

## SECTION 9T

# REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM

**CAUTION:** *Disconnect the negative battery cable before removing or installing any electrical unit or when a tool or equipment could easily come in contact with exposed electrical terminals. Disconnecting this cable will help prevent personal injury and damage to the vehicle. The ignition must also be in LOCK unless otherwise noted.*

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## DESCRIPTION AND OPERATION

### REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM

The remote keyless entry and anti-theft system can perform the following functions:

- Remotely lock and unlock the vehicle doors with a hand-held high-frequency transmitter.
- Sense intrusion into the vehicle through the doors, the tailgate, or the hood.
- Activate a warning to signal an intrusion.
- Help the driver find the vehicle in a parking area.
- Automatically re-lock the doors if a door or the trunk is not opened within 30 seconds after the vehicle has been unlocked by the remote keyless entry.
- Communicate serial data to a scan tool to help diagnose system faults.

The remote keyless entry and anti-theft system consists of the following components:

- Keyless entry and anti-theft control module/receiver.
- Security indicator.
- Tailgate open switch.
- Door open switches.
- Central locking unit.
- Flashing turn signal lamps.
- Siren.
- Hood open switch.

### REMOTE LOCKING AND UNLOCKING

The hand-held transmitter locks and unlocks the vehicle doors by sending radio waves to the control module/receiver in the vehicle. The effective range of the transmitter varies between 5 and 10 meters (approximately 16 to 32 feet), depending on whether or not objects such as other vehicles are blocking the path of the radio waves.

The transmitter has a LOCK button and an UNLOCK button which only function when the ignition is OFF. Pressing the UNLOCK button has the following effects:

- The doors are unlocked.
- The turn signal lamps flash twice.
- The control module is disarmed.

Pressing the LOCK button has the following effects:

- The doors are locked.
- The turn signal lamps flash once.
- The control module is armed.

The transmitter has a replaceable battery. The battery is designed to last at least two years before replacement is necessary.

### SECURITY INDICATOR

There is a security indicator on the instrument panel. After the LOCK button of the transmitter is pressed, the module is placed in the armed mode, and the security indicator flashes. The security indicator turns ON for 1/8 second and OFF for 7/8 second. It then flashes at that frequency until the control module/receiver is disarmed.

### INTRUSION SENSING

The anti-theft function is armed if the transmitter sends the LOCK message to the control module/receiver when the ignition is OFF.

When the hood, the door, or the tailgate is opened, the hood open switch, the door open switch, or the tailgate open switch will change its input to ground. The alarm will be activated if the hood open sensor, the door open sensor, or the tailgate open sensor changes its input to ground before either of the following conditions occurs:

- An UNLOCK message is received from the transmitter.

### SIREN

The remote keyless entry system is armed when the LOCK message is received from the transmitter when the ignition is OFF. When the system is armed, it will activate the siren and flash the turn signals for 28 seconds if any of the following conditions occurs:

- A door is opened (front door open switch input is changed to ground).
- The tailgate is opened (tailgate open switch input is changed to ground).
- The hood is opened while the anti-theft system is armed (hood open switch input is changed to ground).

The siren is disarmed when any of the following conditions occurs:

- The ignition switch is turned ON with the key.
- The UNLOCK button or the LOCK button on the remote transmitter is pressed.

### VEHICLE LOCATOR

The remote keyless entry system assists the driver in locating the vehicle. When the vehicle is unlocked with the remote control, the turn signals flash twice to indicate the location of the vehicle. The duration of the flashes and the length of time between flashes is used to indicate certain vehicle conditions. Refer to "Fault or Alarm Indication" in this section.

## **AUTOLOCKING (SAFETY LOCK)**

The remote keyless entry system features an autolocking control. If the doors are unlocked with the remote transmitter when the control module/receiver is in the armed mode, the doors are automatically re-locked after 30 seconds unless any of the following events occur:

- The door is opened.
- The ignition switch is turned ON.
- The tailgate is opened.
- The hood is opened.

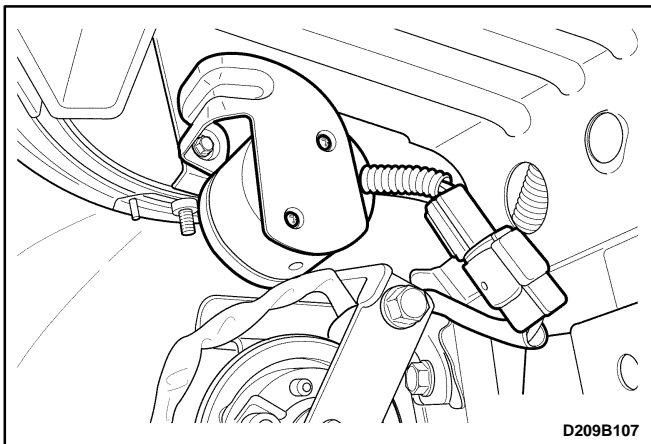
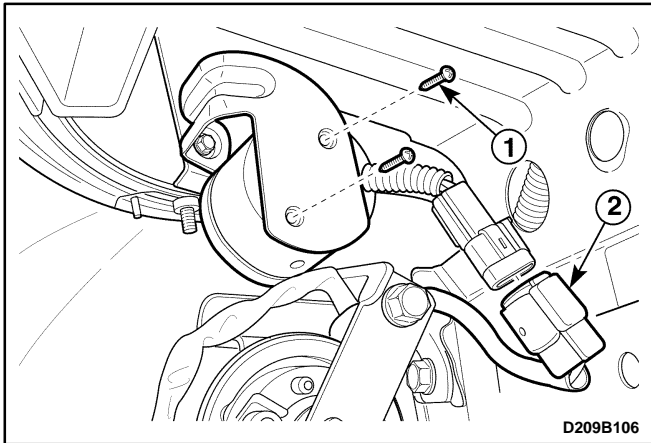
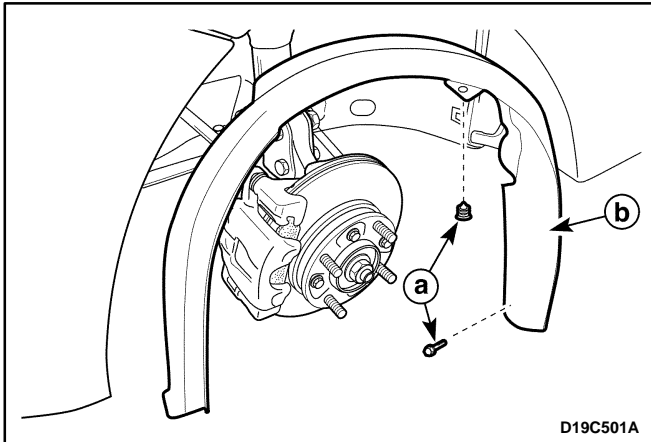
## **CONTROL MODULE/RECEIVER**

The remote keyless entry control module/receiver is contained in the tie-bar center. The module/receiver processes signals from the remote transmitter and the intrusion sensors, and it activates the alarm if an intrusion is detected.

The control module/receiver will not communicate with transmitters from other vehicles because there are over four billion possible electronic password combinations, and passwords are not duplicated. The control module/receiver has an attached antenna to detect signals from the transmitter.

## REPAIR INSTRUCTIONS

### ON-VEHICLE SERVICE



### SIREN

#### Removal Procedure

1. Disconnect the negative battery cable.
2. Raise and suitably support the vehicle.
3. Remove the front wheels.
4. Remove the front wheel house splash shield.
  - Remove the clip and bolts.
    - a. Bolts and clips.
  - Remove the wheel house splash shield.
    - b. Splash shield.
5. Remove the siren.
  - Remove the screws (1).
  - Disconnect the electrical connector (2).

#### Installation Procedure

1. Install the siren with the screws.
2. Connect the electrical connector.
3. Install the front wheel house splash shield with the clips and the bolts.
4. Install the front wheels.
5. Lower the vehicle.
6. Connect the negative battery cable.

## PASSWORD PROGRAMMING

If a transmitter is lost or damaged, the control module/receiver must be re-programmed to communicate with a new transmitter. The passwords recorded in the control module/receiver should not be deleted when power is off in the control module/receiver.

Each control module/receiver should be able to record five passwords. The following method is used to record new passwords in the control module/receiver:

1. Connect the scan tool to the data link connector (DLC) connector.
2. Send the programming mode message to the control module/receiver.
3. Press any button of the transmitter to generate a data code including a password which will be recorded by the control module/receiver. The control module/receiver sends a response message to the scan tool to indicate that the first password has been recorded.
4. Press any button of the transmitter three more times until the control module/receiver has responded that the third, fourth, and fifth passwords have been recorded.
5. Disconnect the scan tool.

The control module/receiver leaves the programming mode automatically and switches to the normal operating mode when either of the following conditions occurs:

- The scan tool is disconnected from the DLC.
- Five passwords are recorded in the control module/receiver.

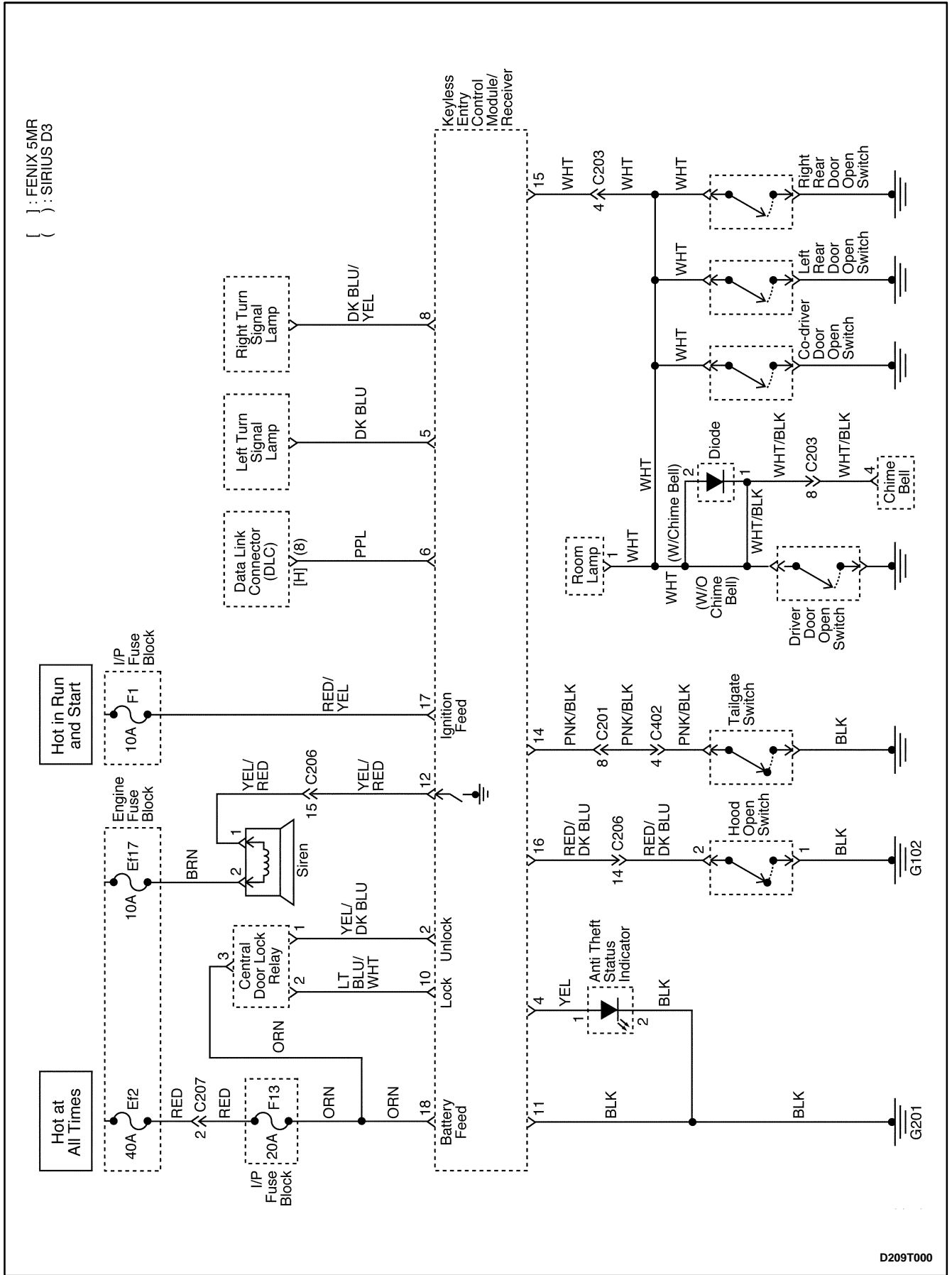
# SPECIFICATIONS

## FASTENER TIGHTENING SPECIFICATIONS

<b>Application</b>	<b>N•m</b>	<b>Lb-Ft</b>	<b>Lb-In</b>
Hood Open Switch Mounting Screw	8	–	71
Siren Bracket Mounting Bolt	22	16	–
Siren Mounting Screws	8	–	71

# SCHEMATIC AND ROUTING DIAGRAMS

## REMOTE KEYLESS ENTRY AND ANTI-THEFT SYSTEM



**BLANK**