



Emergency Response Guide



2013

FIT EV

Prepared for Fire Service, Law Enforcement, Emergency Medical, and Professional
Towing Personnel by American Honda Motor Co., Inc.

Introduction

This guide has been prepared to assist emergency response professionals in identifying a Honda Fit EV and safely responding to incidents involving this vehicle.

Copies of this guide and other Honda Emergency Response Guides are available for reference or downloading at <https://techinfo.honda.com>

For questions or to order printed copies of this guide, please contact your local Honda dealer or Honda Automobile Customer Service at (800) 999-1009.

Honda wishes to thank emergency response professionals for their concern and efforts in protecting Honda customers and the general public.

Contents

Vehicle Description

- Vehicle Overview
- Vehicle Identification
- Key Components
- Vehicle Type and Construction
- High Strength Steel
- Power Control Unit (ECU)
- Electric Motor
- 12-Volt Battery
- High-Voltage (HV) Battery Pack
- High-Voltage Cables

Occupant Protection Equipment

Recharging System

Potential Hazards

- Electric Shock
- Lithium-ion Battery Fumes or Fire

Emergency Procedures

- Vehicle Collision
- Submerged Vehicle
- Preferred Method for HV Shutdown
- Alternate Method for HV Shutdown
- Least Desirable Method for HV Shutdown
- Extricating Occupants

Emergency Towing and Repairs

- Emergency Towing
- Dealer Inspection and Repair

Vehicle Description

Vehicle Overview

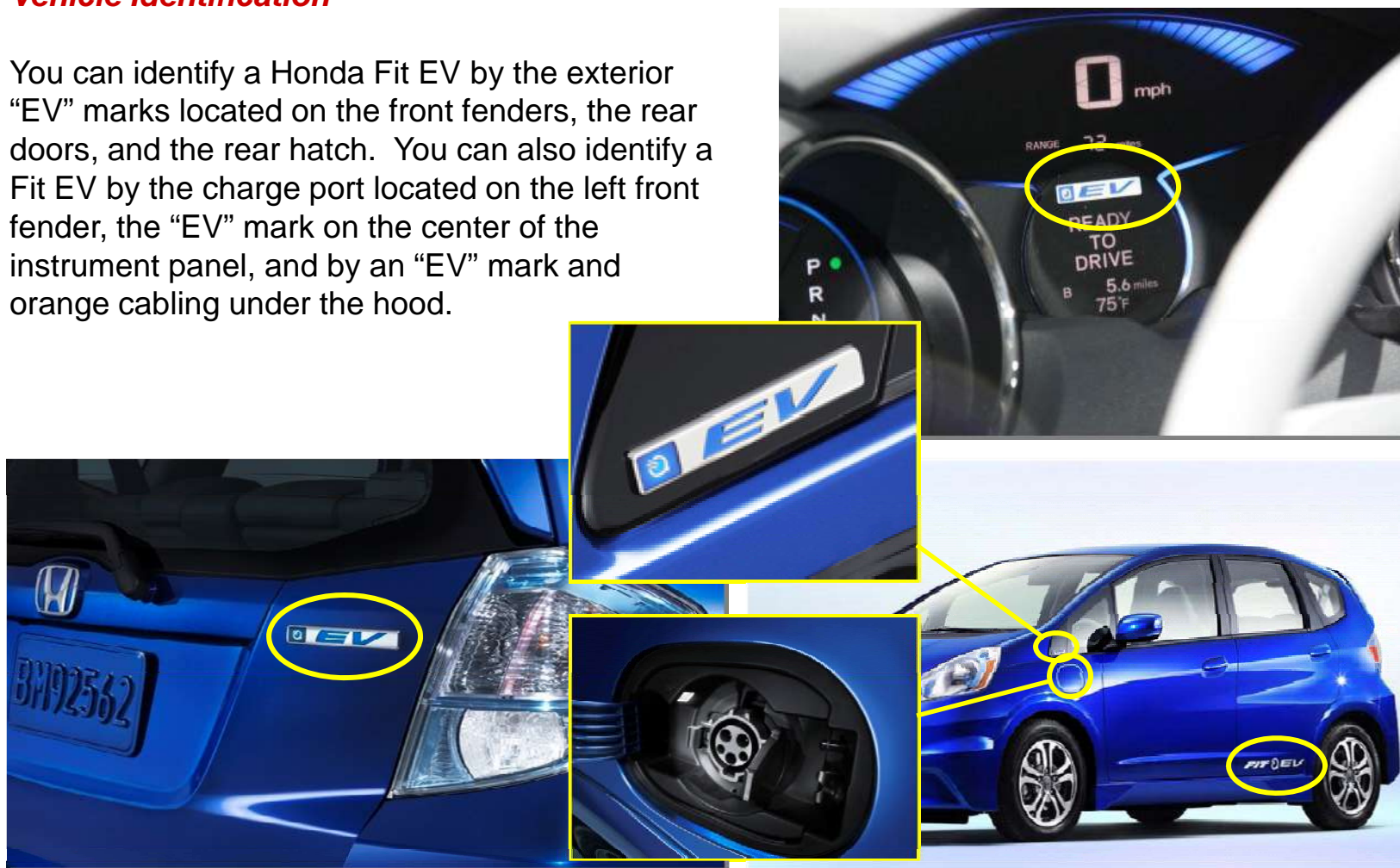
The Fit EV relies on a high-voltage (HV) battery to supply power to an electric motor that propels the vehicle. The HV battery, mounted beneath the vehicle, may be charged using 120 or 240-volt charging systems. The electric motor is controlled by various electrical components that are housed in the power control unit (PCU) located under the hood. Under the PCU, the motor and a one-speed gearbox drive the front wheels.



Vehicle Description

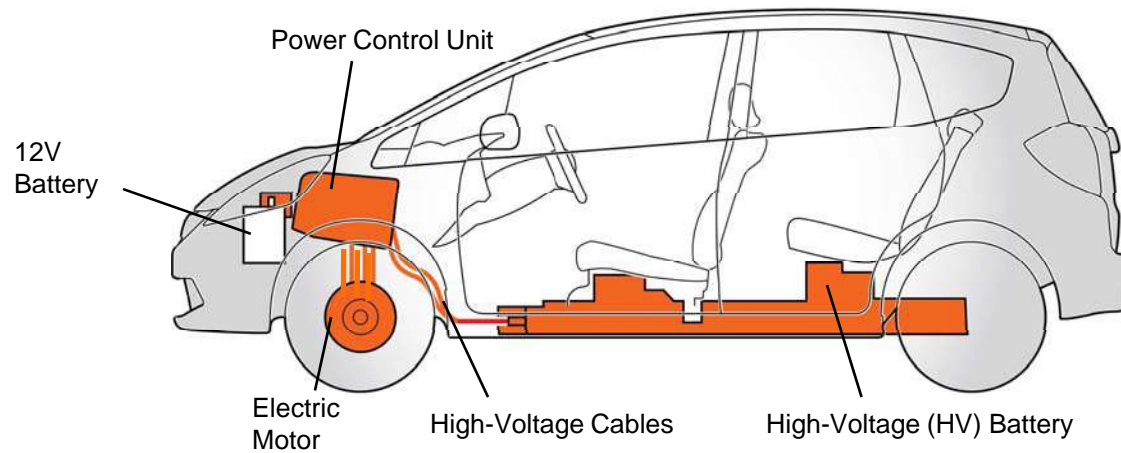
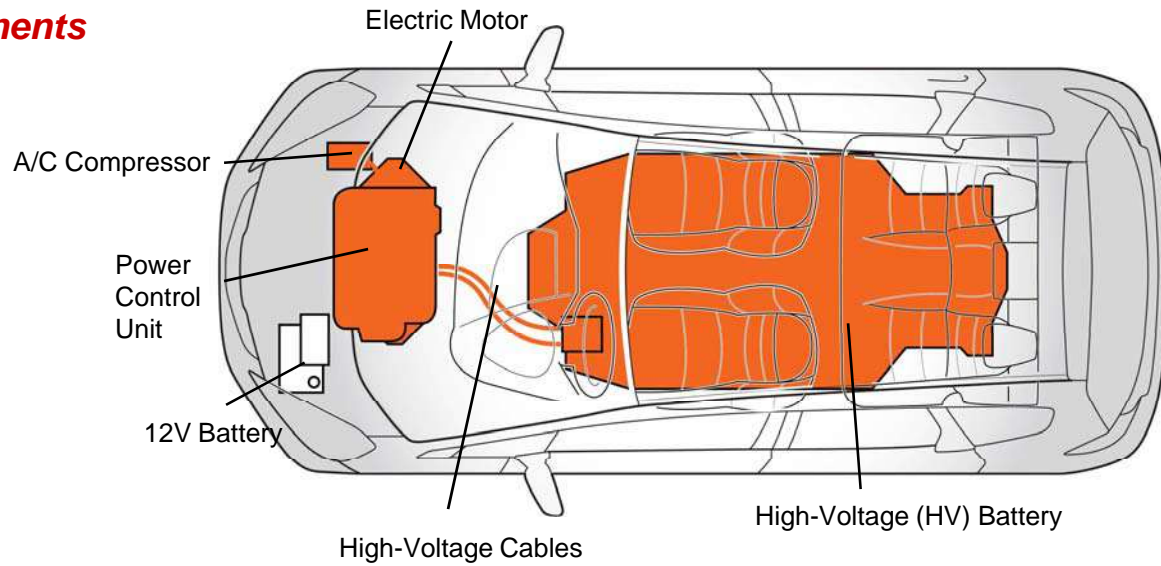
Vehicle Identification

You can identify a Honda Fit EV by the exterior “EV” marks located on the front fenders, the rear doors, and the rear hatch. You can also identify a Fit EV by the charge port located on the left front fender, the “EV” mark on the center of the instrument panel, and by an “EV” mark and orange cabling under the hood.



Vehicle Description

Key Components



Vehicle Description

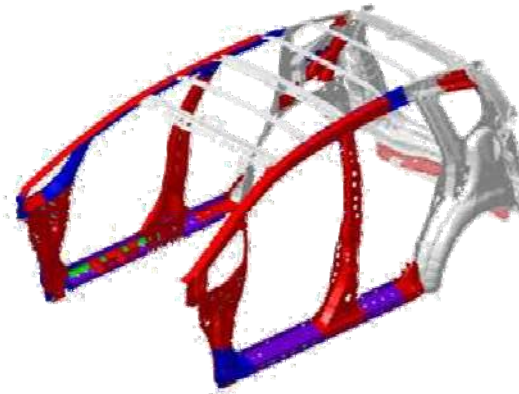
Vehicle Type and Construction

The Honda Fit EV is a five-door, five-passenger vehicle. Most of its structural components are made of steel. Other parts are made of aluminum and plastic.



High Strength Steel

High strength steel is used in the blue and red colored areas. Ultra-high strength steel is utilized in the purple colored areas.



Vehicle Description

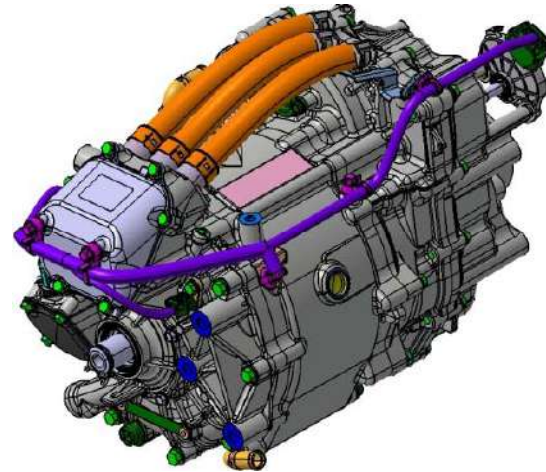
Power Control Unit (PCU)

The PCU is located under the hood above the electric motor and houses the on-board charger, the DC to DC converter, the motor control unit, and the power drive unit. These components are non-serviceable, and the PCU should not be opened or disassembled.



Electric Motor

The Fit EV is powered by a high-voltage (HV) motor located under the hood below the PCU.



Vehicle Description

12-Volt Battery

A conventional 12-volt battery is located under the hood on the driver's side of the vehicle. This battery powers the airbags, lights, audio system, and other standard electrical components. In an emergency situation, it may be necessary to disconnect or cut the 12-volt battery negative cable and the main fuse box supply cable.



High-Voltage (HV) Battery Pack

The 20 kilowatt hour (kWh) high-voltage lithium-ion battery pack is located in a well protected area underneath the vehicle. The battery pack is made up of 18 modules that are wired in parallel and series. Each module contains 24 individual 2.3-volt cells, which are housed together with the battery system controls and contactors. Total voltage of the battery pack is approximately 331 volts.



Vehicle Description

High-Voltage Cables

High-voltage flows through easy to identify heavy-duty orange cables from the HV battery to the electric motor and other high voltage components, such as the A/C compressor shown here. These cables are purposely routed through areas away from the usual cut points.



Occupant Protection Equipment

The Fit EV is equipped with lap/shoulder belts in all five seating positions. Front seat belts are equipped with pyrotechnically activated -tensioners that help tighten the seat belt in a crash. Front, front side, and side curtain airbags are also provided, each having a deactivation time of 3 minutes.

In a collision severe enough to deploy one or more of the airbags, the Fit EV electrical system is designed to automatically open the electrical contactors. This disconnects the high-voltage battery from the other high-voltage components and stops the flow of electricity in the high-voltage cables.

Responders should always assume, however, that the HV system is powered “on” and take the appropriate action described later in this guide to power the system “off.”

It takes about 3 minutes for the airbags and tensioners to de-power after the ignition switch has been turned off or the 12-volt battery has been disconnected.



Recharging System

The high-voltage (HV) battery can be recharged using either the 120-volt charge cord provided with the vehicle or by using approved 240-volt equipment. The vehicle's charge port is located behind a small door on the left front fender. Recharging can take as little as 3 hours when using a 240-volt 32-amp electric vehicle supply equipment.



Potential Hazards

Electric Shock

Unprotected contact with any electrically charged or “hot” high-voltage component can cause serious injury or death. Receiving an electric shock from a Fit EV, however, is highly unlikely because of the following:

- Contact with the battery module or other high-voltage components only can occur if it is damaged and the contents are exposed or if it is opened without following proper precautions.
- Contact with the electric motor only can occur after one of more components are removed.
- The high-voltage cables can be easily identified by their distinctive orange color and contact with them can be avoided.

If severe damage causes high-voltage components to become exposed, responders should take appropriate precautions and wear insulated personal protective equipment.



Potential Hazards

Lithium-ion Battery Fumes or Fire

A damaged high-voltage battery can emit toxic fumes and the organic solvent used as electrolyte is flammable and corrosive. Even after a lithium-ion battery fire appears to have been extinguished, a renewed or delayed fire can occur. The battery manufacturer cautions responders that extinguishing a lithium-ion battery fire will take a large and sustained volume of water. If the electrolyte were to simply leak out, appropriate skin and eye protection are recommended. Any battery electrolyte that may have contacted the skin or eyes should be thoroughly rinsed with clean water.

Responders should always ensure that a Fit EV with a damaged battery is kept outdoors and far away from other flammable objects in order to minimize the possibility of collateral fire damage should the battery catch on fire.



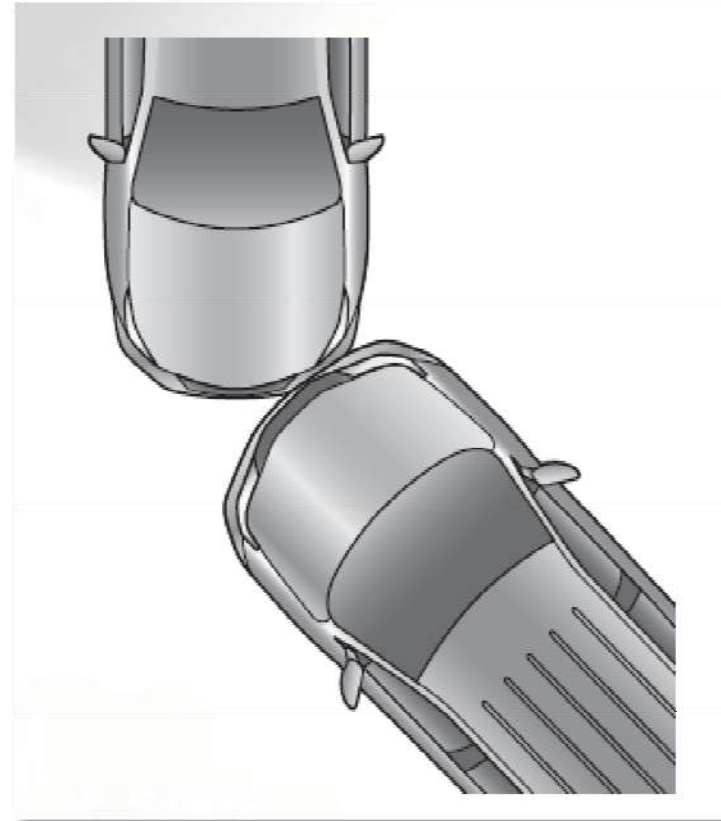
Emergency Procedures

Vehicle Collision

In the event of a crash, the airbag control unit makes a judgment based on input from the impact sensors, and if the input values meet various threshold requirements, the airbag control unit sends a signal to the battery ECU. The battery ECU then turns off the battery contactors stopping the flow of electrical current from the high-voltage battery.

When responding to an incident involving a Honda Fit EV, we recommend that emergency personnel follow their organization's standard operating procedures for assessing and dealing with vehicle emergencies.

Given our knowledge of the Fit EV, we also recommend that responders follow the procedures on the following pages to avoid potentially lethal shock by high-voltage.



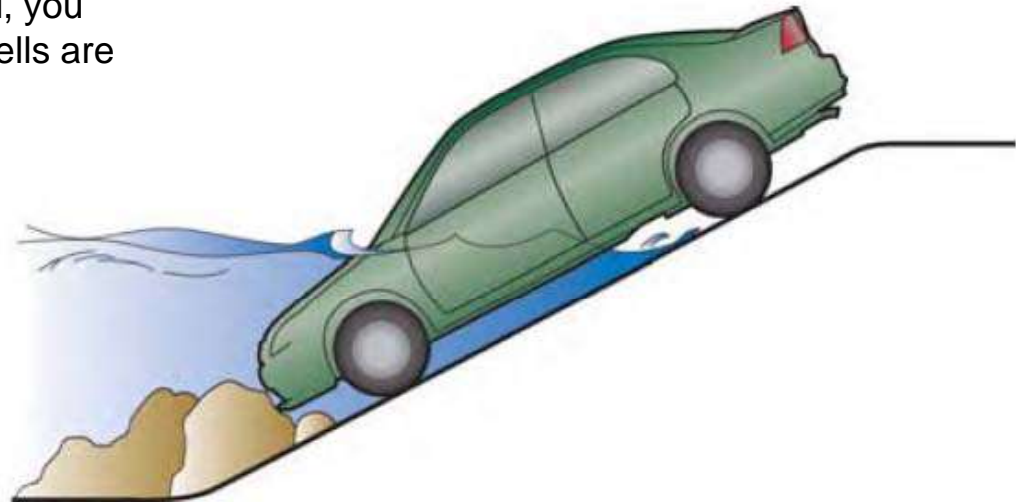
Emergency Procedures

Submerged Vehicle

If a Fit EV is submerged or partly submerged in water, first pull the vehicle out of the water. Then shut down the high-voltage system using one of the three procedures described on the following pages.

There is no risk of electric shock from touching the car's body or framework — in or out of the water.

If the high-voltage battery was submerged, you may hear noises from the battery as the cells are being discharged from shorting.



Emergency Procedures

Preferred Method for Shutting Down the High-Voltage System

This method is recommended for situations in which a first responder can safely reach the ignition key.

Turn the ignition key to the OFF (O) position and remove it.

Turning the ignition switch to the off position immediately turns off the flow of high-voltage electricity. After about 3 minutes, any undeployed airbags and the front seat-belt tensioners will also be completely shut down. Removing the key prevents the system from accidentally being turned on again.

Note: If the vehicle is being charged, you will also need to disconnect the charge cable.



The OFF (O) Position

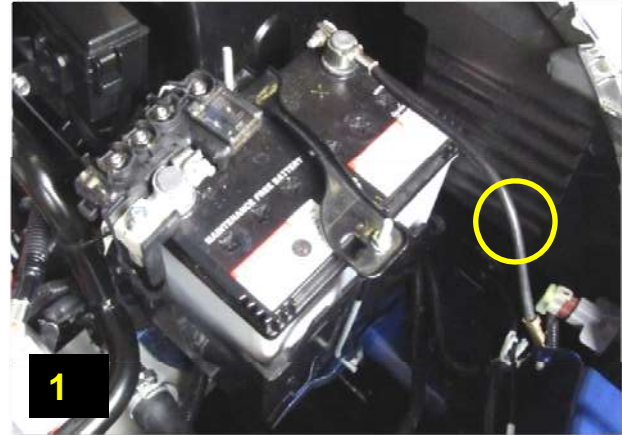
Emergency Procedures

Alternate Method for Shutting Down the High-Voltage System

This method is recommended for situations in where a responder *cannot* safely reach the ignition key.

1. Locate the 12-volt battery under the hood and disconnect or cut the negative battery cable.
2. Disconnect or cut the main fuse box power supply cable (circled in yellow at right) that is connected to the positive battery terminal.

Note: If the vehicle is being charged, you will also need to disconnect the charge cable.



Emergency Procedures

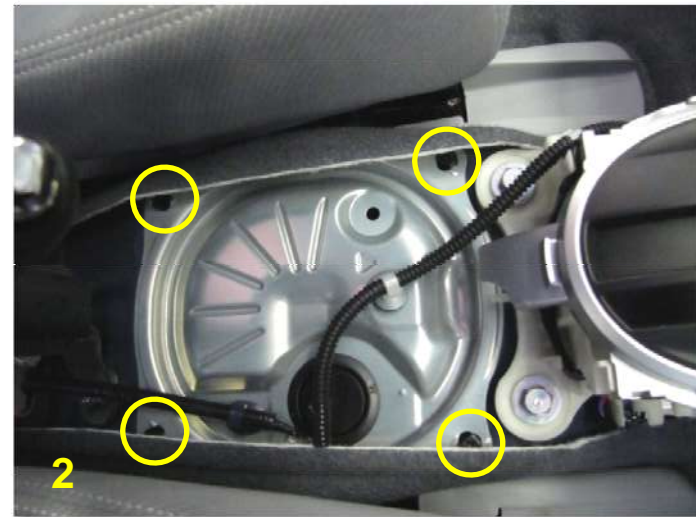
Least Desired Method of Shutting Down the High-Voltage System

Shutting off the high-voltage battery through the main service disconnect switch is not recommended but can be performed if necessary.

To access the main service disconnect switch:

1. Remove the center console by removing the three mounting screws:
 - one screw is located in the rear storage area
 - one screw is located on both the left and right front sides of the console.
2. After the center console has been removed, remove the metal cover shown using a Phillips screwdriver. To release the cover, turn each of the 4 attaching clips a $\frac{1}{4}$ " turn counter-clockwise.

Note: If the vehicle is being charged, you will also need to disconnect the charge cable.



Emergency Procedures

Least Desired Method of Shutting Down the High-Voltage System, cont'd.

3. After the metal cover has been removed, locate and remove the access cover plug



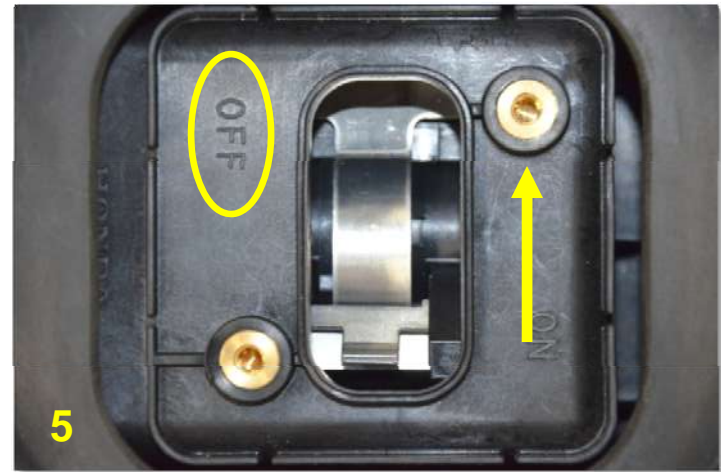
4. After the access cover plug has been removed, remove the two access cover bolts using a 10mm wrench.



Emergency Procedures

Least Desired Method of Shutting Down the High-Voltage System, cont'd.

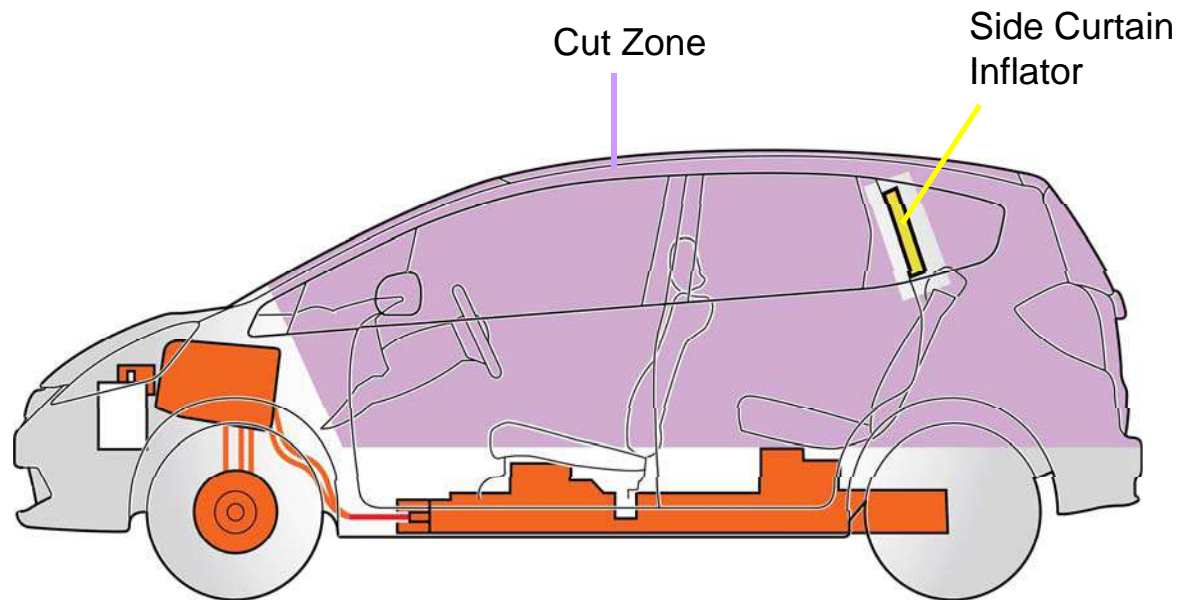
5. After the access cover has been removed, move the switch towards the drivers side of the vehicle to the "OFF" position indicated on the switch housing.



Emergency Procedures

Extricating Occupants

If you need to cut the vehicle body, or use Jaws-of-Life equipment to remove occupants, be sure to stay within the cut zone indicated in the illustration below.



Emergency Towing & Repairs

Emergency Towing

The preferred method is to use a flat bed tow truck. If wheel lift equipment must be used, be sure to suspend the front wheels and release the parking brake.

Be aware that when rolling a damaged Fit EV on the ground the electric motor can produce electricity and remains a potential source of electric shock even when the high-voltage system is turned off.

Dealer inspection and Repair

A damaged Fit EV should be taken to directly to a Honda Fit EV dealer for a thorough inspection and, if appropriate, for any necessary repairs. A Fit EV dealer can also recycle a Fit EV battery that is no longer usable.



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