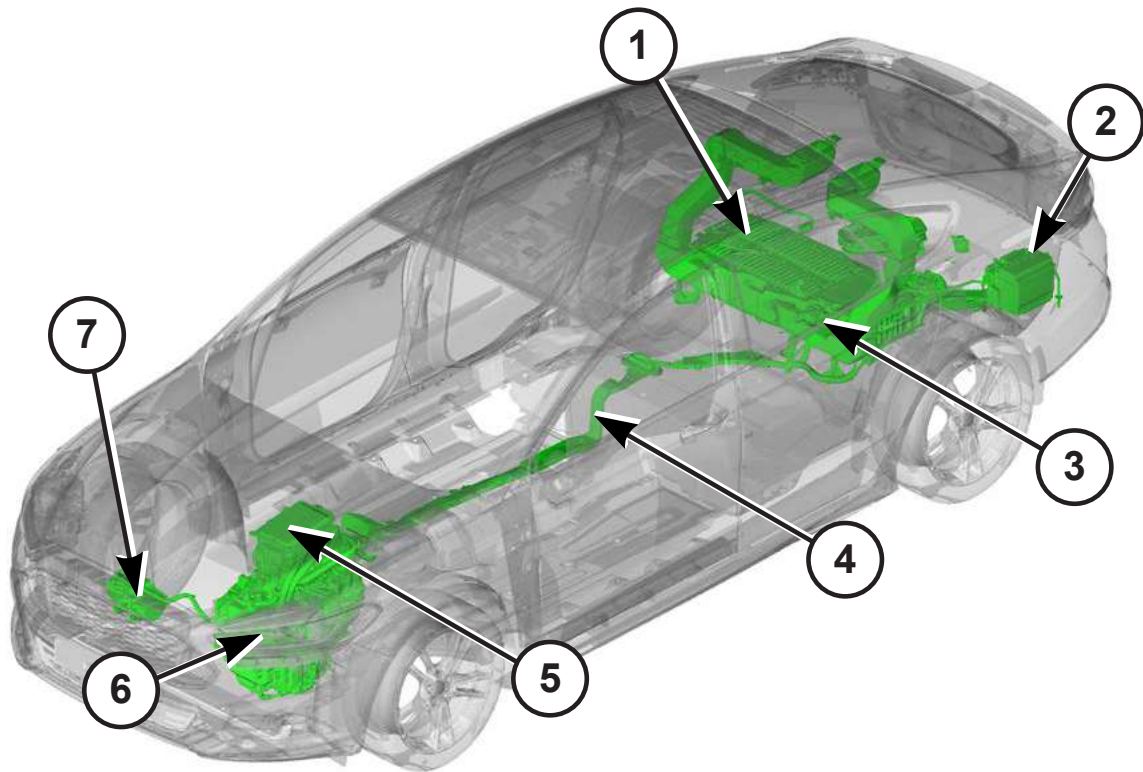


## HYBRID COMPONENT LOCATION AND IDENTIFICATION

The illustration below and its defining chart on Page 9, provide the location, description and basic function of the Hybrid system components.

**NOTE:** All high-voltage wires and harnesses are wrapped in orange-colored insulation.

**NOTE:** Fusion Hybrid shown, MKZ Hybrid similar.



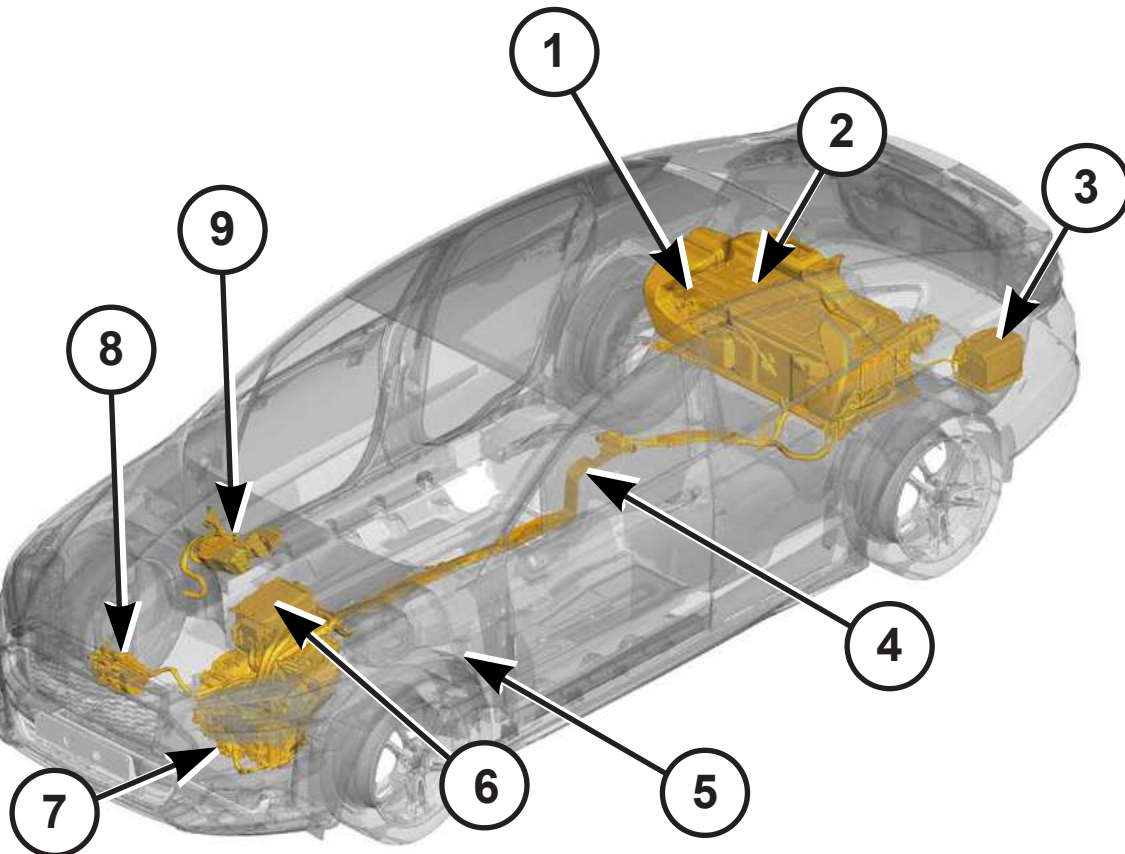
## **HYBRID COMPONENT LOCATION AND IDENTIFICATION - CONTINUED**

	<b>COMPONENT</b>	<b>LOCATION / DESCRIPTION</b>	<b>FUNCTION</b>
1	High-voltage battery approximately 300 Volts DC	Located in the cargo area, behind the rear seat.  Sealed lithium battery.	Provides high-voltage storage for the vehicle's electric motor.
2	12-Volt battery	Located in the trunk area.  Typical automotive 6-cell lead/acid design.	Provides 12-volts for vehi- cle accessories.
3	High-voltage service disconnect	Located behind the rear seat backrest.  Orange rectangle with a molded plastic handle, about 100 mm (4 in) in length.	Provides means to dis- connect the high-voltage battery for safely servic- ing the vehicle.
4	High-voltage wiring	Runs along the vehicle's floorpan from the high-volt- age battery to the Hybrid Powertrain Control Mod- ule (HPCM). The electric A/C compressor connects directly to the HPCM. Separate connections from the HPCM are made to the Electronically Controlled Continuously Variable Transaxle (ECVT).	Provides the physical connection between the high-voltage battery and the vehicle's high-voltage equipment.
5	Transmission Control Module	Located above the trans- mission.  Contains controlling electronics for managing propulsion.	Provides rotational force during Electrical Drive Modes. Generates 3-phase AC high-voltage electricity via two cables to and from the traction motor and generator.
6	Electronically Con- trolled Continuously Variable Transaxle (ECVT)	Transverse-mounted de- sign, similar to the non-Hy- brid Fusion MKZ vehicles.	Provides rotational force to the wheels for vehicle propulsion and transmits rotational force to the engine's generator to recharge batteries.
7	Electric A/C Compressor	Located in front of the engine.  Has an orange high-volt- age wire attached to it us- ing an interlock connector.	Provides electric A/C op- eration; replaces the belt driven A/C compressor.

## ENERGI COMPONENT LOCATION AND IDENTIFICATION

The illustration below and its defining chart on Page 11 provides the location, description and basic function of the Fusion Energi's system components.

**NOTE:** All high-voltage wires and harnesses are wrapped in orange-colored insulation.



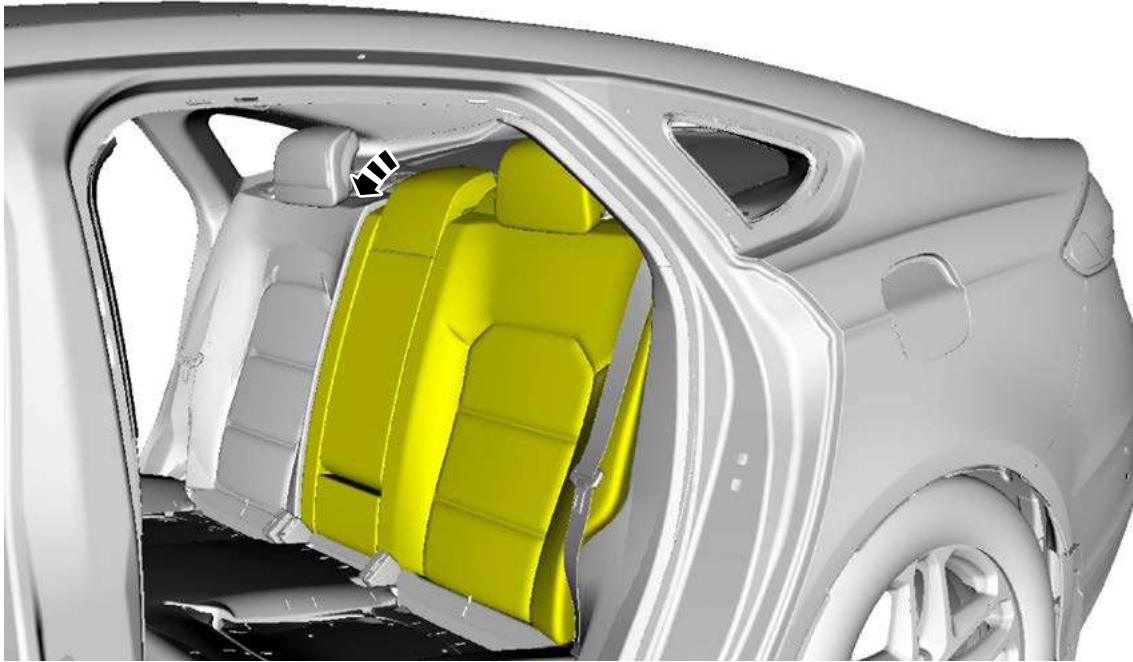
## **ENERGI COMPONENT LOCATION AND IDENTIFICATION - CONTINUED**

	<b>COMPONENT</b>	<b>LOCATION / DESCRIPTION</b>	<b>FUNCTION</b>
1	High-voltage service disconnect	Located behind the rear seat backrest.  Orange rectangle with a molded plastic handle, about 100 mm (4 in) in length.	Provides means to disconnect the high-voltage battery for safely servicing the vehicle.
2	High-voltage battery approximately 300 Volts DC	Located in the cargo area, behind the rear seat.  Sealed lithium battery.	Provides high-voltage storage for the vehicle's electric motor.
3	12-Volt battery	Located in the trunk area.  Typical automotive 6-cell lead/acid design.	Provides 12-volts for vehicle accessories.
4	High-voltage wiring	Runs along the vehicle's floorpan from the high-voltage battery to the Hybrid Powertrain Control Module (HPCM). The electric A/C compressor connects directly to the HPCM. Separate connections from the HPCM are made to the Electronically Controlled Continuously Variable Transaxle (ECVT).	Provides the physical connection between the high-voltage battery and the vehicle's high-voltage equipment.
5	Charging port	Located on the driver side fender. It connects to the high-voltage wiring in the engine compartment.  It has an orange high-voltage wire attached to it using an interlock connector.	Provides 110V or 220V charging options from a Level II charging station to the high-voltage battery when the vehicle is not in operation.
6	Transmission Control Module	Located above the transmission.  Contains controlling electronics for managing propulsion.	Provides rotational force during Electrical Drive Modes. Generates 3-phase AC high-voltage electricity via two cables to and from the traction motor and generator.
7	Electronically Controlled Continuously Variable Transaxle (ECVT)	Transverse-mounted design, similar to the non-Hybrid Fusion MKZ vehicles.	Provides rotational force to the wheels for vehicle propulsion and transmits rotational force to the engine's generator to recharge batteries.

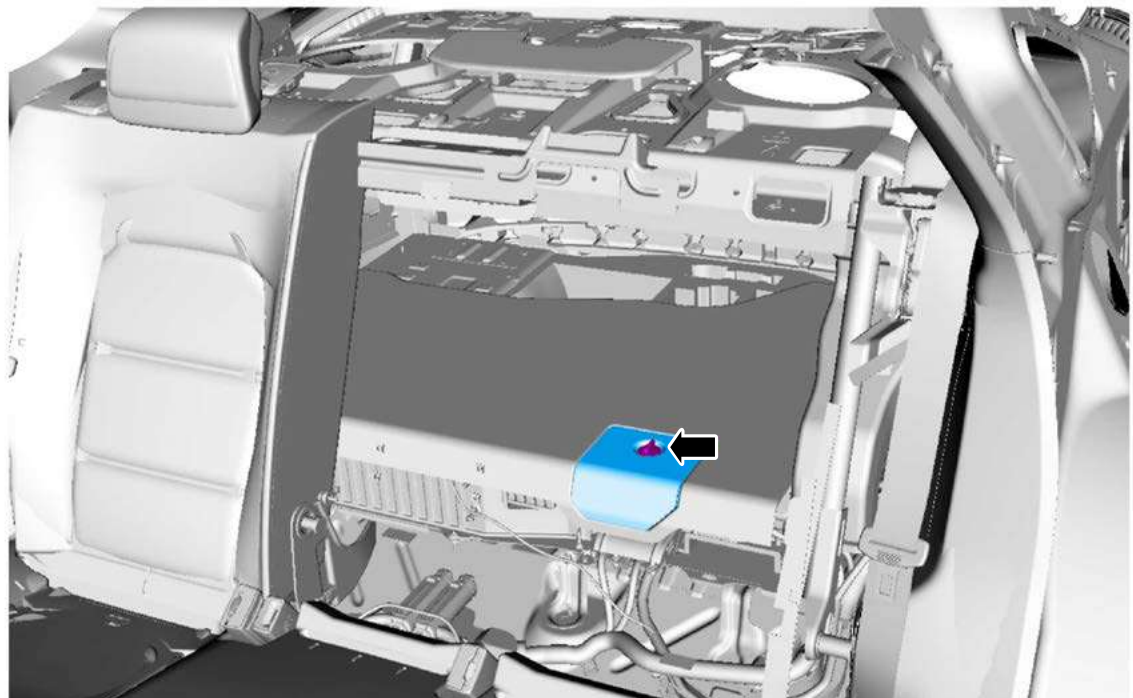
	<b>COMPONENT</b>	<b>LOCATION / DESCRIPTION</b>	<b>FUNCTION</b>
8	Electric A/C Compressor	Located in front of the engine.  It has an orange high-voltage wire attached to it using an interlock connector.	Provides electric A/C operation; replaces the belt driven A/C compressor.
9	Electric Heater	Located in the engine compartment on the passenger side.	Provides passenger compartment with heat without the need to turn the engine on.

## **HIGH-VOLTAGE SERVICE DISCONNECT - FUSION/MKZ HYBRID**

1. Position the LH rear seat backrest down.



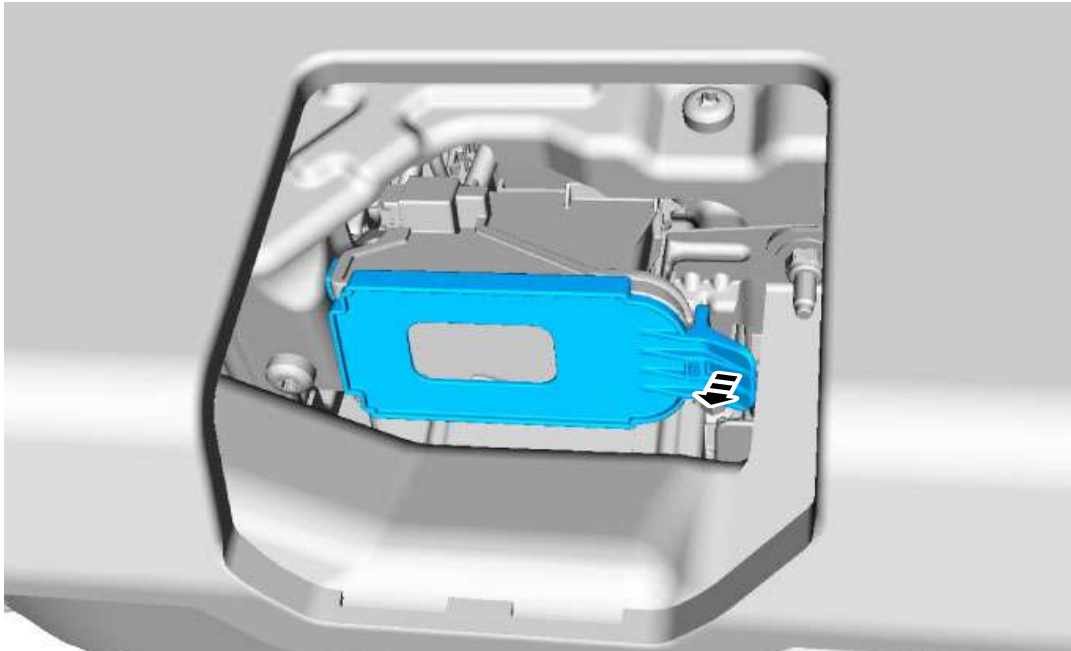
2. Remove the high-voltage battery service disconnect cover.





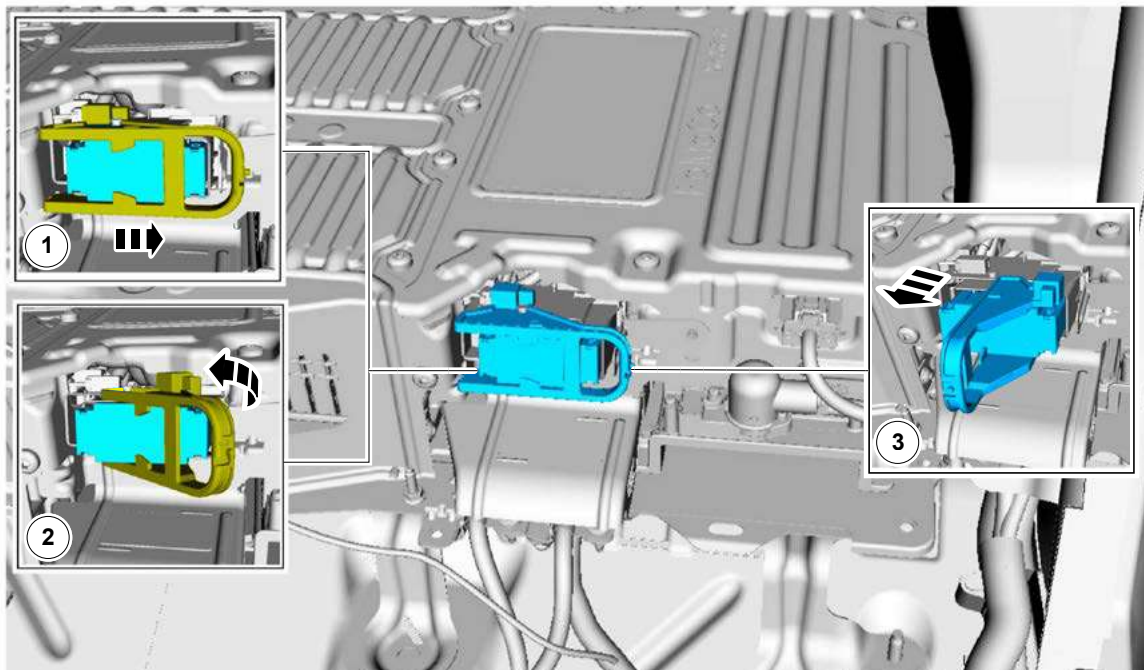
## HIGH-VOLTAGE SERVICE DISCONNECT (CONTINUED) - FUSION/MKZ HYBRID

3. Pull to remove the high-voltage battery service disconnect interlock cover.



4. Remove the high-voltage service disconnect:

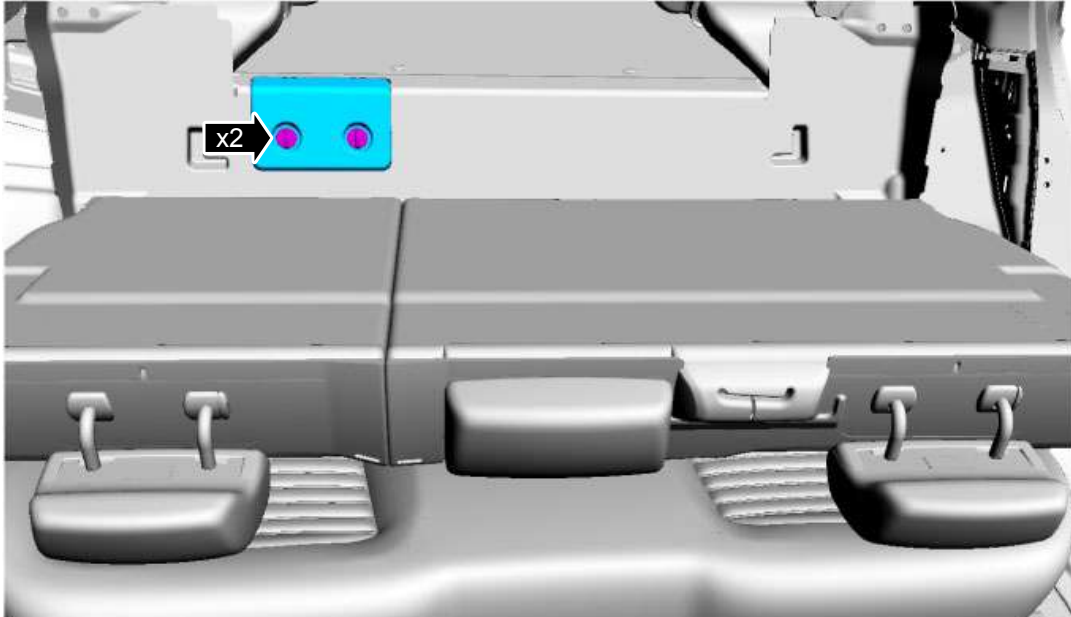
1. Pull the Lever Position Assurance (LPA) tab toward the front of vehicle to remove.
2. Pull the lever handle outward to disengage the interlock.
3. Rotate the lever to horizontal and remove the battery high-voltage service disconnect.



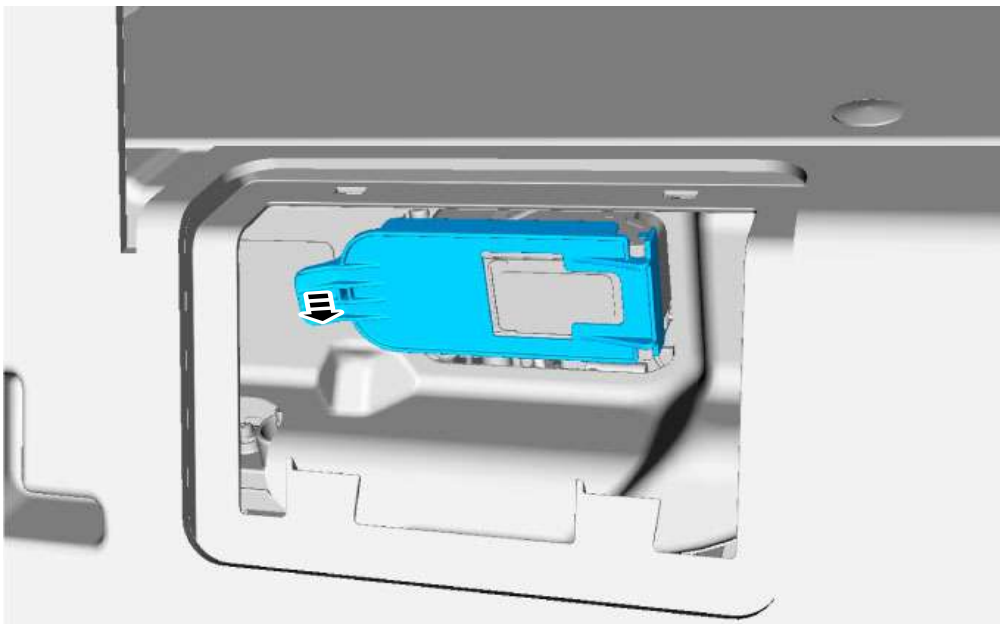
**⚠ WARNING: THE HIGH-VOLTAGE SYSTEM MAY RETAIN A DANGEROUS LEVEL OF VOLTAGE FOR A SHORT TIME AFTER THE SERVICE DISCONNECT HAS BEEN REMOVED. WAIT 5 MINUTES FOR THE VOLTAGE TO DISSIPATE BEFORE BEGINNING SERVICE. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**

### **HIGH-VOLTAGE SERVICE DISCONNECT - FUSION ENERGY**

1. Position the rear seat backrest down and remove the high-voltage battery service disconnect cover.



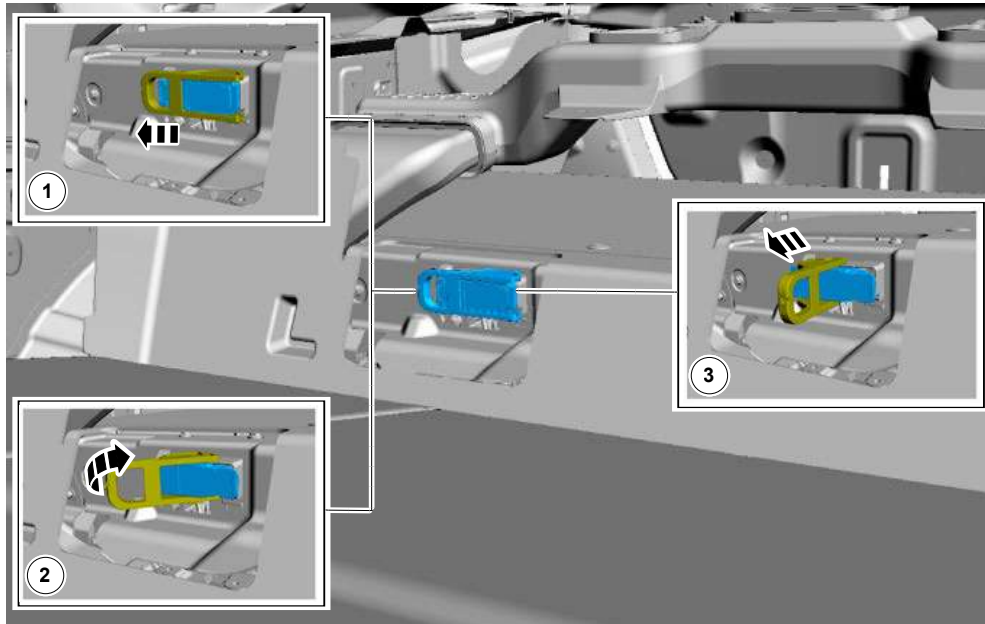
2. Pull to remove the high-voltage battery service disconnect interlock cover.





### 3. Remove the high-voltage service disconnect:

1. Pull the Lever Position Assurance (LPA) tab toward the front of vehicle to remove.
2. Pull the lever handle outward to disengage the interlock.
3. Rotate the lever to horizontal and remove the battery high-voltage service disconnect.



**⚠ 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.**

### **HIGH-VOLTAGE BATTERY PACK**

**⚠ 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) SAFETY GEAR, INCLUDING HIGH-VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. ISOLATE THE HV 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.**

## **HIGH-VOLTAGE BATTERY PACK - CONTINUED**



**WARNING: FIRES IN CRASH-DAMAGED ELECTRIC VEHICLES MAY EMIT TOXIC OR COMBUSTIBLE GASSES. SMALL AMOUNTS OF EYE, SKIN OR LUNG IRRITANTS MAY BE PRESENT. WEAR PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SELF-CONTAINED BREATHING APPARATUS WHEN WORKING IN CLOSE PROXIMITY OR IN A CONFINED AREA, SUCH AS A TUNNEL OR GARAGE. VENTILATE THE VEHICLE INTERIOR BY OPENING VEHICLE WINDOWS OR DOORS. VENTILATE THE WORKING AREA. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.**

- Do not cut the high-voltage battery case. Do not penetrate the batteries or case in any way.
- The high-voltage battery is located in the forward portion of the luggage compartment. The high-voltage battery lies flat just behind the rear seat back under the luggage compartment cargo cover.
- Removing the high-voltage service disconnect will disconnect the high-voltage from the vehicle. The battery pack will remain live and dangerous.
- The total voltage of the battery pack is approximately 300-volts DC.
- The battery cells contain a base electrolyte, consisting of lithium hexafluorophosphate and organic solvents as the dominant active ingredient, that is absorbed in special polymeric film. The electrolyte will not leak from the battery under most conditions, however, if the battery is crushed, it is possible for a small amount of electrolyte to leak.

**NOTICE:** The following must be followed when working with a damaged battery:

- If possible, isolate and avoid contact with high-voltage vehicle components. If contact with the high-voltage system cannot be avoided, Personal Protective Equipment (PPE) such as a splash shield or safety goggles, gloves (latex, rubber or Nitrile), an apron or overcoat and rubber boots are required when handling damaged batteries. Exposure to electrolyte could cause skin and/or eye irritation/burns. If exposed, rinse with large amounts of water for 10-15 minutes.
- If the battery is exposed to intense heat (or other abusive conditions), it is possible that flammable gases and liquid (electrolyte) have been released from the cells. The gases include combustible hydrocarbons such as methane, toxic gases such as carbon monoxide, and very small amounts of eye/skin/lung irritants such as hydrofluoric acid could be released from the battery. Appropriate precautions should be taken to make sure the area is properly ventilated, such as opening the vehicle's windows or doors. First responders should wear Personal Protective Equipment (PPE) and self contained breathing apparatus to safeguard against thermal, electrical, respiratory and skin/eye hazards.

## APPROACHING A DAMAGED HIGH-VOLTAGE VEHICLE



**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) SAFETY GEAR, INCLUDING HIGH-VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. ISOLATE THE HV 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.



**WARNING:** DAMAGED ELECTRIC VEHICLES SUBMERGED IN WATER PRESENT A POTENTIAL HIGH-VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION AND WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SAFETY GEAR, INCLUDING HIGH-VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. DO NOT ATTEMPT TO EXTRACT THE VEHICLE UNTIL THE HIGH-VOLTAGE BATTERY HAS DISCHARGED INDICATED BY THE ABSENCE OF BUBBLING OR FIZZING. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

### 1. FOLLOW EXISTING TRAINING AND INCIDENT COMMANDER DIRECTION

- Emergency responders should use **LARGE** amounts of water if fire is present or suspected and, keeping in mind that fire can occur for a considerable period after the crash, should proceed accordingly.
- This guide provides only supplemental information as it pertains to the Fusion Hybrid, MKZ Hybrid and Fusion Energi vehicles. The same rules apply when approaching any potential high-voltage situation. Always follow your high-voltage safety training. Some precautions to take in a high-voltage situation include:
  - Remove all jewelry: Watches, necklaces and earrings. Remove any metal objects that are conductors of electricity.
  - Wear the necessary PPEs: High-voltage rubber gloves, face shield, insulated boots, protective raincoat and apron.
- Bring the following equipment:
  - Class ABC powder-type fire extinguisher.
  - A nonconductive object, about 1.5 m (5 ft) long. This can be used to safely push someone away from the vehicle if they accidentally come in contact with high-voltage.

## APPROACHING A DAMAGED HIGH-VOLTAGE VEHICLE - CONTINUED

### 2. APPROACHING A DAMAGED VEHICLE

- Disable the high-voltage electrical system using as many of the following steps as possible:
  - Secure the vehicle: Place the shift lever into the PARK position. Place the ignition in the OFF position. For vehicles equipped with push button start, check that the vehicle ready light is OFF to verify the high-voltage system is disconnected. If the vehicle ready light is ON, press the Start button to turn OFF the ignition. Block the wheels, if necessary.
  - Disconnect the negative cable from the 12-volt battery.
  - If possible, remove the high-voltage service disconnect(s). For additional information, refer to page 12 and 13 in this manual. If the service disconnects cannot be removed, avoid the high-voltage system components, and wear all appropriate PPE as outlined on page 14 of this guide.
- If the vehicle is on fire, use a Class ABC powder-type extinguisher to contain and smother the flames. If water is being used, **LARGE** amounts of water will be required to extinguish the flames. A fire-hydrant or dedicated fire hose can supply the needed amount. Water can cause some degree of arcing/shorting across the cell and/or battery terminals; it can also react with the electrolyte from the cells to generate additional combustible gas and other by-products such as hydrofluoric acid; however, the cooling and smothering effects of flushing the affected article with large amounts of water and/or other fire suppression material is still beneficial for minimizing the severity of the event.
- If the vehicle has any exposed cables, make sure to wear high-voltage rubber gloves and other appropriate PPE. Do not touch any broken or damaged high-voltage orange cables. Treat severed cables as if they contain high-voltage.
- If the vehicle is submerged in water, varying degrees of arcing/shorting within the battery will take place. Do not touch any high-voltage components or orange cables while extricating the occupant(s). Do not remove the vehicle until you are sure the high-voltage battery is completely discharged. A submerged high-voltage battery may produce a fizzing or bubbling reaction to the water. If fizzing or bubbling is observed, the high-voltage battery will be discharged when the fizzing or bubbling has completely stopped, however, still treat it as if it was not discharged.

## **APPROACHING A DAMAGED VEHICLE - CONTINUED**

- If the vehicle is on fire, use a Class ABC powder-type extinguisher to contain and smother the flames. If water is being used, **LARGE** amounts of water will be required to extinguish the flames. A fire-hydrant or dedicated fire hose can supply the needed amount.
- If the vehicle has any exposed cables, make sure to wear high-voltage rubber gloves and other protective clothing. Do not touch any broken or damaged high-voltage orange cables. Treat severed cables as if they contain high-voltage.
- If the vehicle is submerged in water, do not touch any high-voltage components or orange cables while extricating the occupant(s). Do not remove the vehicle until you are sure the high-voltage battery is completely discharged. A submerged high-voltage battery may produce a fizzing or bubbling reaction to the water. The high-voltage battery will be discharged when the fizzing or bubbling has completely stopped, however, still treat it as if it was not discharged.

### **3. IF THE HIGH-VOLTAGE BATTERY CASE HAS BEEN RUPTURED**

- Just like any other battery, hose the area down with **LARGE** amounts of water (ie. use a Fire Hose).

### **4. MOVING DAMAGED VEHICLES — WRECKER DRIVERS**

- Rather than attempt to discharge a propulsion battery, an emergency responder, tow truck operator, or storage facility manager should contact experts at the vehicle manufacturer on that subject.
- If possible, remove the high-voltage service disconnect. For additional information, refer to page 12 and 13 in this manual.
- Be alert. There is potential for delayed fire with damaged lithium-ion batteries.
- Call an authorized Ford Dealer or vehicle manufacturer representative, if necessary, to determine additional steps that you should take to safely recover or transport the vehicle.
- Follow the guidelines in the Wrecker Towing Manual.

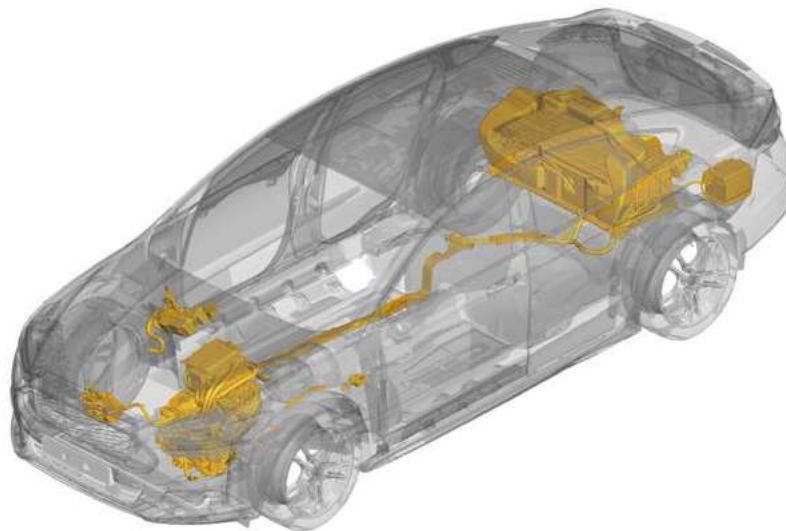
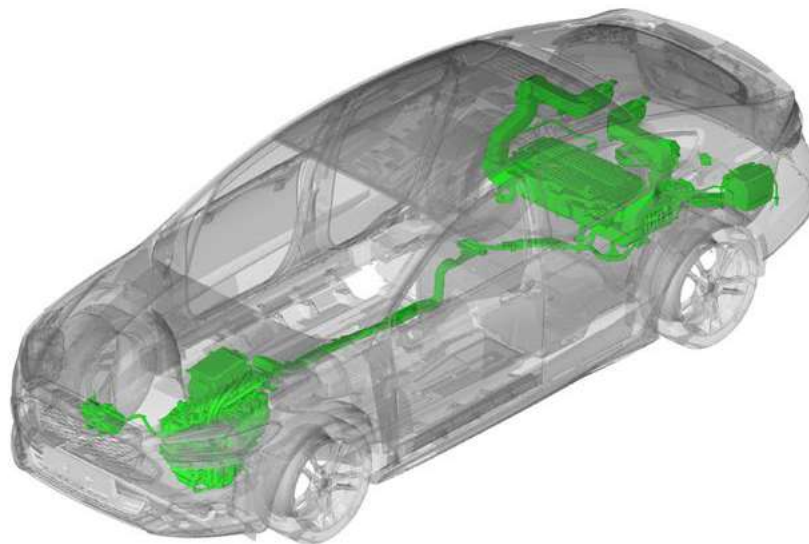
- Front Tow: Wheel Lift (FWD)
- Rear Tow: Wheel Lift with Dolly (FWD)
- Flatbed: FWD and AWD

### **5. SPECIAL NOTE TO 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.
- Operators of tow trucks and vehicle storage facilities should ensure the damaged vehicle is kept in an open area instead of inside a garage or other enclosed building.

## **APPROACHING A DAMAGED HIGH-VOLTAGE VEHICLE - CONTINUED**

- If possible, remove the high-voltage battery service disconnect before attempting any extrication procedure. Always assume the high-voltage cabling and components are powered up.
- If occupant extrication is necessary, always use caution when cutting near the vehicle high voltage system components. Do not cut any of the high-voltage under vehicle or under hood cabling (all high-voltage cabling is orange in color). High-voltage cabling runs from the high-voltage batteries under the left hand side of the vehicle to the underhood compartment. Refer to the diagram below for no cut zones.



## **DAMAGED VEHICLE GUIDANCE FOR FORD MOTOR COMPANY ELECTRIC AND HYBRID-ELECTRIC VEHICLES EQUIPPED WITH HIGH-VOLTAGE BATTERIES (TOWING, RECOVERY OPERATORS AND VEHICLE STORAGE FACILITIES)**

For questions contact Ford USA 1-800-392-3673 / Ford Canada 1-800-565-3673

### **1. In the event of damage to or fire involving an Electric Vehicle (EV) or Hybrid Electric Vehicle (HEV).**

- Always assume the high-voltage (HV) battery and associated components are energized and fully charged.
- Exposed electrical components, wires, and HV batteries present potential HV shock hazards.
- Venting/off-gassing HV battery vapors are potentially toxic and flammable.
- Physical damage to the vehicle or HV battery may result in immediate or delayed release of toxic and/or flammable gases and fire.

### **2. Vehicle Shutdown and High-Voltage System Disabling**

#### **Identify Vehicle**

- Determine if the vehicle is an electric or hybrid-electric vehicle, and if it is, advise your dispatch and all other responders that an electric or hybrid-electric vehicle is involved.
- To identify potential symptoms of a damaged high-voltage system, contact an authorized service center or vehicle manufacturer representative. Refer to the Vehicle Owner Manual, Emergency Placard (included in the Vehicle Owner Manual) and/or the Emergency Response Guide for appropriate contact information.
- If you detect leaking fluids, sparks, smoke, flames, increased temperature, gurgling, popping or hissing noises from the HV battery compartment, ventilate the passenger area (i.e., roll down windows or open doors) and call 911.
- Be alert. There is a potential for delayed fire with damaged lithium-ion batteries.

**DAMAGED VEHICLE GUIDANCE FOR FORD MOTOR COMPANY ELECTRIC AND HYBRID-ELECTRIC VEHICLES EQUIPPED WITH HIGH-VOLTAGE BATTERIES (TOWING, RECOVERY OPERATORS AND VEHICLE STORAGE FACILITIES) - CONTINUED**

**3. Recovering/Transporting Vehicle**


- Call an authorized service center or vehicle manufacturer representative, if necessary, to determine additional steps that you should take to safely recover or transport the vehicle.
- Always approach the vehicle from the sides to stay out of potential travel path. It may be difficult to determine if the vehicle is running due to lack of engine noise.
- Refer to vehicle manual/recovery guide to locate proper attachment/connection points and transport method.
- Avoid contact with orange high-voltage cabling and areas identified as high-voltage risk by warning labels.


**4. Storing Vehicles**


- **For vehicles in the United States, notify Ford Motor Company 1-800-392-3673 (then follow the prompts on the voice response menu) or an authorized Ford Dealer as soon as possible as there may be additional steps necessary to secure, discharge, handle, and/or store the HV battery and vehicle.**
- **For vehicles in Canada, notify Ford Motor Company 1-800-565-3673 (then follow the prompts on the voice response menu), or an authorized Ford dealer as soon as possible. There may be additional steps necessary to secure, discharge, handle and/or store the HV battery and vehicle.**
- Do not store a severely damaged vehicle with a lithium-ion battery inside a structure or within 50 feet of any structure or vehicle.
- Ensure that passenger and cargo compartments remain ventilated.
- Prior to placing and while located in storage area/tow lot, continue to inspect vehicle for leaking fluids, sparks, smoke, flames, gurgling or bubbling sounds from the HV battery and call 911 if any of these are detected.
- Maintain clear access to stored vehicles for monitoring and emergency response if needed.




For specific information and safety preparation regarding the high-voltage system, refer to [WWW.MOTORCRAFTSERVICE.COM](http://WWW.MOTORCRAFTSERVICE.COM), select quick guides for the appropriate vehicle emergency response guide.

 **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) SAFETY GEAR, 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.

 **WARNING:** DAMAGED ELECTRIC VEHICLES SUBMERGED IN WATER PRESENT A POTENTIAL HIGH VOLTAGE ELECTRICAL SHOCK HAZARD. EXERCISE CAUTION AND WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) SAFETY GEAR, INCLUDING HIGH VOLTAGE SAFETY GLOVES AND BOOTS. REMOVE ALL METALLIC JEWELRY, INCLUDING WATCHES AND RINGS. DO NOT ATTEMPT TO EXTRACT THE VEHICLE UNTIL THE HIGH VOLTAGE BATTERY HAS DISCHARGED INDICATED BY THE ABSENCE OF BUBBLING OR FIZZING. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

 **WARNING:** FIRES IN CRASH-DAMAGED ELECTRIC VEHICLES MAY EMIT TOXIC OR COMBUSTIBLE GASSES. SMALL AMOUNTS OF EYE, SKIN OR LUNG IRRITANTS MAY BE PRESENT. WEAR PERSONAL PROTECTIVE EQUIPMENT (PPE) AND SELF-CONTAINED BREATHING APPARATUS WHEN WORKING IN CLOSE PROXIMITY OR IN A CONFINED AREA, SUCH AS A TUNNEL OR GARAGE. VENTILATE THE VEHICLE INTERIOR BY OPENING VEHICLE WINDOWS OR DOORS. VENTILATE THE WORKING AREA. FAILURE TO FOLLOW THIS INSTRUCTION MAY RESULT IN SERIOUS PERSONAL INJURY OR DEATH.

 **WARNING:** ELECTRIC VEHICLES WITH DAMAGED HIGH VOLTAGE BATTERIES REQUIRE SPECIAL HANDLING PRECAUTIONS. INSPECT THE VEHICLE CAREFULLY FOR LEAKING BATTERY FLUIDS, SPARKS, FLAMES, AND GURGLING OR BUBBLING SOUNDS. CONTACT EMERGENCY SERVICES IMMEDIATELY IF ANY OF THESE PROBLEMS ARE OBSERVED. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A VEHICLE FIRE AND PERSONAL INJURY OR DEATH.

**DAMAGED BATTERY ELECTRIC VEHICLE STORAGE PLACARD**

- If the vehicle and/or battery high voltage system is damaged, place a sign indicating that it is a battery electric vehicle with potentially dangerous high voltage. See example below:

---

**WARNING:  
BATTERY ELECTRIC VEHICLE WITH  
POSSIBLE HIGH VOLTAGE SYSTEM  
DAMAGE. DO NOT TOUCH!**

---

**WARNING:  
BATTERY ELECTRIC VEHICLE WITH  
POSSIBLE HIGH VOLTAGE SYSTEM  
DAMAGE. DO NOT TOUCH!**

---

© Copyright 2017, Ford Motor Company. All rights reserved. This document may be reproduced in its entirety and distributed for emergency responder use only. It may not be excerpted for any purpose.