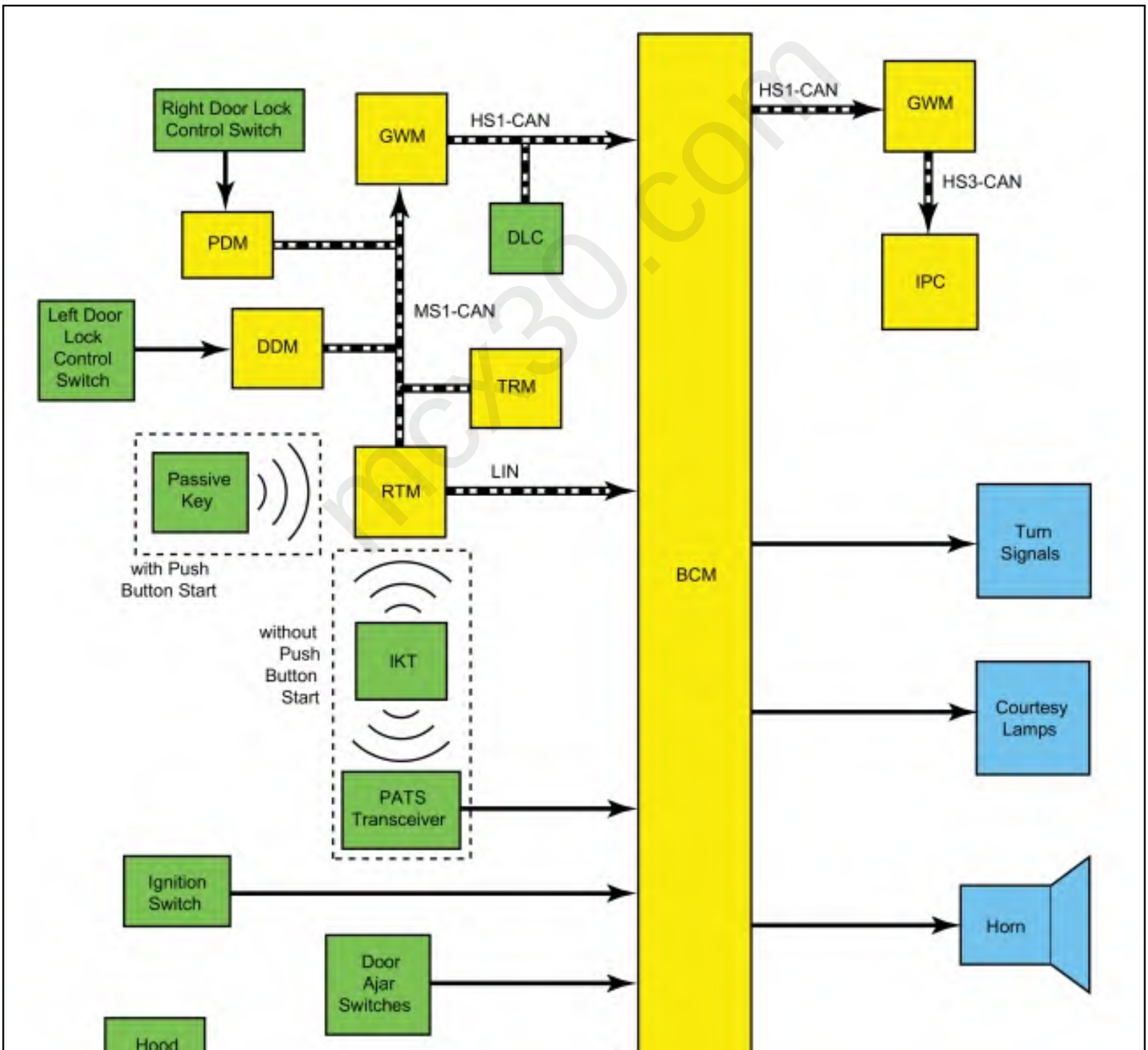
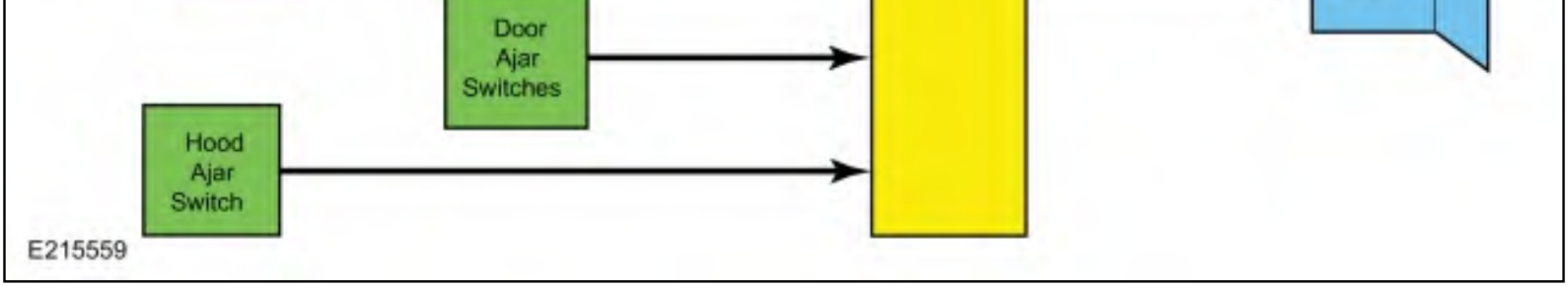
Perimeter Anti-Theft Alarm - System Operation and Component Description

System Operation

System Diagram





Network Message Chart

IPC Network Input Messages

Broadcast Message	Originating Module	Message Purpose
Perimeter alarm chime request	BCM	Used by the IPC to sound the perimeter alarm chime during the 12-second delay.

BCM Network Input Messages

Broadcast Message	Originating Module	Message Purpose
RKE data	RTM	Used by the BCM to arm/disarm the perimeter alarm or to activate/deactivate the panic alarm.
Driver door lock switch status	DDM	Used by the BCM to arm the perimeter alarm.
Passenger door lock switch status	PDM	Used by the BCM to arm the perimeter alarm.

Perimeter Alarm

The BCM controls the operation of the perimeter alarm. It monitors inputs from the RKE system, the passive entry system (if equipped), the power door lock system, the PATS and the ignition status to determine when to arm the perimeter alarm.

The BCM monitors all of the door ajar switches, the hood ajar switch, the TRM (if equipped), the intrusion sensor, the CAN and the ignition status to determine when to activate the perimeter alarm. When the BCM detects an input indicating an unauthorized entry into the vehicle, the BCM activates the perimeter alarm by sounding the traffic horn and flashing all the turn signals and interior courtesy lamps at regular intervals.

The BCM monitors the RKE system, the passive entry system (if equipped), and the PATS to determine when to disarm the perimeter alarm.

A switch inhibit feature temporarily disables the door lock control switches and the tailgate release switch 20 seconds after the vehicle is electronically locked. For detailed information of the switch inhibit feature,

Refer to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Visual and audible feedback is also provided when locking or unlocking the vehicle. For detailed information of the vehicle locking and unlocking feedback,
Refer to: Handles, Locks, Latches and Entry Systems - System Operation and Component Description (501-14 Handles, Locks, Latches and Entry Systems, Description and Operation).

Arming The Perimeter Alarm

The perimeter alarm is ready to arm any time the ignition is off. The perimeter alarm pre-arms when any of the following occur:

- Pressing the lock button on a RKE transmitter
- Pressing the door lock control switch to the lock position with a front door open, and then closing the door
- Pressing the 7/8 and 9/0 buttons simultaneously on the keyless entry keypad (if equipped)
- Locking the vehicle with the passive entry feature (if equipped)

Once the system is pre-armed, there is a 20-second countdown before the perimeter alarm is armed. Each entry point to the vehicle (hood and doors) is armed separately and must be closed before that entry point begins the 20-second countdown to become armed. If all entry points are closed, the turn signals flash upon locking indicating that all entry points are entering the 20-second countdown.

Perimeter Alarm Activation

The perimeter alarm has a 12-second delay when the driver front door is opened without using a valid programmed RKE transmitter, the keyless entry keypad (if equipped) or a passive key (if equipped) to unlock the vehicle. During the delay, a chime sounds. If the perimeter alarm is not disarmed within the 12-second delay, the alarm activates.

The perimeter alarm activates when:

- The driver front door is opened without first receiving an unlock command from the passive entry feature (if equipped), the keyless entry keypad (if equipped) or a valid programmed RKE transmitter, and the 12-second delay has expired
- Any other door or the hood is opened without first receiving an electronic unlock command from the passive entry feature (if equipped), the keyless entry keypad (if equipped) or a valid programmed RKE transmitter
- The ignition transitions to RUN without a valid PATS key read received
- the BCM detects an attempt by a diagnostic scan tool to establish communication on the CAN.

The perimeter alarm only activates 10 times per arming cycle. After that, the alarm does not activate. To enable the perimeter alarm again, disarm the perimeter alarm and then arm it again.

Disarming The Perimeter Alarm

The perimeter alarm disarms when:

- pressing the unlock button on a door lock control switch within the 20-second pre-arm
- the smart unlock feature activates within the initial 20-second pre-arm
- pressing the unlock button on a valid programmed RKE transmitter
- using a valid programmed key to change the ignition to RUN
- entering the correct vehicle unlock code on the keyless entry keypad (if equipped)
- unlocking a front door or opening the tailgate using the passive entry feature (if equipped)

CAN Protection Strategy

When the perimeter alarm is armed, the BCM monitors the CAN. If a scan tool is connected to the DLC, and an attempt is made to establish a session with the BCM, it activates the perimeter alarm.

Every time the BCM detects an unauthorized access (alarm activates), all BCM programming, PID monitoring and self-test sessions are blocked for 10 minutes. At the end of the 10 minute time period, the traffic horn chirps to indicate the 1 minute of opportunity to communicate with the BCM and program keys if none are available.

Refer to: Anti-Theft Security Access and Key Programming - Scan Tool (419-01C Passive Anti-Theft System (PATS) - Vehicles With: Keyless Vehicle System, General Procedures).

Component Description

Door Ajar Switch

The door ajar switch is a single pole switch monitored by the BCM. The primary function of the door ajar switch is used for the courtesy lamps system.
Refer to: Interior Lighting - System Operation and Component Description (417-02 Interior Lighting, Description and Operation).

Hood Ajar Switch

The hood ajar switch is a single pole switch (integrated into the hood latch) that is normally closed when the hood is closed. When the hood is opened, the hood ajar switch opens to indicate an open hood.

The BCM sends a signal to the hood ajar switch, and based on the input, the BCM determines if the hood is open or closed.

Intrusion Sensor

The intrusion sensor is powered at all times and is monitored by the BCM. When the perimeter alarm is armed, the intrusion sensor monitors the passenger compartment for movement and, if movement is detected, it sends a signal to the BCM.

When the intrusion sensor is replaced, the BCM configuration must first be uploaded into a diagnostic scan tool, a

new intrusion sensor installed, and then the BCM configuration downloaded back into the BCM for the new intrusion sensor to operate correctly.

BCM

The BCM controls the operation of the perimeter alarm. Based on input, the BCM arms, disarms, activates or deactivates the perimeter alarm.

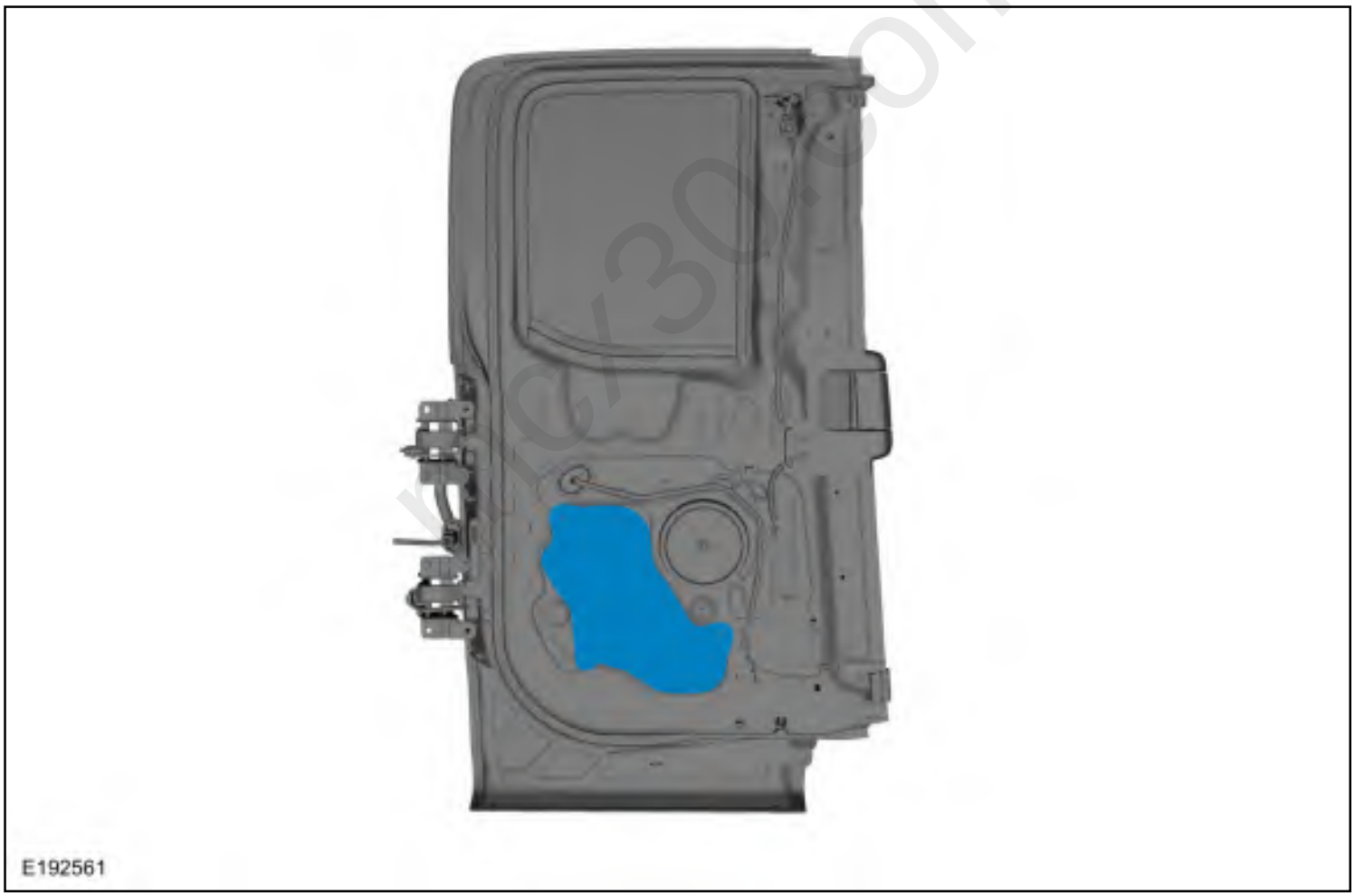
The BCM requires PMI when replaced. Additionally, at least 2 keys must be programmed and the parameter reset procedure carried out.

Rear Door Ajar Switch - SuperCab

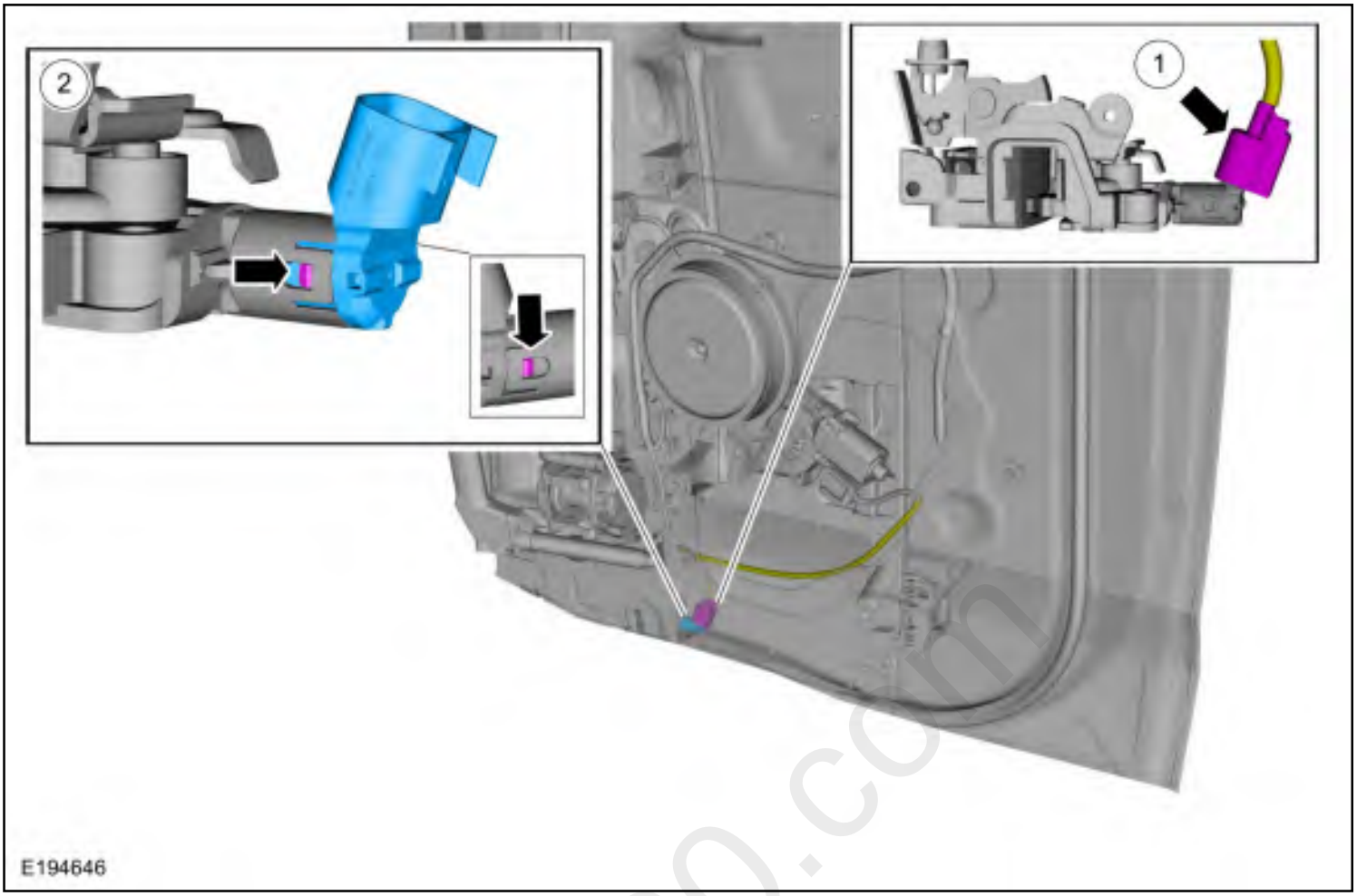
Removal

1. Remove the rear door trim panel.
   Refer to: Rear Door Trim Panel - SuperCab (501-05 Interior Trim and Ornamentation, Removal and Installation).

2. Remove the water shield.



1. Disconnect the electrical connector.
2. Release the tabs and remove the rear door ajar switch.



Installation

1. To install, reverse the removal procedure.

419-01A to review the procedures for achieving the various ignition states (ignition OFF, ignition in ACCESSORY, ignition ON and ignition START) on vehicles with this feature.

In the event of a moderate to severe collision, the vehicle is equipped with a Fuel Pump and Sender Shut-off Feature that is initiated by the event notification signal.

The event notification feature provides other vehicle subsystems with information pertaining to restraint system deployment or fuel cutoff status. When an impact occurs which exceeds a predetermined threshold, theRCM sends a signal on a dedicated circuit to the BCM.The BCM then sends a signal on a second hard-wired circuit to the PCM, which initiates fuel cut-off and disables the fuel system.

Should the vehicle shut off after a collision due to this feature, the vehicle may be restarted by first turning the ignition to the OFF position and then turn the ignition to the ON position. In some instances the vehicle may not start the first time and may take one additional ignition cycle.