2013 Cadillac XTS Owner Manual

In Brief 1-1
Instrument Panel 1-2
Initial Drive Information 1-4
Vehicle Features 1-15
Performance and Maintenance 1-20

Keys, Doors, and Windows 2-1
Keys and Locks 2-1
Doors 2-14
Vehicle Security 2-16
Exterior Mirrors 2-18
Interior Mirrors 2-19
Windows 2-20
Roof 2-24

Seats and Restraints 3-1
Head Restraints 3-2
Front Seats 3-4
Rear Seats 3-11
Safety Belts 3-14
Airbag System 3-22
Child Restraints 3-36

Storage 4-1
Storage Compartments 4-1
Additional Storage Features ... 4-4

Instruments and Controls 5-1
Controls 5-2
Warning Lights, Gauges, and Indicators 5-7
Information Displays 5-28
Vehicle Messages 5-34
Vehicle Personalization 5-45
Universal Remote System 5-51

Lighting 6-1
Exterior Lighting 6-1
Interior Lighting 6-6
Lighting Features 6-8

Infotainment System 7-1
Introduction 7-1

Climate Controls 8-1
Climate Control Systems 8-1
Air Vents 8-11
Maintenance 8-12

Driving and Operating 9-1
Driving Information 9-2
Starting and Operating 9-14
Engine Exhaust 9-21
Automatic Transmission 9-22
Drive Systems 9-24
Brakes 9-25
Ride Control Systems 9-28
Cruise Control 9-32
Driver Assistance Systems ... 9-43
Fuel 9-55
Towing 9-59
Conversions and Add-Ons ... 9-64

Vehicle Care 10-1
General Information 10-2
Vehicle Checks 10-3
Headlamp Aiming 10-23
Bulb Replacement 10-23
Electrical System 10-25
Wheels and Tires 10-34
Jump Starting 10-71
Towing 10-73
Appearance Care 10-76

2013 Cadillac XTS Owner Manual

Service and Maintenance ... 11-1
General Information 11-1
Cadillac Premium Care Maintenance 11-3
Maintenance Schedule 11-3
Special Application Services 11-9
Additional Maintenance and Care 11-10
Recommended Fluids, Lubricants, and Parts 11-13
Maintenance Records 11-15

Technical Data 12-1
Vehicle Identification 12-1
Vehicle Data 12-2

Customer Information 13-1
Customer Information 13-1
Reporting Safety Defects 13-12
Vehicle Data Recording and Privacy 13-14

OnStar 14-1
OnStar Overview 14-1
OnStar Services 14-2
OnStar Additional Information 14-5

Index i-1

The names, logos, emblems, slogans, vehicle model names, and vehicle body designs appearing in this manual including, but not limited to, GM, the GM logo, CADILLAC, the CADILLAC Crest and Wreath, and XTS are trademarks and/or service marks of General Motors LLC, its subsidiaries, affiliates, or licensors.

This manual describes features that may or may not be on your specific vehicle either because they are options that you did not purchase or due to changes subsequent to the printing of this owner manual. Please refer to the purchase documentation relating to your specific vehicle to confirm each of the features found on your vehicle. For vehicles first sold in Canada, substitute the name “General Motors of Canada Limited” for Cadillac Motor Car Division wherever it appears in this manual.

Keep this manual in the vehicle for quick reference.

Canadian Vehicle Owners

Propriétaires Canadiens

A French language copy of this manual can be obtained from your dealer or from:

On peut obtenir un exemplaire de ce guide en français auprès du concessionnaire ou à l'adresse suivante:

Helm, Incorporated
Attention: Customer Service
47911 Halyard Drive
Plymouth, MI 48170

Using this Manual

To quickly locate information about the vehicle, use the Index in the back of the manual. It is an alphabetical list of what is in the manual and the page number where it can be found.

Danger, Warnings, and Cautions

Warning messages found on vehicle labels and in this manual describe hazards and what to do to avoid or reduce them.

Danger indicates a hazard with a high level of risk which will result in serious injury or death.

Warning or **Caution** indicates a hazard that could result in injury or death.

Litho in U.S.A.
Part No. 20958490 B Second Printing

©2012 General Motors LLC. All Rights Reserved.

⚠ WARNING

These mean there is something that could hurt you or other people.

Notice: **This means there is something that could result in property or vehicle damage. This would not be covered by the vehicle's warranty.**

A circle with a slash through it is a safety symbol which means “Do Not,” “Do not do this,” or “Do not let this happen.”

Symbols

The vehicle has components and labels that use symbols instead of text. Symbols are shown along with the text describing the operation or information relating to a specific component, control, message, gauge, or indicator.

: This symbol is shown when you need to see your owner manual for additional instructions or information.

: This symbol is shown when you need to see a service manual for additional instructions or information.

Vehicle Symbol Chart

Here are some additional symbols that may be found on the vehicle and what they mean. For more information on the symbol, refer to the Index.

: Airbag Readiness Light

: Air Conditioning

: Air Conditioning Refrigerant Oil

: Antilock Brake System (ABS)

: Audio Steering Wheel Controls or OnStar®

: Brake System Warning Light

: Certified Technician

: Charging System

: Cruise Control

: Engine Coolant Temperature

: Exterior Lamps

: Flammable

: Fuel Gauge

: Fuses

: Headlamp High/Low-Beam Changer

: Heated Steering Wheel

: LATCH System Child Restraints

: Malfunction Indicator Lamp

: Oil Pressure

: Power

: Remote Vehicle Start

: Safety Belt Reminders

: Tire Pressure Monitor

: Traction Control/StabiliTrak®

: Windshield Washer Fluid

✍ NOTES

In Brief

Instrument Panel
Instrument Panel Overview 1-2

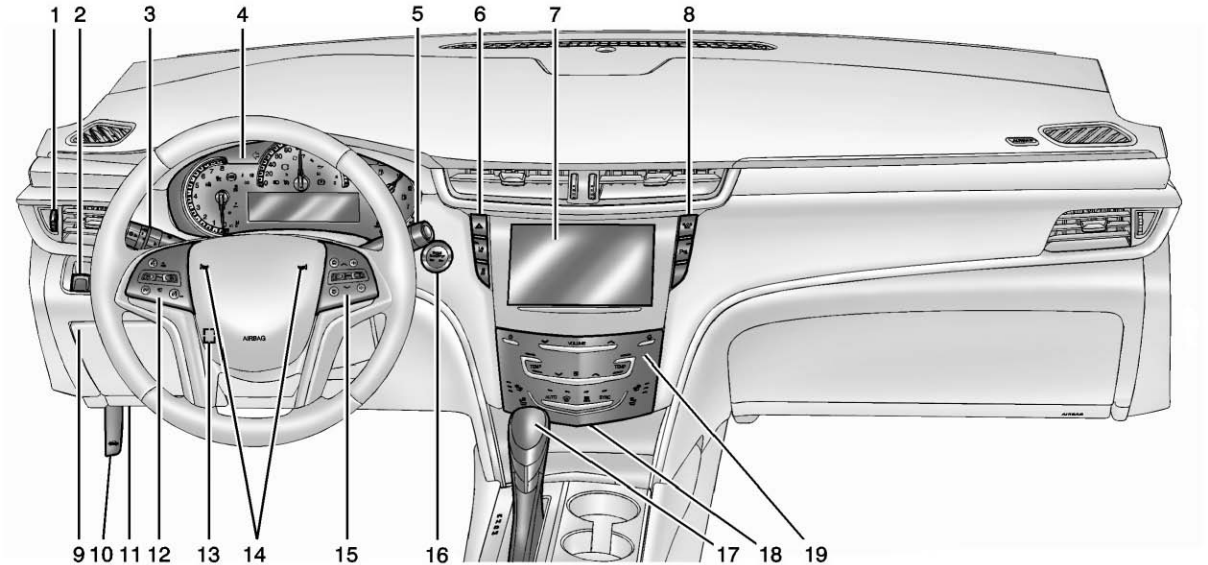
Initial Drive Information
Initial Drive Information 1-4
Remote Keyless Entry (RKE) System 1-4
Remote Vehicle Start 1-4
Door Locks 1-5
Trunk 1-5
Windows 1-6
Seat Adjustment 1-6
Memory Features 1-7
Second Row Seats 1-7
Heated and Ventilated Seats 1-8
Head Restraint Adjustment 1-8
Safety Belts 1-8
Passenger Sensing System ... 1-9
Mirror Adjustment 1-9
Steering Wheel Adjustment 1-10
Interior Lighting 1-10
Exterior Lighting 1-11
Windshield Wiper/Washer 1-12
Climate Controls 1-13
Transmission 1-15

Vehicle Features
Steering Wheel Controls 1-15
Cruise Control 1-16
Infotainment System 1-16
Driver Information Center (DIC) 1-17
Forward Collision Alert (FCA) System 1-17
Lane Departure Warning (LDW) 1-17
Side Blind Zone Alert (SBZA) 1-17
Rear Vision Camera (RVC) 1-18
Ultrasonic Parking Assist 1-18
Active Emergency Braking System 1-18
Power Outlets 1-18
Universal Remote System ... 1-19
Sunroof 1-19

Performance and Maintenance
Traction Control System (TCS) 1-20
StabiliTrak® System 1-20
Tire Pressure Monitor 1-21
Tire Sealant and Compressor Kit 1-21
Engine Oil Life System 1-21
Driving for Better Fuel Economy 1-22
Roadside Service 1-22
OnStar® 1-22

Instrument Panel

Instrument Panel Overview



1. *Air Vents on page 8-11*.
2. *Electric Parking Brake on page 9-26*.

   Instrument Panel Illumination Control on page 6-6.

   Head-Up Display (HUD) on page 5-31 (If Equipped).
3. *Exterior Lamp Controls on page 6-1*.

   Turn Signal Lever. See *Turn and Lane-Change Signals on page 6-6*.
4. *Instrument Cluster on page 5-9*.

   Driver Information Center (DIC) Display. See *Driver Information Center (DIC) on page 5-28*.
5. *Windshield Wiper/Washer on page 5-3*.
6. *Hazard Warning Flashers on page 6-5*.

   Lane Departure Warning (LDW) on page 9-53.

   Traction Control System (TCS) on page 9-28.

   StabiliTrak® System on page 9-29.
7. Infotainment Display.

   Infotainment System. See the infotainment manual.
8. Glove Box Button. See *Glove Box on page 4-2*.

   Parking Assist Button. See *Driver Assistance Systems on page 9-43*.
9. *Instrument Panel Storage on page 4-1*.
10. Hood Release. See *Hood on page 10-4*.
11. Data Link Connector (DLC) (Out of View). See *Malfunction Indicator Lamp on page 5-18*.
12. *Cruise Control on page 9-32*.

    Adaptive Cruise Control on page 9-34 (If Equipped).

    Forward Collision Alert (FCA) System on page 9-47 (If Equipped).

    Phone Button. See *Steering Wheel Controls on page 5-2*.

    Heated Steering Wheel on page 5-3 (If Equipped).
13. *Steering Wheel Adjustment on page 5-2*.
14. *Horn on page 5-3*.
15. *Steering Wheel Controls on page 5-2*.
16. START/STOP Button. See *Ignition Positions on page 9-15*.
17. Shift Lever. See *Automatic Transmission on page 9-22*.
18. *Instrument Panel Storage on page 4-1*.
19. *Dual Automatic Climate Control System (Uplevel) on page 8-1* or *Dual Automatic Climate Control System (Base) on page 8-6*.

    Heated and Ventilated Front Seats on page 3-9.

Initial Drive Information

This section provides a brief overview about some of the important features that may or may not be on your specific vehicle.

For more detailed information, refer to each of the features which can be found later in this owner manual.

Remote Keyless Entry (RKE) System

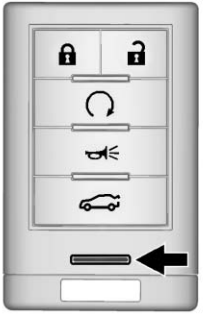
The Remote Keyless Entry (RKE) transmitter may be used to lock and unlock the doors from up to 60 m (195 ft) away from the vehicle.

: Press to lock all doors.

: Press to unlock the driver door or all doors depending on the vehicle personalization settings. See “Remote Lock, Unlock, Start” under *Vehicle Personalization on page 5-45*.

: Press and release one time to initiate vehicle locator. Press and hold for three seconds to sound the panic alarm. Press again or start the vehicle to cancel the panic alarm.

: Press and hold to release the trunk.



Press the key release button near the bottom of the transmitter to remove the key. The key can be used for the driver door.

See *Keys on page 2-1* and *Remote Keyless Entry (RKE) System Operation on page 2-3*.

Remote Vehicle Start

With this feature the engine can be started from outside of the vehicle.

Starting the Vehicle

1. Press and release on the RKE transmitter.
2. Immediately press and hold for at least two seconds or until the turn signal lamps flash.
3. Press the brake pedal and select the ON/RUN/START ignition mode to drive the vehicle.

When the vehicle starts, the parking lamps will turn on and remain on as long as the engine is running. The doors will be locked and the climate control system may come on.

The engine will continue to run for 10 minutes. Repeat the steps for a 10-minute time extension. Remote start can be extended only once.

Canceling a Remote Start

To cancel a remote start, do any of the following:

- Press and hold until the parking lamps turn off.
- Turn on the hazard warning flashers.
- Turn the vehicle on and then off.

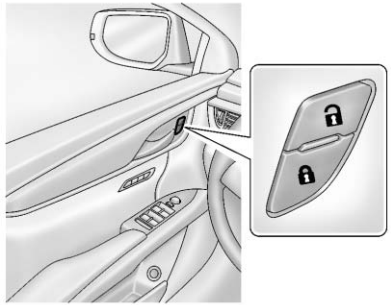
See *Remote Vehicle Start on page 2-8*.

Door Locks

To lock or unlock a door manually:

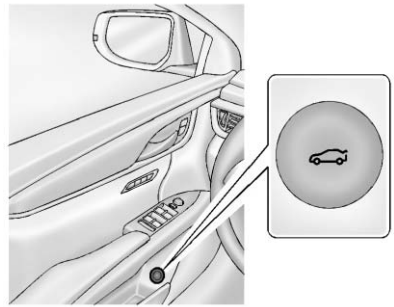
- From the outside, if the vehicle is equipped with keyless access, press the button on the door handle and pull the handle when the Remote Keyless Entry (RKE) transmitter is within range. See *Remote Keyless Entry (RKE) System Operation on page 2-3*.
- Use the key in the driver door. The key cylinder is covered by a cap. See *Door Locks on page 2-10*.
- From the inside, to lock a door push down on the door lock knob on top of the door. To unlock a door, pull once on the door handle to unlock it, and again to open it.

Power Door Locks



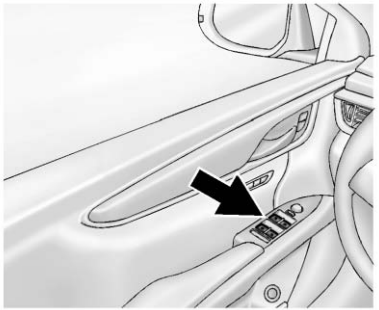
- From the inside, press or . See *Power Door Locks on page 2-12*.
- From the outside, press or on the RKE transmitter. See *Remote Keyless Entry (RKE) System Operation on page 2-3*.

Trunk



To open the trunk, press from inside the vehicle or on the Remote Keyless Entry (RKE) transmitter, or push the touch pad on the rear of the trunk above the license plate. See *Remote Keyless Entry (RKE) System Operation on page 2-3* and *Trunk on page 2-14*.

Windows



The power windows only operate with the ignition in ACC/ACCESSORY or ON/RUN/START, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP) on page 9-19*.

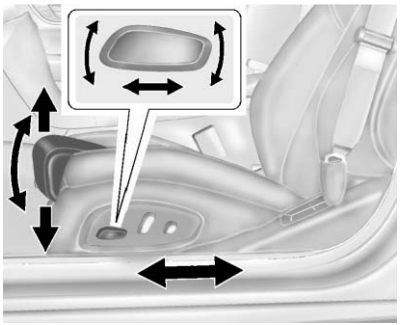
The power window switches on the driver door control all the windows. Each passenger door has a switch that controls only that window.

Press the switch to lower the window. Pull the switch up to raise it.

See *Power Windows on page 2-20*.

Seat Adjustment

Power Seats

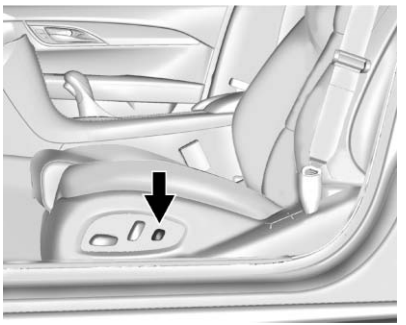


To adjust the seat:

- Move the seat forward or rearward by sliding the control forward or rearward.
- Raise or lower the front part of the seat cushion by moving the front of the control up or down.
- Raise or lower the seat by moving the rear of the control up or down.

See *Power Seat Adjustment on page 3-4*.

Lumbar Adjustment



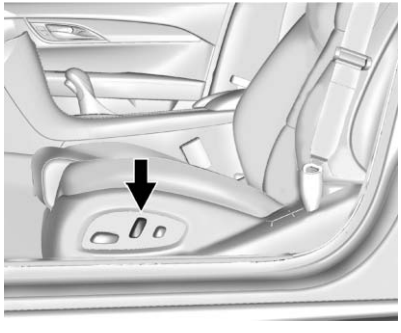
To adjust the lumbar support:

- Press and hold the control forward to increase or rearward to decrease lumbar support.

- Press and hold the control upward to raise or downward to lower the height of the lumbar support.

See *Lumbar Adjustment on page 3-5*.

Reclining Seatbacks

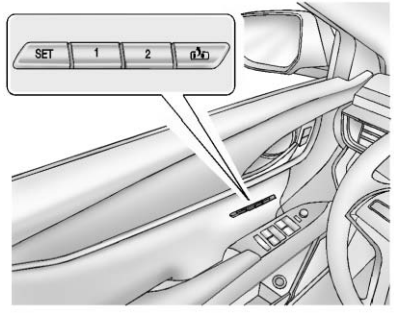


To adjust the seatback:

- Tilt the top of the control rearward to recline.
- Tilt the top of the control forward to raise.

See *Reclining Seatbacks on page 3-6*.

Memory Features



If available, the SET, "1," "2," and (Exit) buttons on the driver door are used to manually save and recall memory settings for the driver seat, outside mirrors, and power tilt and telescoping steering column. These manually stored positions are referred to as Button Memory positions.

The vehicle will also automatically save driver seat, outside mirror, and power tilt and telescoping steering column positions to the current driver Remote Keyless Entry (RKE) transmitter when the ignition is placed in OFF/LOCK. These automatically stored positions are referred to as RKE Memory positions.

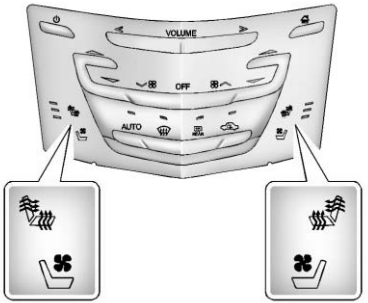
See *Memory Seats on page 3-7* and *Vehicle Personalization on page 5-45*.

Second Row Seats

On some vehicles, either side of the seatback can be folded for more cargo space.

See *Rear Seats on page 3-11*.

Heated and Ventilated Seats



If available, the buttons are near the climate controls on the center stack. To operate, the ignition must be in ON/RUN/START.

Press or to heat the driver or passenger seat cushion and seatback.

Press or to ventilate the driver or passenger seat.

Press the button once for the highest setting. With each press of the button, the seat will change to the next lower setting, and then to the off setting. The indicator lights next to the buttons indicate three for the highest setting and one for the lowest. If the front heated seats are on high, the level may automatically be lowered after approximately 30 minutes.

See *Heated and Ventilated Front Seats on page 3-9*.

Head Restraint Adjustment

Do not drive until the head restraints for all occupants are installed and adjusted properly.

To achieve a comfortable seating position, change the seatback recline angle as little as necessary while keeping the seat and the head restraint height in the proper position.

See *Head Restraints on page 3-2* and *Power Seat Adjustment on page 3-4*.

Safety Belts

Refer to the following sections for important information on how to use safety belts properly:

- *Safety Belts on page 3-14*.
- *How to Wear Safety Belts Properly on page 3-15*.
- *Lap-Shoulder Belt on page 3-16*.

- *Lower Anchors and Tethers for Children (LATCH System) on page 3-43*.

Passenger Sensing System

United States

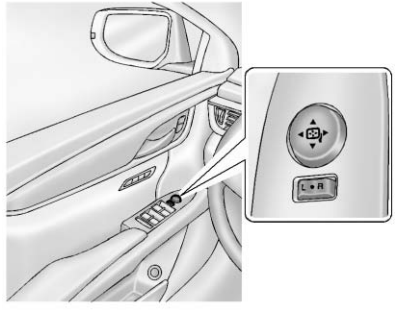
Canada

The passenger sensing system will turn off the front outboard passenger frontal airbag and knee airbag under certain conditions. No other airbag is affected by the passenger sensing system. See *Passenger Sensing System on page 3-29*.

The passenger airbag status indicator lights on the overhead console when the vehicle is started. See *Passenger Airbag Status Indicator on page 5-17*.

Mirror Adjustment

Exterior Mirror



1. Move the selector switch to L (Left) or R (Right) to choose the driver or passenger mirror.
2. Press one of the four arrows to move the mirror.
3. Move the selector switch to ● to deselect the mirror.

The vehicle has manual folding mirrors. See *Folding Mirrors on page 2-19*.

Interior Mirror

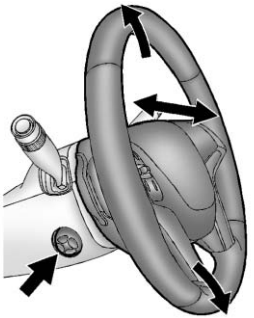
Adjustment

Hold the rearview mirror in the center and move it to view the area behind the vehicle.

Automatic Dimming Rearview Mirror

The vehicle has an automatic dimming rearview mirror. The mirror will automatically reduce the glare from the headlamps from behind. The dimming feature comes on when the vehicle is started. See *Automatic Dimming Rearview Mirror on page 2-19*.

Steering Wheel Adjustment



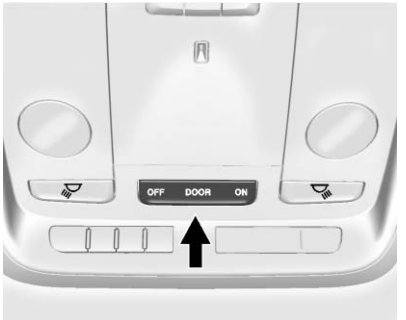
Press the control to move the tilt and telescoping steering wheel up and down or forward and rearward.

Do not adjust the steering wheel while driving.

Interior Lighting

Dome Lamp

The dome lamp is in the overhead console.



To change the dome lamp settings, press the following:

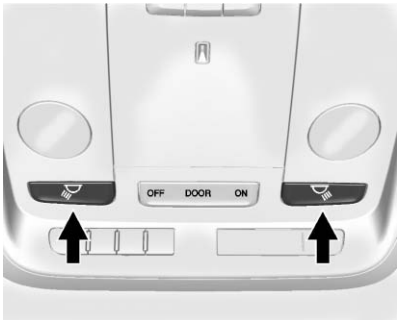
OFF: Turns the lamp off, even when a door is open.

DOOR: The lamp comes on automatically when a door is opened.

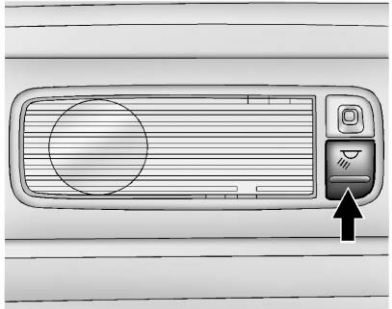
ON: Turns the dome lamp on.

Reading Lamps

There are reading lamps on the overhead console and over the rear passenger doors. These lamps come on automatically when any door is opened. To manually turn the reading lamps on or off:



Press or next to each overhead console reading lamp.



Press the button near the rear passenger reading lamps.

For more information on interior lighting, see *Instrument Panel Illumination Control on page 6-6*.

Exterior Lighting

The exterior lamp control is on the turn signal lever.

Turn the control to the following positions:

⏻ **:** Turns off the exterior lamps. The knob returns to the AUTO position after it is released. Turn to ⏻ again to reactivate the AUTO mode.

AUTO: Automatically turns the exterior lamps on and off, depending on outside lighting.

: Turns on the parking lamps, together with the sidemarker lamps, taillamps, license plate lamps, and instrument panel lights.

: Turns on the headlamps, together with the parking lamps, sidemarker lamps, taillamps, license plate lamps, and instrument panel lights.

See:

- *Exterior Lamp Controls on page 6-1*
- *Turn and Lane-Change Signals on page 6-6*
- *Headlamp High/Low-Beam Changer on page 6-3*

Windshield Wiper/Washer

With the ignition in ACC/ ACCESSORY or ON/RUN/START, move the lever to select the wiper speed.

HI: Use for fast wipes.

LO: Use for slow wipes.

INT: Move the lever up to INT for intermittent wipes, then turn the INT band up for more frequent wipes or down for less frequent wipes.

OFF: Use to turn the wipers off.

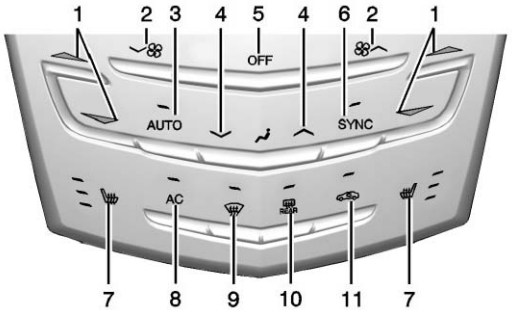
: For a single wipe, briefly move the lever down. For several wipes, hold the lever down.

: Pull the lever toward you to spray windshield washer fluid and activate the wipers.

See *Windshield Wiper/Washer on page 5-3*.

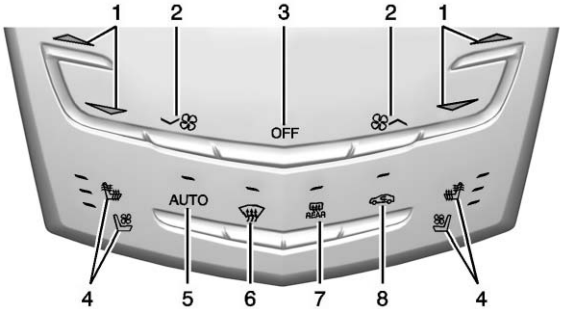
Climate Controls

The climate control buttons and the touch screen are used to adjust the heating, cooling, and ventilation.



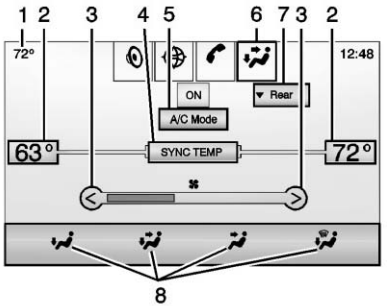
Dual Automatic Climate Control (Base)

1. Driver and Passenger Temperature Controls
2. Fan Control
3. AUTO (Automatic Operation)
4. Air Delivery Mode Control
5. OFF (Fan)
6. SYNC (Synchronized Temperature)
7. Driver and Passenger Heated Seats (If Equipped)
8. AC (Air Conditioning)
9. Defrost
10. Rear Window Defogger
11. Recirculation



Dual Automatic Climate Control (Uplevel)

1. Driver and Passenger Temperature Controls
2. Fan Control
3. OFF (Fan)
4. Driver and Passenger Heated and Ventilated Seats (If Equipped)
5. AUTO (Automatic Operation)
6. Defrost
7. Rear Window Defogger
8. Recirculation



Dual Automatic Climate Control Touch Screen (Uplevel)

1. Outside Temperature Display
2. Driver and Passenger Temperature Displays
3. Fan Control
4. SYNC TEMP (Synchronized Temperature)
5. AC Mode (Air Conditioning)
6. Climate Control Selection (Application Tray Button)
7. Rear (Rear Climate Control Touch Screen)
8. Air Delivery Mode Control

See *Dual Automatic Climate Control System (Uplevel) on page 8-1* or *Dual Automatic Climate Control System (Base) on page 8-6* and *Rear Climate Control System on page 8-9* (If Equipped).

Transmission

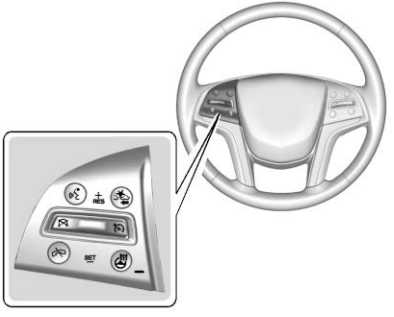
Automatic Transmission

Tap Shift

Tap Shift allows the driver to manually control the automatic transmission. To use Tap Shift, the shift lever must be in M (Manual Mode). Vehicles with this feature have indicators on the steering wheel. The controls are on the back of the steering wheel. Tap the left control to downshift, and the right control to upshift. A Driver Information Center (DIC) message indicates the gear the vehicle is in. See *Manual Mode on page 9-24*.

Vehicle Features

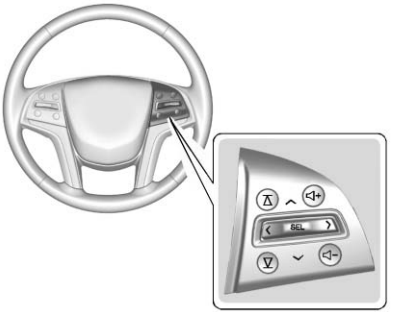
Steering Wheel Controls



For vehicles with audio steering wheel controls, some audio controls can be adjusted at the steering wheel.

: For vehicles with OnStar® or a Bluetooth® system, press to talk or interact with those systems. See *OnStar Overview on page 14-1* or “Bluetooth” in the separate infotainment manual.

: Press to decline an incoming call, or end a current call. Press to mute or unmute the infotainment system when not on a call.



< or >: Press to go to the previous or next menu option.

∧ or ∨: Move SEL up or down to go to the next or previous selection.

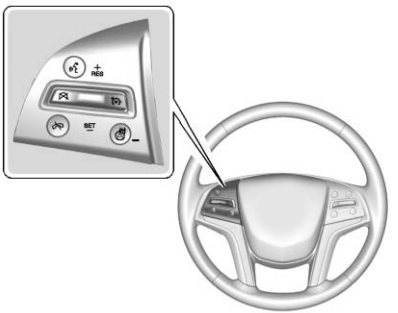
SEL: Press to select a highlighted menu option.

⊼ or ⊽: Press to go to the next or previous favorite radio station or CD/MP3 track.

+ or −: Press to increase or decrease the volume.

See *Steering Wheel Controls on page 5-2*.

Cruise Control



: Press to turn the system on and off. A white indicator appears in the instrument cluster when turned on.

+RES: Press briefly to resume to a previously set speed or to increase vehicle speed if the cruise control is already activated.

SET−: Press briefly to set the speed and activate cruise control or to decrease vehicle speed if the cruise control is already activated.

: Press to disengage cruise control without erasing the set speed from memory.

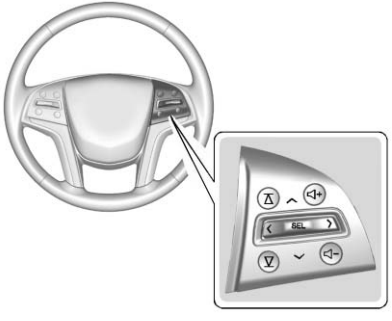
See *Cruise Control on page 9-32* or *Adaptive Cruise Control on page 9-34* (if equipped).

Infotainment System

See the separate infotainment manual for information on the radio, audio players, phone, navigation system, and voice or speech recognition. It also includes information on settings and downloadable applications (if equipped).

Driver Information Center (DIC)

The DIC display is in the instrument cluster. It shows the status of many vehicle systems.



∧ or ∨ : Move SEL up or down to go to the previous or next selection.

< or > : Press to move between the interactive display zones in the cluster. Press < to go back to the previous menu.

SEL: Press to open a menu or select a menu item. Press and hold to reset values on certain screens.

See *Driver Information Center (DIC) on page 5-28*.

Forward Collision Alert (FCA) System

FCA is intended to help avoid or reduce the harm caused by front-end crashes. FCA provides a green indicator when a vehicle is detected directly ahead. It provides a flashing visual alert and pulses the driver seat, or beeps, when approaching a vehicle directly ahead too quickly. FCA also provides a visual alert if following another vehicle much too closely.

See *Forward Collision Alert (FCA) System on page 9-47*.

Lane Departure Warning (LDW)

LDW is intended to help avoid unintentional lane departures at speeds of 56 km/h (35 mph) or greater. LDW uses a camera sensor to detect the lane markings. The LDW indicator, , appears green if a lane marking is detected. If the vehicle departs the lane, the indicator will change to amber and flash. In addition, the driver seat will pulse or beeps will sound.

See *Lane Departure Warning (LDW) on page 9-53*.

Side Blind Zone Alert (SBZA)

If available, SBZA will alert the driver to vehicles in the vehicle's side blind zone. When the system detects a vehicle in the side blind zone, the SBZA display will light up in the corresponding outside side mirror and will flash if the turn signal is on.

See *Side Blind Zone Alert (SBZA) on page 9-52*.

Rear Vision Camera (RVC)

RVC displays a view of the area behind the vehicle, on the center stack display, when the vehicle is shifted into R (Reverse).

See *Assistance Systems for Parking or Backing on page 9-43*.

Ultrasonic Parking Assist

URPA uses sensors on the rear bumper to assist with parking and avoiding objects while in R (Reverse). It operates at speeds less than 8 km/h (5 mph). URPA may display a warning triangle on the Rear Vision Camera screen and a graphic on the instrument cluster to provide the object distance. In addition, multiple beeps or pulses may occur if very close to an object.

The vehicle may also have the Front Parking Assist system, a higher speed Backing Warning System, and the Rear Automatic Braking system.

See *Driver Assistance Systems on page 9-43*.

Active Emergency Braking System

If the vehicle has Adaptive Cruise Control (ACC) it also has the Active Emergency Braking System, which includes Intelligent Brake Assist (IBA) and the Automatic Collision Preparation (ACP) System. These systems can provide a boost to braking or automatically brake the vehicle to help avoid crashes.

See *Active Emergency Braking System on page 9-50*.

Power Outlets

The accessory power outlets can be used to plug in electrical equipment, such as a cell phone or MP3 player.

The vehicle has three accessory power outlets:

- Inside the front storage area below the climate control system.
- Inside the center console.
- On the rear of the center console.

Lift the cover to access the accessory power outlet.

See *Power Outlets on page 5-6*.

Universal Remote System

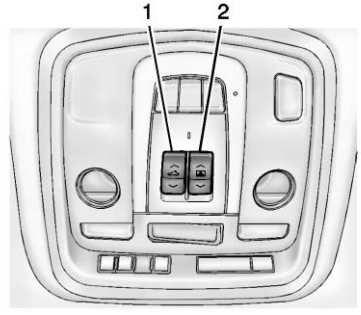
This system provides a way to replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home automation devices.

Read the instructions completely before attempting to program the Universal Remote system. Because of the steps involved, it may be helpful to have another person available to assist you with programming the Universal Remote system.

See *Universal Remote System on page 5-51*.

Sunroof

For vehicles equipped with a sunroof, the ignition must be in ON/RUN or ACC/ACCESSORY, or in Retained Accessory Power (RAP) to operate the sunroof and power sunshade. See *Ignition Positions on page 9-15* and *Retained Accessory Power (RAP) on page 9-19*.



1. Sunroof Switch
2. Sunshade Switch

Sunroof Switch

Vent Feature: Press and hold the front of to vent the sunroof. The sunshade will automatically open approximately 38 cm (15 in). Press and hold the rear of to close the vent.

Comfort Stop Feature: This feature stops the sunroof from opening fully. Press and release the rear of to open the sunroof to

the comfort open position. Press the rear of again to open the sunroof fully. If the sunshade is not fully open when the comfort feature is pressed the second time, the sunshade will open fully.

Express Close: Press and release the front of to express close the sunroof.

Sunshade Switch

Open/Close: Press and hold the front or rear of to open or close the sunshade to the desired position.

Express Open/Express Close: Press and release the rear or front of to express open or express close the sunshade. If the sunroof is opened, the sunshade will express close within a few inches of the opened sunroof.

See *Sunroof on page 2-24*.

Performance and Maintenance

Traction Control System (TCS)

The traction control system limits wheel spin. The system turns on automatically every time the vehicle is started.

- To turn off traction control, press and release the TCS/StabiliTrak button on the center stack. comes on in the instrument cluster and the appropriate DIC message is displayed. See *Ride Control System Messages on page 5-42*.
- Press the TCS/StabiliTrak button again to turn traction control back on.

See *Traction Control System (TCS) on page 9-28*.

StabiliTrak® System

StabiliTrak assists with directional control of the vehicle in difficult driving conditions. The system turns on automatically every time the vehicle is started.

- To turn off both traction control and StabiliTrak, press and hold the TCS/StabiliTrak button on the center stack until and come on in the instrument cluster and the appropriate DIC message is displayed. See *Ride Control System Messages on page 5-42*.
- Press the TCS/StabiliTrak button again to turn on both systems.

See *StabiliTrak® System on page 9-29*.

Tire Pressure Monitor

This vehicle may have a Tire Pressure Monitor System (TPMS).

The low tire pressure warning light alerts to a significant loss in pressure of one of the vehicle's tires. If the warning light comes on, stop as soon as possible and inflate the tires to the recommended pressure shown on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-10*. The warning light will remain on until the tire pressure is corrected.

The low tire pressure warning light may come on in cool weather when the vehicle is first started, and then turn off as the vehicle is driven. This may be an early indicator that the tire pressures are getting low and the tires need to be inflated to the proper pressure.

The TPMS does not replace normal monthly tire maintenance. Maintain the correct tire pressures.

See *Tire Pressure Monitor System on page 10-43*.

Tire Sealant and Compressor Kit

This vehicle may come with a spare tire and tire changing equipment or a tire sealant and compressor kit. The kit can be used to temporarily seal small punctures in the tread area of the tire. See *Tire Sealant and Compressor Kit on page 10-57*.

If the vehicle came with a spare tire and tire changing equipment, see *If a Tire Goes Flat on page 10-55*.

Engine Oil Life System

The engine oil life system calculates engine oil life based on vehicle use and displays the CHANGE ENGINE OIL SOON message when it is time to change the engine oil and filter. The oil life system should be reset to 100% only following an oil change.

Resetting the Oil Life System

1. Using the DIC controls on the right side of the steering wheel, display REMAINING OIL LIFE on the DIC. See *Driver Information Center (DIC) on page 5-28*. When remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. See *Engine Oil Messages on page 5-37*.
2. Press SEL on the DIC controls and hold SEL down for a few seconds to clear the CHANGE ENGINE OIL SOON message and reset the oil life at 100%.

   Be careful not to reset the oil life display accidentally at any time other than after the oil is

changed. It cannot be reset accurately until the next oil change.

The oil life system can also be reset as follows:

1. Turn the ignition on with the engine off.
2. Fully press and release the accelerator pedal three times within five seconds.

   If the CHANGE ENGINE OIL SOON message is not on, the system is reset.

See *Engine Oil Life System on page 10-9*.

Driving for Better Fuel Economy

Driving habits can affect fuel mileage. Here are some driving tips to get the best fuel economy possible.

- Avoid fast starts and accelerate smoothly.
- Brake gradually and avoid abrupt stops.
- Avoid idling the engine for long periods of time.
- When road and weather conditions are appropriate, use cruise control.
- Always follow posted speed limits or drive more slowly when conditions require.
- Keep vehicle tires properly inflated.
- Combine several trips into a single trip.
- Replace the vehicle's tires with the same TPC Spec number molded into the tire's sidewall near the size.
- Follow recommended scheduled maintenance.

Roadside Service

U.S.: 1-800-224-1400

Canada: 1-800-882-1112

TTY Users (U.S. Only): 1-888-889-2438

New vehicles are automatically enrolled in the Roadside Service program.

See *Roadside Service on page 13-5*.

Roadside Service and OnStar

If the vehicle has an active OnStar subscription, contact OnStar and the vehicle's current GPS location will be sent to an OnStar advisor to assess the situation, contact Roadside Service, and relay the exact location to send help.

OnStar®

If equipped, this vehicle has a comprehensive, in-vehicle system that can connect to a live Advisor for Emergency, Security, Navigation, Connection, and Diagnostic Services. See *OnStar Overview on page 14-1*.

Keys, Doors, and Windows

Keys and Locks
Keys 2-1
Remote Keyless Entry (RKE) System 2-2
Remote Keyless Entry (RKE) System Operation 2-3
Remote Vehicle Start 2-8
Door Locks 2-10
Power Door Locks 2-12
Delayed Locking 2-12
Automatic Door Locks 2-12
Lockout Protection 2-13
Safety Locks 2-13

Doors
Trunk 2-14

Vehicle Security
Vehicle Security 2-16
Vehicle Alarm System 2-16
Immobilizer 2-17
Immobilizer Operation 2-17

Exterior Mirrors
Convex Mirrors 2-18
Power Mirrors 2-18
Folding Mirrors 2-19
Heated Mirrors 2-19

Interior Mirrors
Automatic Dimming Rearview Mirror 2-19

Windows
Windows 2-20
Power Windows 2-20
Sun Visors 2-22
Rear Window Sunshade 2-23

Roof
Sunroof 2-24

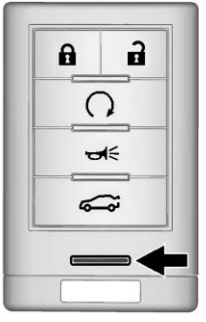
Keys and Locks

Keys

⚠ WARNING

Leaving children in a vehicle with a Remote Keyless Entry (RKE) transmitter is dangerous and children or others could be seriously injured or killed. They could operate the power windows or other controls or make the vehicle move. The windows will function with the RKE transmitter in the vehicle, and children or others could be caught in the path of a closing window. Do not leave children in a vehicle with an RKE transmitter.

There is a key inside the Remote Keyless Entry (RKE) transmitter that is used for locking/unlocking the driver door and for locking the rear seatbacks so they cannot be folded. See *Rear Seats on page 3-11*.



To remove the key, press the button near the bottom of the transmitter, and pull the key out. Never pull the key out without pressing the button.

If it becomes difficult to turn the key, inspect the key blade for debris.

See your dealer if a new key is needed.

Contact Roadside Service if locked out of the vehicle. See *Roadside Service on page 13-5*.

With an active OnStar subscription, an OnStar Advisor may remotely unlock the vehicle. See *OnStar Overview on page 14-1*.

Remote Keyless Entry (RKE) System

See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

If there is a decrease in the RKE operating range:

- Check the distance. The transmitter may be too far from the vehicle.
- Check the location. Other vehicles or objects may be blocking the signal.

- Check the transmitter's battery. See “Battery Replacement” later in this section.
- If the transmitter is still not working correctly, see your dealer or a qualified technician for service.

Remote Keyless Entry (RKE) System Operation

The RKE transmitter functions may work up to 60 m (195 ft) away from the vehicle.

Other conditions, such as those previously stated, can impact the performance of the transmitter.

With Remote Start Shown, Without Similar

(Lock): Press to lock all doors. The turn signal indicators may flash and/or the horn may sound to indicate locking. See “Remote Lock, Unlock, Start” under *Vehicle Personalization on page 5-45*.

If the driver door is open when is pressed, all doors lock and the driver door will immediately unlock, if “Unlocked Door Anti Lock Out” is enabled. See “Unlocked Door Anti Lock Out” under *Vehicle Personalization on page 5-45*. If the passenger door is open when is pressed, all doors lock.

Pressing may also arm the theft-deterrent system. See *Vehicle Alarm System on page 2-16*.

(Unlock): Press to unlock the driver door or all doors depending on the personalization settings. See “Remote Lock, Unlock, Start” under *Vehicle Personalization on page 5-45*. When remotely unlocking the vehicle at night, the headlamps and back-up lamps will come on for about 30 seconds to light your approach to the vehicle. The turn signal indicators may flash to indicate unlocking. See “Remote Lock, Unlock, Start” under *Vehicle Personalization on page 5-45*.

Memory seat positions may be recalled when unlocking the vehicle. See “Remote Lock, Unlock, Start” under *Vehicle Personalization on page 5-45*.

Pressing 🔓 will disarm the theft-deterrent system. See *Vehicle Alarm System on page 2-16*.

On some models, pressing and holding 🔓 will open all of the windows.

(Remote Start): For vehicles with this feature, press and release 🔒 and then Immediately press and hold for at least two seconds to start the engine from outside the vehicle using the RKE transmitter. See *Remote Vehicle Start on page 2-8*.

(Vehicle Locator/Panic Alarm): Press and release one time to initiate vehicle locator. The exterior lamps flash and the horn chirps three times. Press and hold for three seconds to sound the panic alarm. The horn sounds and the turn signal lamps flash for 30 seconds, or until is pressed again or the vehicle is started.

(Remote Trunk Release): Press and hold to release the trunk.

Keyless Access Operation

The keyless access system allows for door and trunk to be locked and unlocked without pressing the RKE transmitter button. The RKE transmitter must be within 1 m (3 ft) of the door being opened. If the vehicle has this feature, there will be a button on the outside front door handles.

Keyless access can be programmed to unlock all doors on the first lock/unlock press from the driver door. See *Vehicle Personalization on page 5-45*.

Keyless Unlocking/Locking from the Driver Door

When the doors are locked and the RKE transmitter is within range of the door handle, pressing the lock/unlock button on the driver door handle will unlock the driver door. If the lock/unlock button is pressed again within five seconds, all passenger doors will unlock.

Driver Side Shown, Passenger Similar

Pressing the lock/unlock button will cause all doors to lock if any of the following occur:

- It has been more than five seconds since the first lock/unlock button press.
- Two lock/unlock button presses were used to unlock all doors.
- Any vehicle door has been opened and all doors are now closed.

Keyless Unlocking/Locking from the Passenger Doors

When the doors are locked and the RKE transmitter is within range of the door handle, pressing the lock/unlock button on a passenger door handle will unlock all doors. Pressing the lock/unlock button will cause all doors to lock if any of the following occur:

- The lock/unlock button was used to unlock all doors.
- Any vehicle door has been opened and all doors are now closed.

Passive Locking

If the vehicle has the keyless access system, this feature allows for selecting whether the doors automatically lock during normal vehicle exit. When the vehicle is turned off and all doors are closed, the vehicle will determine how many RKE transmitters remain in the vehicle interior. If at least one RKE transmitter has been removed from the interior of the vehicle, the doors will lock after eight seconds.

Temporarily disable the locking feature by pressing and holding the power door 🔒 switch for several seconds with a door open. Passive locking will then remain disabled until the power door 🔓 switch is pressed, or until the vehicle is turned on.

To customize whether the doors automatically lock when exiting the vehicle, see “Remote Lock, Unlock, Start” under *Vehicle Personalization on page 5-45*.

Keyless Trunk Opening

Press the touch pad on the rear of the trunk above the license plate to open the trunk when the RKE transmitter is in range.

Keyed Access

For accessing a vehicle with a dead transmitter battery, see *Door Locks on page 2-10*.

Programming Transmitters to the Vehicle

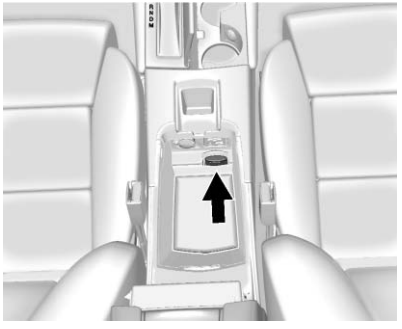
Only RKE transmitters programmed to the vehicle will work. If a transmitter is lost or stolen, a replacement can be purchased and programmed through your dealer. The vehicle can be reprogrammed so that lost or stolen transmitters no longer work. Each vehicle can have up to eight transmitters matched to it.

Programming with a Recognized Transmitter (Keyless Access Vehicles Only)

A new transmitter can be programmed to the vehicle when there is one recognized transmitter.

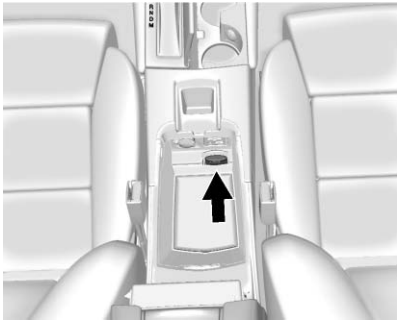
To program, the vehicle must be off and all of the transmitters, both currently recognized and new, must be with you.

1. Open the center console storage area and the storage tray.



2. Place the recognized transmitter(s) in the pocket. The transmitter pocket is inside the center console storage area between the driver and front passenger seats.
3. Remove the key lock cylinder cap. See *Door Locks on page 2-10*. Insert the vehicle key into the key lock cylinder on the driver door handle. Then turn the key counterclockwise, to the unlock position, five times within 10 seconds.

   The Driver Information Center (DIC) displays READY TO LEARN ELECTRONIC KEY #2, 3, 4, ETC.



4. Replace the recognized transmitter with a new transmitter. Place the new transmitter in the transmitter pocket.
5. Press the START button. When the transmitter is learned, the DIC display will show that it is ready to program the next transmitter.
6. Remove the transmitter from the transmitter pocket and press 🔓 or 🔒 on the transmitter.

   To program additional transmitters, repeat Steps 3–5.

   When all additional transmitters are programmed, press and hold the START button for approximately 12 seconds to exit programming mode.

Programming without a Recognized Transmitter (Keyless Access Vehicles Only)

If there are no currently recognized transmitters available, follow this procedure to program up to eight transmitters. This feature is not available in Canada. This procedure will take approximately 30 minutes to complete. The vehicle must be off and all transmitters to be programmed must be with you.

1. Remove the key lock cylinder cap. See *Door Locks on page 2-10*. Insert the vehicle key into the key lock cylinder on the

driver door handle; then turn the key counterclockwise, to the unlock position five times within 10 seconds.

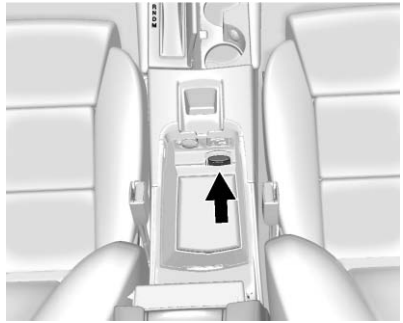
The Driver Information Center (DIC) displays REMOTE LEARN PENDING, PLEASE WAIT.

2. Wait for 10 minutes until the DIC displays PRESS ENGINE START BUTTON TO LEARN, then press the START button.

   The DIC display will again show REMOTE LEARN PENDING, PLEASE WAIT.

3. Repeat Step 2 two additional times. After the third time all previously known transmitters will no longer work with the vehicle. Remaining transmitters can be relearned during the next steps.

   The DIC display should now show READY FOR REMOTE # 1.



4. Place the new transmitter in the transmitter pocket. The transmitter pocket is inside the center console storage area between the driver and front passenger seats. The storage area will need to be opened to access the transmitter pocket.

5. Press the START button. When the transmitter is learned, the DIC display will show that it is ready to program the next transmitter.

6. Remove the transmitter from the transmitter pocket and press 🔓 or 🔒 on the transmitter.

   To program additional transmitters, repeat Steps 4–6.

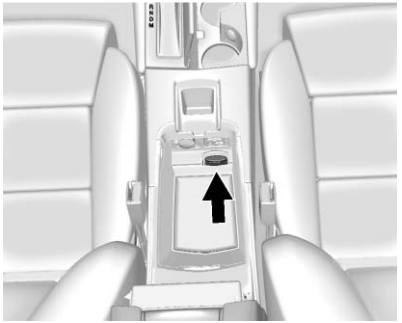
   When all additional transmitters are programmed, press and hold the START button for approximately 12 seconds to exit programming mode.

Starting the Vehicle with a Low Transmitter Battery

If the transmitter battery is weak, or if there is interference with the signal, the DIC may display a message when you try to start the vehicle. See *Key and Lock Messages on page 5-38*.

To start the vehicle:

1. Open the center console storage area and the storage tray.



2. Place the transmitter in the transmitter pocket.
3. With the vehicle in P (Park) or N (Neutral), press the brake pedal and the START button.

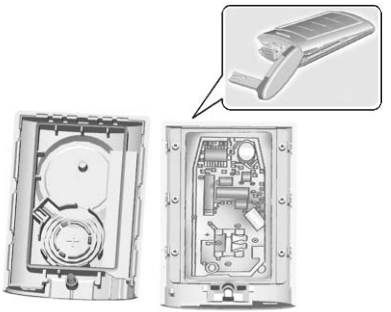
   Replace the transmitter battery as soon as possible.

Battery Replacement

Notice: **When replacing the battery, do not touch any of the circuitry on the transmitter. Static from your body could damage the transmitter.**

Replace the battery if the REPLACE BATTERY IN REMOTE KEY message displays in the DIC.

1. Press the button near the bottom of the transmitter and pull the key out.



2. Use the oval base of the key blade to separate the two halves of the transmitter.
3. Remove the old battery. Do not use a metal object.
4. Insert the new battery on the back housing, positive side facing down. Replace with a CR2032 or equivalent battery.
5. Align the key release button and snap the transmitter back together.

Remote Vehicle Start

If available, this feature allows the engine to be started from outside the vehicle.

(Remote Vehicle Start): This button will be on the RKE transmitter if the vehicle has remote start.

The climate control system will use the previous settings during a remote start. The rear window defogger may come on during remote start based on cold ambient conditions. The rear defog indicator light does not come on during remote start.

Laws in some local communities may restrict the use of remote starters. For example, some laws may require a person using remote start to have the vehicle in view. Check local regulations for any requirements.

If your vehicle is low on fuel, do not use the remote start feature. The vehicle may run out of fuel.

The RKE transmitter range may be less while the vehicle is running.

Other conditions can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System on page 2-2*.

Starting the Engine Using Remote Start

1. Press and release on the RKE transmitter.
2. Immediately press and hold for at least two seconds or until the turn signal lamps flash. This confirms the request to remote start the vehicle has been received. If the vehicle's lamps are not visible, press and hold for at least two seconds.

   During the remote start, the doors will be locked and the parking lamps will remain on as long as the engine is running.

   The engine will shut off after 10 minutes unless a time extension is done or the ignition is put in ON/RUN/START.
3. Press the brake pedal and select the ON/RUN/START ignition mode to drive the vehicle.

Extending Engine Run Time

For a 10-minute extension, repeat Steps 1 and 2 while the engine is still running. The remote start can only be extended once.

When the remote start is extended, the second 10-minute period will start immediately.

For example, if the vehicle has been running for five minutes, and 10 minutes are added, the engine will run for a total of 15 minutes.

A maximum of two remote starts, or a remote start with an extension, are allowed between ignition cycles.

The vehicle's ignition must be changed to ON/RUN/START and then back to OFF before the remote start procedure can be used again.

Canceling a Remote Start

To cancel a remote start, do any of the following:

- Press and hold until the parking lamps turn off.
- Turn on the hazard warning flashers.
- Turn the vehicle on and then back off.

Conditions in Which Remote Start Will Not Work

The remote start will not operate if any of the following occur:

- The ignition is in any mode other than OFF.
- The transmitter is in the vehicle.
- The hood is not closed.
- The hazard warning flashers are on.
- There is an emission control system malfunction.
- The engine coolant temperature is too high.
- The oil pressure is low.
- Two remote vehicle starts have already been used.
- The vehicle is not in P (Park).

Door Locks

⚠ WARNING

Unlocked doors can be dangerous.

- Passengers, especially children, can easily open the doors and fall out of a moving vehicle. When a door is locked, the handle will not open it. The chance of being thrown out of the vehicle in a crash is increased if the doors are not locked. So, all passengers should wear safety belts properly and the doors should be locked whenever the vehicle is driven.
- Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent

(Continued)

WARNING (Continued)

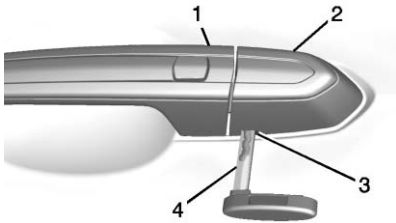
injuries or even death from heat stroke. Always lock the vehicle whenever leaving it.

- Outsiders can easily enter through an unlocked door when you slow down or stop the vehicle. Locking the doors can help prevent this from happening.

- From the inside, to lock a door push down on the door lock knob on top of the door. To unlock a door, pull once on the door handle to unlock it, and again to open it.
- From the outside, if the vehicle is equipped with keyless access, press the button on the door handle and pull the handle when the Remote Keyless Entry (RKE) transmitter is within range. See *Remote Keyless Entry (RKE) System Operation on page 2-3*.

- Use the key in the driver door. The key cylinder is covered by a cap.

Key Cylinder Access



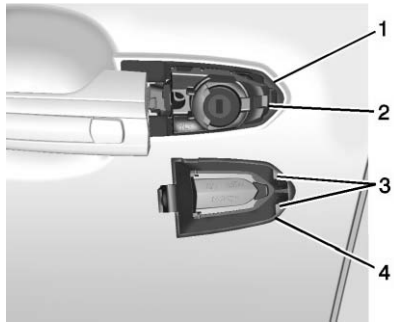
1. Door Handle
2. Cap
3. Slot
4. Key

To access the key cylinder:

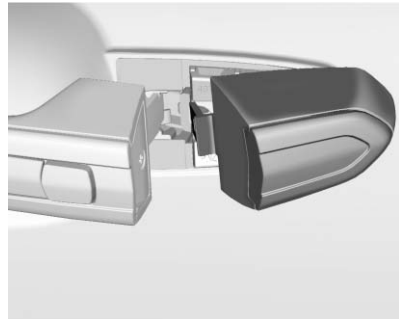
1. Pull the door handle (1) to the open position.
2. Insert the key (4) into the slot (3) on the bottom of the cap (2) and pry outward.
3. Move the cap (2) rearward.
4. Use the key (4) in the cylinder.

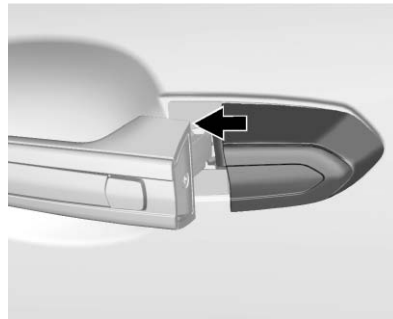
To replace the cap:

1. Pull the door handle to the open position.



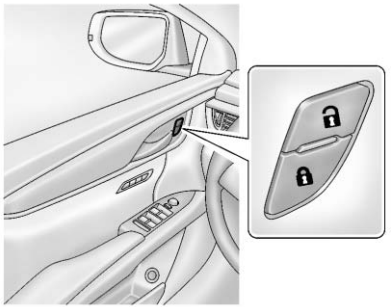
2. Insert the two tabs (3) at the back of the cap (4) between the black seal (1) and the metal base (2).





3. Move the cap forward and press to snap the cap into place.
4. Release the door handle.

Power Door Locks



(Lock): Press to lock the doors.

(Unlock): Press to unlock the doors.

Delayed Locking

This feature delays the actual locking of the doors.

When is pressed on the power door lock switch, while the door is open, a chime will sound three times indicating that delayed locking is active.

When all the doors are closed, the doors will lock automatically after five seconds. If a door is reopened before five seconds have elapsed, the five-second timer will reset once all the doors are closed again.

Press on the door lock switch again or press on the RKE transmitter to override this feature and lock the doors immediately.

This feature can also be programmed. See *Vehicle Personalization on page 5-45*.

Automatic Door Locks

The doors will lock automatically when all doors are closed, the ignition is on, and the shift lever is moved out of P (Park). The doors will automatically unlock when the vehicle is stopped and the shift lever is moved into P (Park).

Use the manual or power door locks to unlock the doors if someone needs to exit, and to lock the doors again.

The power door locks can be programmed through the Driver Information Center (DIC). See *Vehicle Personalization on page 5-45*.

Lockout Protection

If the vehicle is in ACC/ ACCESSORY or ON/RUN/START with the Remote Keyless Entry (RKE) transmitter in the vehicle and the power door lock switch is pressed with the driver door open, all the doors will lock and only the driver door will unlock.

If the vehicle is off with the RKE transmitter in the vehicle and the power door lock switch is pressed with the driver door open, all the doors will lock and only the driver door will unlock after closing all of the doors.

This feature can be manually overridden with the driver door open by pressing and holding on the power door lock switch.

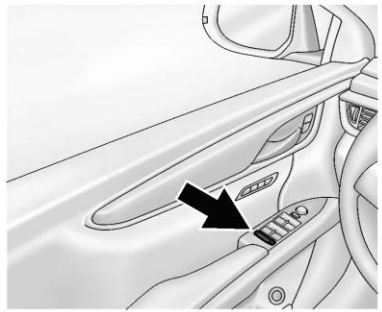
Unlocked Door Anti Lock Out

When this feature is on and door locking is requested with the driver door open, all doors will lock and only the driver door will unlock. The driver door must be closed before locking is requested for all doors to remain locked. When this feature is off, the Delayed Door Lock menu will be available.

This feature can also be programmed. See *Vehicle Personalization on page 5-45*.

Safety Locks

The rear door safety locks prevent passengers from opening the rear doors from inside the vehicle.



Press to activate the safety locks on the rear doors. The indicator light in the switch will illuminate when activated.

The rear door power windows are also disabled. See *Power Windows on page 2-20*.

Press again to deactivate the safety locks.

If a rear door handle is pulled when the safety lock is deactivated, that door will remain locked and the indicator light may flash. Release the handle, then press the safety lock twice to deactivate the safety locks.

Doors

Trunk

⚠ WARNING

Exhaust gases can enter the vehicle if it is driven with the liftgate or trunk/hatch open, or with any objects that pass through the seal between the body and the trunk/hatch or liftgate. Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle must be driven with the liftgate or trunk/hatch open:

- Close all of the windows.
- Fully open the air outlets on or under the instrument panel.

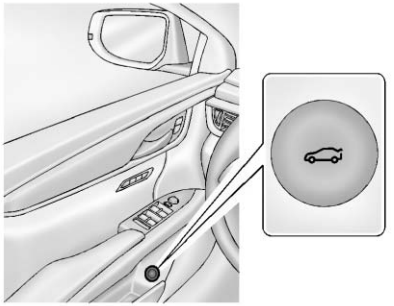
(Continued)

WARNING (Continued)

- Adjust the climate control system to a setting that brings in only outside air and set the fan speed to the highest setting. See “Climate Control Systems” in the Index.
- If the vehicle is equipped with a power liftgate, disable the power liftgate function.

See *Engine Exhaust on page 9-21*.

Trunk Lock Release



To open the trunk, press from inside the vehicle or on the Remote Keyless Entry (RKE) transmitter, or push the touch pad on the rear of the trunk above the license plate.

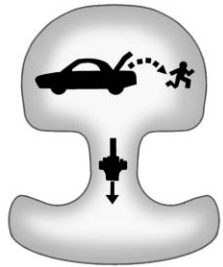
With the keyless access system, if the vehicle is locked, the RKE must be within 1 m (3 ft) of the trunk for it to be recognized; then the trunk can be opened by the touch pad on the rear of the trunk above the license plate.

Use the handle to assist in closing the trunk. Do not use the handle as a tie-down.

If the vehicle is ever without power, the trunk area can still be accessed by folding the rear seat:

1. Fold down the rear seatback. See *Rear Seats on page 3-11*.
2. Reach inward through the opening to locate the emergency trunk release handle.
3. Pull the release handle toward the front of the vehicle to open the trunk.

Emergency Trunk Release Handle



Notice: **Do not use the emergency trunk release handle as a tie-down or anchor point when securing items in the trunk as it could damage the handle. The emergency trunk release handle is only intended to aid a person trapped in a latched trunk, enabling them to open the trunk from the inside.**

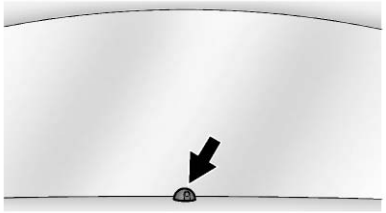
There is a glow-in-the-dark emergency trunk release handle on the trunk lid. This handle will glow following exposure to light. Pull the release handle to open the trunk from the inside.

Vehicle Security

This vehicle has theft-deterrent features; however, they do not make the vehicle impossible to steal.

Vehicle Alarm System

This vehicle has an anti-theft alarm system.



The indicator light, on the instrument panel near the windshield, indicates the status of the system.

Arming the System

1. Close all doors, the trunk, and the hood.
2. Lock the vehicle using the transmitter or the power door lock switch. The indicator light on the instrument panel should come on and stay on for about 30 seconds.
3. After 30 seconds, or after 🔒 is pressed again, the alarm system will arm, and the indicator light will begin to slowly flash indicating the alarm is operating.

If a door, the hood, or trunk is opened without first unlocking with the transmitter, the turn signals will flash and the horn will sound for about 30 seconds. The alarm system will then re-arm to monitor for the next unauthorized event.

The theft-deterrent alarm system will not activate if the doors are locked with the key.

Disarming the System

To disarm the system, either unlock the doors using the transmitter, or start the vehicle with a recognized transmitter in the vehicle.

To avoid setting off the alarm by accident:

- Lock the vehicle with the transmitter after all occupants have left the vehicle and all doors are closed.
- Always unlock a door with the transmitter. Unlocking the driver door with the key will not disarm the alarm.

If you set off the alarm by accident, turn off the alarm by pressing 🔓 on the transmitter, or start the vehicle with a recognized transmitter in the vehicle. The alarm will not stop if you unlock the driver door with the key.

How to Detect a Tamper Condition

If 🔓 is pressed and the horn chirps three times, the alarm was activated while the system was armed.

If the alarm has been activated, a message will appear on the DIC. See *Security Messages on page 5-43*.

Immobilizer

See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

Immobilizer Operation

This vehicle has a passive theft-deterrent system.

The system does not have to be manually armed or disarmed.

The vehicle is automatically immobilized when the vehicle is turned off.

The immobilization system is disarmed when the pushbutton start is activated to enter the ACC/ACCESSORY mode or the ON/RUN/START mode and a valid transmitter is present in the vehicle.

The security light in the instrument cluster comes on if there is a problem with arming or disarming the theft-deterrent system.

The system has one or more RKE transmitters matched to an immobilizer control unit in your vehicle. Only a correctly matched RKE transmitter will start the vehicle. If the transmitter is ever damaged, you may not be able to start your vehicle.

When trying to start the vehicle, the security light comes on briefly when the ignition is turned on.

If the engine does not start and the security light stays on, there is a problem with the system. Turn the ignition off and try again.

If the vehicle will not change ignition modes (ACC/ACCESSORY, ON/RUN/START, OFF), and the RKE transmitter appears to be undamaged, try another transmitter. Or, you may try placing the transmitter in the transmitter pocket in the center console. See *Key and Lock Messages on page 5-38*.

If the ignition modes will not change with the other transmitter, your vehicle needs service. If the ignition does change modes, the first transmitter may be faulty. See your dealer who can service the

theft-deterrent system and have a new RKE transmitter programmed to the vehicle.

It is possible for the immobilizer system to learn new or replacement RKE transmitters. Up to eight transmitters can be programmed for the vehicle. To program additional transmitters, see “Programming Transmitters to the Vehicle” under *Remote Keyless Entry (RKE) System Operation on page 2-3*.

Do not leave the key or device that disarms or deactivates the theft-deterrent system in the vehicle.

Exterior Mirrors

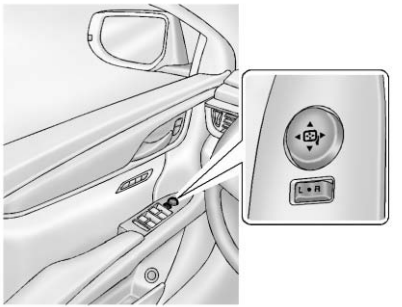
Convex Mirrors

⚠ CAUTION

A convex mirror can make things, like other vehicles, look farther away than they really are. If you cut too sharply into the right lane, you could hit a vehicle on the right. Check the inside mirror or glance over your shoulder before changing lanes.

The passenger side mirror is convex shaped. A convex mirror's surface is curved so more can be seen from the driver seat.

Power Mirrors



1. Move the selector switch to L (Left) or R (Right) to choose the driver or passenger mirror.
2. Press one of the four arrows to move the mirror.
3. Move the selector switch to ● to deselect the mirror.

Exterior Automatic Dimming Mirror

The vehicle may have a driver exterior automatic dimming mirror that will automatically adjust for the glare of headlamps behind.

Memory Mirrors

The vehicle may have memory mirrors. See *Memory Seats on page 3-7*.

Side Blind Zone Alert (SBZA)

The vehicle may have SBZA. See *Side Blind Zone Alert (SBZA) on page 9-52*.

Turn Signal Indicator

The vehicle has a turn signal indicator on the mirror housings. The indicator will flash when a turn signal or the hazard warning flashers are used.

Puddle Light

The vehicle has a puddle light on the mirror housings. The light will illuminate the ground when the door is opened.

Folding Mirrors

Manual Folding Mirrors

The mirrors can be folded inward toward the vehicle to prevent damage when going through an automatic car wash. Push the mirror outward to return it to the original position.

Heated Mirrors

(Rear Window Defogger): Press to heat the mirrors.

See *Dual Automatic Climate Control System (Uplevel) on page 8-1* or *Dual Automatic Climate Control System (Base) on page 8-6*.

Interior Mirrors

Automatic Dimming Rearview Mirror

To adjust the inside rearview mirror, hold the rearview mirror in the center and move it to view the area behind the vehicle.

The vehicle has an automatic dimming rearview mirror. The mirror will automatically reduce the glare from the headlamps from behind. The dimming feature comes on when the vehicle is started.

Cleaning the Mirror

Do not spray glass cleaner directly on the mirror. Use a soft towel dampened with water.

Windows

⚠ WARNING

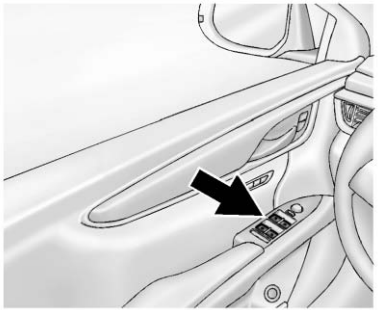
Never leave a child, a helpless adult, or a pet alone in a vehicle, especially with the windows closed in warm or hot weather. They can be overcome by the extreme heat and suffer permanent injuries or even death from heat stroke.

The vehicle aerodynamics are designed to improve fuel economy performance. This may result in a pulsing sound when either rear window is down and the front windows are up. To reduce the sound, open either a front window or the sunroof, if equipped.

Power Windows

⚠ WARNING

Children could be seriously injured or killed if caught in the path of a closing window. Never leave the Remote Keyless Entry (RKE) transmitter in a vehicle with children. When there are children in the rear seat, use the window lockout switch to prevent operation of the windows. See *Keys on page 2-1*.



The power windows only operate with the ignition in ACC/ACCESSORY or ON/RUN/START, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP) on page 9-19*.

The power window switches on the driver door control all the windows. Each passenger door has a switch that controls only that window.

Press the switch to lower the window. Pull the switch up to raise it.

Express-Down/Up Windows

Windows with the express feature allow the windows to be raised and lowered all the way without holding the switch.

Press or pull the switch fully and release it to activate the express feature.

The express mode can be canceled by briefly pressing or pulling the switch.

Express Window Anti-Pinch Feature

If any object is in the path of the window when the express-up is active, the window will stop at the obstruction and auto-reverse to a preset factory position. Weather conditions such as severe icing may also cause the window to auto-reverse. The window will return to normal operation after the obstruction or condition is removed.

Express Window Anti-Pinch Override

⚠ WARNING

If express override is activated, the window will not reverse automatically. You or others could be injured and the window could be damaged. Before you use express override, make sure that all people and obstructions are clear of the window path.

The anti-pinch feature can be overridden. Hold the window switch all the way up to the second position. The window will rise for as long as the switch is held. Once the switch is released, the express mode is reactivated.

In this mode, the window can close on an object in its path. Use care when using the override mode.

Programming the Power Windows

If the vehicle battery has been recharged or disconnected, or is not working, the front power windows will need to be reprogrammed for the express-up feature to work. Before reprogramming, replace or recharge the vehicle's battery.

To program:

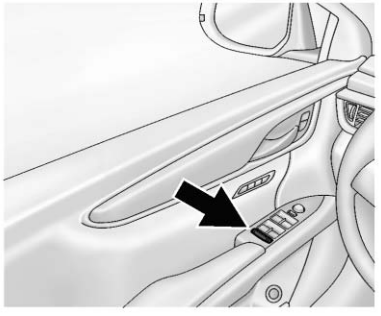
1. With the ignition in ON/RUN or ACC/ACCESSORY, or when RAP is active, close all doors.
2. Press and hold the power window switch until the window is fully open.
3. Pull the power window switch up until the window is fully closed.
4. Continue holding the switch up for approximately two seconds after the window is completely closed.

The window is now reprogrammed. Repeat the process for the other windows.

Window Operation from Outside the Vehicle

The vehicle may be equipped with a remote venting window feature. As you approach the vehicle, press 🔓 on the Remote Keyless Entry (RKE) transmitter once, then press 🔓 again and continue to hold the button for three seconds. The windows will then lower fully. Pressing 🔓 again will cause window movement to stop. This feature may be turned off by your dealer.

Window Lockout



This feature prevents the rear passenger windows from operating, except from the driver position.

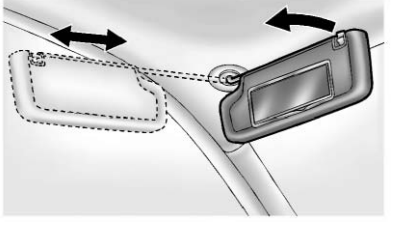
Press 🔒 to activate the window lockout. The indicator light in the switch will illuminate when activated.

The rear door locks are also disabled. See *Safety Locks on page 2-13*.

Press 🔒 again to deactivate the lockout switch.

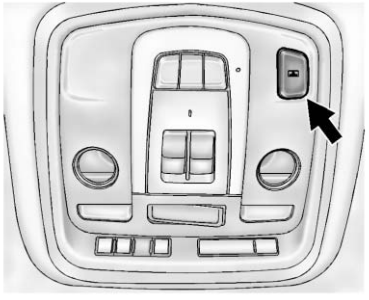
If the indicator light flashes, the feature may not be working properly.

Sun Visors



Pull the sun visor down to block glare. Detach the sun visor from the center mount to pivot to the side window, or to extend along the rod.

Rear Window Sunshade



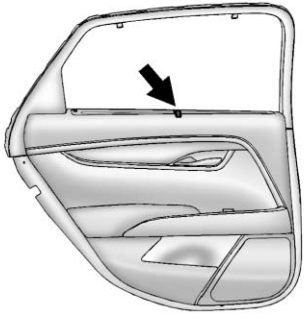
On vehicles with a rear window sunshade, the sunshade switch is on the overhead console. The sunshade only operates with the ignition in ON/RUN/START.

To open the sunshade, press and release the switch. The sunshade will fully extend. To close the sunshade, press and release the switch again. The sunshade will fully close.

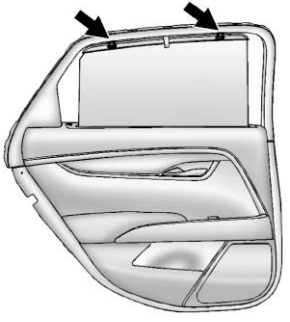
If the vehicle is shifted into R (Reverse) when the sunshade is extended, it will automatically close.

When the vehicle is shifted in D (Drive), the sunshade will not automatically extend. Press and release the switch to extend the sunshade.

Rear Passenger Door Sunshades



If equipped, use the handle to pull the sunshade up.



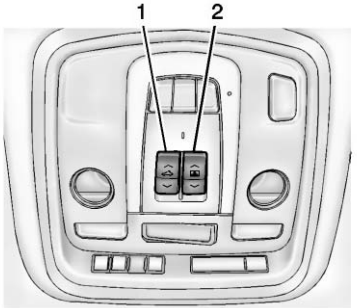
Attach it to the hooks at the top of the window.

To close the sunshade, use the handle to release it from the hooks and roll it down.

Roof

Sunroof

For vehicles equipped with a sunroof, the ignition must be in ON/RUN or ACC/ACCESSORY, or in Retained Accessory Power (RAP) to operate the sunroof and power sunshade. See *Ignition Positions on page 9-15* and *Retained Accessory Power (RAP) on page 9-19*.



1. Sunroof Switch
2. Sunshade Switch

Sunroof Switch

Vent Feature: Press and hold the front of to vent the sunroof. The sunshade will automatically open approximately 38 cm (15 in). Press and hold the rear of to close the vent.

Comfort Stop Feature: The sunroof has a comfort stop feature that stops the sunroof from opening fully. Press and release the rear of to open the sunroof to the comfort open position. Pressing the rear of again will open the sunroof fully. If the sunshade is not fully open when the comfort stop feature is pressed the second time, the sunshade will open fully.

Express Close: Press and release the front of to express close the sunroof.

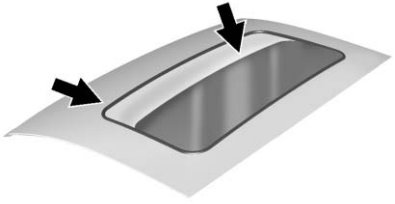
Sunshade Switch

Open/Close: Press and hold the front or rear of to open or close the sunshade to the desired position.

Express Open/Express Close: Press and release the rear or front of to express open or express close the sunshade. If the sunroof is opened, the sunshade will express close within a few inches of the opened sunroof.

Anti-Pinch Feature

If an object is in the path of the sunroof/sunshade when it is closing, the anti-pinch feature will detect the object and stop the sunroof/sunshade from closing at the point of the obstruction. The sunroof/sunshade will then return to the full-open position. To close the sunroof/sunshade, see “Express Open/Express Close” earlier in this section.



Dirt and debris may collect on the sunroof seal or in the track. This could cause an issue with sunroof operation or noise. It could also plug the water drainage system. Periodically open the sunroof and remove any obstacles or loose debris. Wipe the sunroof seal and roof sealing area using a clean cloth, mild soap, and water. Do not remove grease from the sunroof.

✍ NOTES

Seats and Restraints

Head Restraints
Head Restraints 3-2

Front Seats
Power Seat Adjustment 3-4
Lumbar Adjustment 3-5
Thigh Support Adjustment 3-5
Reclining Seatbacks 3-6
Memory Seats 3-7
Heated and Ventilated Front Seats 3-9

Rear Seats
Rear Seats 3-11
Heated Rear Seats 3-12
Rear Seat Pass-Through Door 3-13

Safety Belts
Safety Belts 3-14
How to Wear Safety Belts Properly 3-15
Lap-Shoulder Belt 3-16
Safety Belt Use During Pregnancy 3-20
Safety Belt Extender 3-20
Safety System Check 3-21
Safety Belt Care 3-21
Replacing Safety Belt System Parts after a Crash 3-21

Airbag System
Airbag System 3-22
Where Are the Airbags? 3-24
When Should an Airbag Inflate? 3-26
What Makes an Airbag Inflate? 3-27
How Does an Airbag Restrain? 3-28
What Will You See after an Airbag Inflates? 3-28
Passenger Sensing System 3-29
Servicing the Airbag-Equipped Vehicle 3-34
Adding Equipment to the Airbag-Equipped Vehicle . . . 3-34
Airbag System Check 3-35
Replacing Airbag System Parts after a Crash 3-35

Child Restraints
Older Children 3-36
Infants and Young Children 3-38
Child Restraint Systems 3-40
Where to Put the Restraint . . . 3-42
Lower Anchors and Tethers for Children (LATCH System) 3-43
Replacing LATCH System Parts After a Crash 3-49
Securing Child Restraints (Rear Seat) 3-49
Securing Child Restraints (Front Passenger Seat) 3-52

Head Restraints

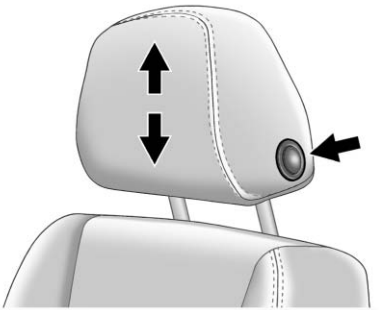
⚠ WARNING

With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.

Adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.

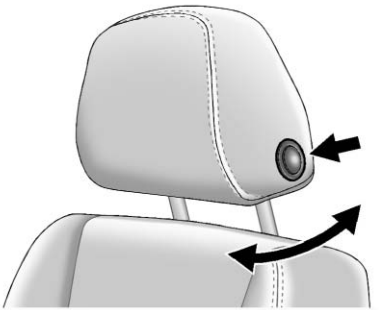
Front Seats

The vehicle's front seats have adjustable head restraints in the outboard seating positions.



The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure that it is locked in place.

To lower the head restraint, press the button located on the side of the head restraint, push the head restraint down, and release the button. Pull and push on the head restraint after the button is released to make sure that it is locked in place.



The head restraint can be adjusted forward or rearward. To adjust the head restraint forward, grasp the head restraint and pull it forward to the desired locking position. To adjust the head restraint rearward, press the button located on the side

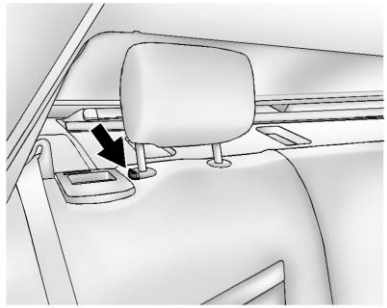
of the head restraint and move the head restraint rearward until the desired locking position is reached. Try to move the head restraint after the button is released to make sure that it is locked in place.

The front seat outboard head restraints are not designed to be removed.

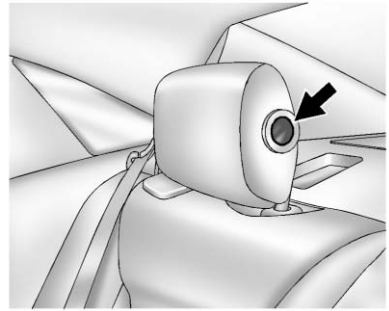
Rear Seats

The vehicle's rear seats have adjustable head restraints in the outboard seating positions.

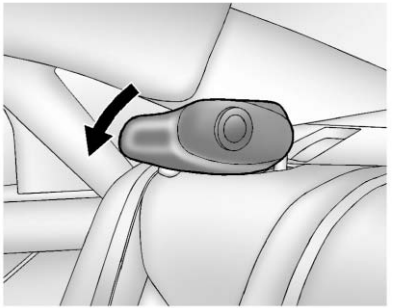
The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure that it is locked in place.



To lower the head restraint, press the button, located on the top of the seatback, and push the head restraint down. Try to move the head restraint after the button is released to make sure that it is locked in place.



The head restraint can be folded forward to allow for better visibility when the rear seat is unoccupied. To fold the head restraint, press the button on the side of the head restraint.



The head restraint will fold forward automatically.

When an occupant or child restraint is in the seat, always return the head restraint to the upright position. Pull the head restraint up and push it rearward until it locks into place. Push and pull on the head restraint to make sure that it is locked.

Always adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head.

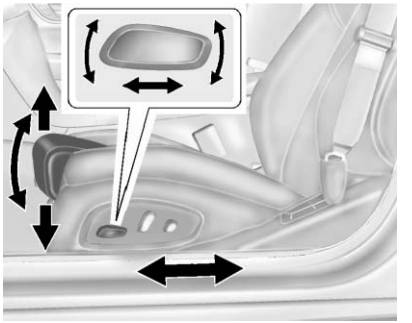
Rear outboard head restraints are not designed to be removed.

Front Seats

Power Seat Adjustment

⚠ WARNING

You can lose control of the vehicle if you try to adjust a driver seat while the vehicle is moving. Adjust the driver seat only when the vehicle is not moving.



To adjust the seat:

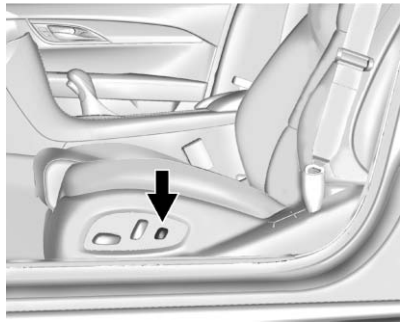
- Move the seat forward or rearward by sliding the control forward or rearward.
- Raise or lower the front part of the seat cushion by moving the front of the control up or down.
- Raise or lower the seat by moving the rear of the control up or down.

To adjust the seatback, see *Reclining Seatbacks on page 3-6*.

To adjust the lumbar support, see *Lumbar Adjustment on page 3-5*.

Some vehicles are equipped with a feature that activates a vibration in the driver seat to help the driver avoid crashes. See *Driver Assistance Systems on page 9-43*.

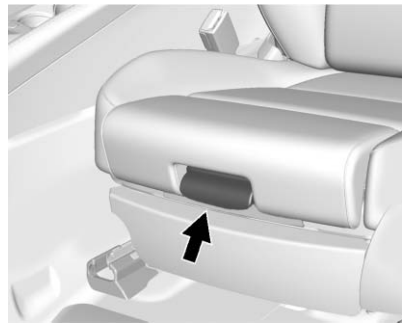
Lumbar Adjustment



To adjust the lumbar support:

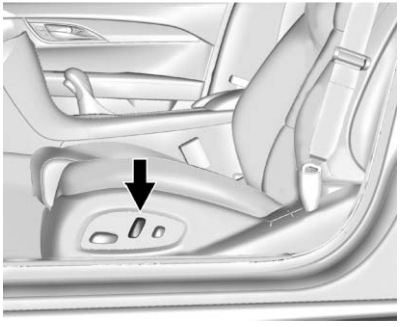
- Press and hold the control forward to increase or rearward to decrease lumbar support.
- Press and hold the control upward to raise or downward to lower the height of the lumbar support.

Thigh Support Adjustment



If available, adjust the manual leg extension by pulling up on the lever, and then pulling or pushing on the support to lengthen or shorten it. Release the lever to lock it in place.

Reclining Seatbacks



To adjust the seatback:

- Tilt the top of the control rearward to recline.
- Tilt the top of the control forward to raise.

⚠ WARNING

Sitting in a reclined position when the vehicle is in motion can be dangerous. Even when buckled up, the safety belts cannot do their job.

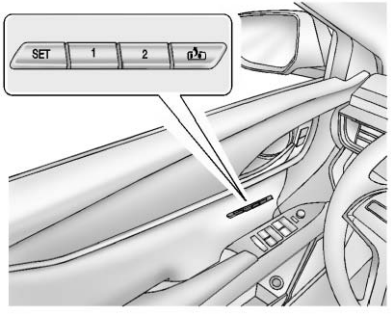
The shoulder belt will not be against your body. Instead, it will be in front of you. In a crash, you could go into it, receiving neck or other injuries.

The lap belt could go up over your abdomen. The belt forces would be there, not at your pelvic bones. This could cause serious internal injuries.

For proper protection when the vehicle is in motion, have the seatback upright. Then sit well back in the seat and wear the safety belt properly.

Do not have a seatback reclined if the vehicle is moving.

Memory Seats



If available, the SET, "1," "2," and (Exit) buttons on the driver door are used to manually save and recall memory settings for the driver seat, outside mirrors, and power tilt and telescoping steering column. These manually stored positions are referred to as Button Memory positions.

The vehicle will also automatically save driver seat, outside mirror, and power tilt and telescoping steering column positions to the current driver Remote Keyless Entry (RKE) transmitter when the ignition is placed in OFF/LOCK. These automatically stored positions are referred to as RKE Memory positions. See *Remote Keyless Entry (RKE) System Operation on page 2-3*.

Storing Button Memory Positions

To save positions into Button Memory for the “1” and “2” driving positions:

1. Adjust the driver seat, outside mirrors, and the power tilt and telescoping steering column to the desired driving positions.
2. Press and hold SET and “1” at the same time until a beep sounds.
3. Repeat Steps 1 and 2 for a second driver using “2.”

To save positions into Button Memory for the (Exit) button and easy exit features:

1. Adjust the driver seat, power tilt and telescoping steering column, and the outside mirrors on some vehicles to the desired positions for getting out of the vehicle.
2. Press and hold SET and at the same time until a beep sounds.

Recalling Button Memory Positions

Press and hold "1," "2," or to recall the Button Memory positions. Releasing "1,” "2," or before the stored positions are reached stops the recall.

If the ignition is in ON/RUN/START and the vehicle is parked, briefly press and release “1,” “2,” or to recall the Button Memory positions. Placing the ignition in OFF/LOCK before the stored positions are reached stops the recall.

If something has blocked the driver seat and/or power tilt and telescoping steering column while recalling a memory position, the recall may stop. Remove the obstruction; then press and hold the appropriate manual control for the memory item that is not recalling for two seconds. Try recalling the memory position again by pressing the appropriate memory button.
If the memory position is still not recalling, see your dealer for service.

Storing RKE Memory Positions

Every time the ignition is placed in OFF/LOCK, the vehicle will automatically store the driver seat, outside mirrors, and power tilt and telescoping steering column positions to the RKE transmitter used to start the vehicle. These positions are called RKE Memory positions and may be different than the previously mentioned Button Memory positions saved to the “1,” “2,” and buttons.

Recalling RKE Memory Positions (Auto Memory Recall)

The Auto (Automatic) Memory Recall feature automatically recalls the previously stored RKE Memory positions for the current driver when entering the vehicle.

Depending upon the Auto Memory Recall feature enabled in the vehicle personalization menu, RKE Memory positions are recalled in the following ways:

To activate the recall when On - Driver Door Open is selected in the personalization menu, do one of the following:

- Press on the RKE transmitter and open the driver door.
- Press on the RKE transmitter when the driver door is already open.
- Press the lock/unlock button on the outside driver door handle and open the driver door. The RKE transmitter must be present for the recall to activate.

To activate the recall when On - At Ignition On is selected in the vehicle personalization menu:

- Place the ignition in ON/RUN/START.

See *Vehicle Personalization on page 5-45*.

To stop recall movement, press one of the memory, power mirror, or power seat controls; or press the power tilt and telescoping steering column control. If On - At Ignition On is selected in the vehicle personalization menu, placing the ignition in OFF also stops the recall.

If something has blocked the driver seat and/or the power tilt and telescoping steering column while recalling a memory position, the recall may stop. Remove the obstruction; then press and hold the appropriate manual control for the

memory item that is not recalling for two seconds. Try recalling the memory position again by opening the driver door and pressing 🔓 on the RKE transmitter. If the memory position is still not recalling, see your dealer for service.

Easy Exit Recall

If programmed on in the vehicle personalization menu, the easy exit feature automatically moves the driver seat, power tilt and telescoping steering column, and outside mirrors on some vehicles to the Button Memory positions saved to the (Exit) button. See “Storing Button Memory Positions” in this section and *Vehicle Personalization on page 5-45*.

Easy exit recall automatically activates when one of the following occurs:

- The vehicle is turned off and the driver door is opened within a short time.
- The vehicle is turned off with the driver door open.

If something has blocked the driver seat and/or power tilt and telescoping steering column while recalling the exit position, the recall may stop. Remove the obstruction; then press and hold the appropriate manual control for the exit feature not recalling for two seconds. Try recalling the exit position again. If the exit position is still not recalling, see your dealer for service.

Heated and Ventilated Front Seats

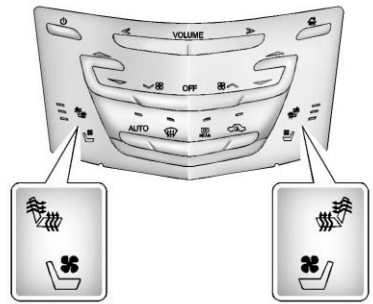
⚠ WARNING

If you cannot feel temperature change or pain to the skin, the seat heater may cause burns. To reduce the risk of burns, people with such a condition should use care when using the seat heater,

(Continued)

WARNING (Continued)

especially for long periods of time. Do not place anything on the seat that insulates against heat, such as a blanket, cushion, cover, or similar item. This may cause the seat heater to overheat. An overheated seat heater may cause a burn or may damage the seat.



If available, the buttons are near the climate controls on the center stack. To operate, the ignition must be in ON/RUN/START.

Press or to heat the driver or passenger seat cushion and seatback.

Press or to ventilate the driver or passenger seat.

When this feature is off, the heated and ventilated seat symbols on the buttons are white. A ventilated seat has a fan that pulls or pushes air through the seat. The air is not cooled. When a heated seat is turned on, the symbol turns red. When a ventilated seat is turned on, the symbol turns blue.

Press the button once for the highest setting. With each press of the button, the seat will change to the next lower setting, and then to the off setting. The indicator lights next to the buttons indicate three for the highest setting and one for the lowest. If the front heated seats are on high, the level may automatically be lowered after approximately 30 minutes.

The passenger seat may take longer to heat up.

Remote Start Heated and Ventilated Seats

During a remote start, the heated or ventilated seats, if equipped, can be turned on automatically. When it is cold outside, the heated seats turn on, and when it is hot outside the ventilated seats turn on. The heated or ventilated seats are canceled when the ignition is turned on. Press the heated or ventilated seat button to use the heated or ventilated seats after the vehicle is started.

The heated or ventilated seat indicator lights do not turn on during a remote start.

The temperature performance of an unoccupied seat may be reduced. This is normal.

The heated or ventilated seats will not turn on during a remote start unless they are enabled in the vehicle personalization menu. See *Remote Vehicle Start on page 2-8* and *Vehicle Personalization on page 5-45*.

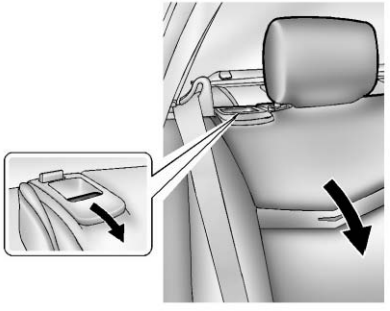
Rear Seats

Folding the Seatback

On some vehicles, either side of the seatback can be folded for more cargo space. Fold a seatback only when the vehicle is not moving.

Notice: **Folding a rear seat with the safety belts still fastened may cause damage to the seat or the safety belts. Always unbuckle the safety belts and return them to their normal stowed position before folding a rear seat.**

To fold the seatback:



1. Pull the lever on top of the seatback to unlock it.

   A red tab near the seatback lever raises when the seatback is unlocked.

2. Fold the seatback forward.

   Repeat the steps to fold the other seatback, if desired.

Raising the Seatback

⚠ WARNING

If either seatback is not locked, it could move forward in a sudden stop or crash. That could cause injury to the person sitting there. Always push and pull on the seatbacks to be sure they are locked.

⚠ WARNING

A safety belt that is improperly routed, not properly attached, or twisted will not provide the protection needed in a crash. The person wearing the belt could be seriously injured. After raising the rear seatback, always check to be sure that the safety belts are properly routed and attached, and are not twisted.

To raise a seatback:

1. Lift the seatback up and push it rearward to lock it in place.

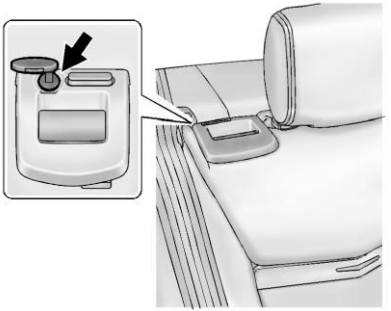
   A red tab near the seatback lever retracts when the seatback is locked in place.
2. Push and pull the top of the seatback to be sure it is locked into position.
3. Repeat the steps to raise the other seatback, if necessary.

When the seat is not in use, it should be kept in the upright, locked position.

Locking and Unlocking the Seatback

The rear seatbacks can be locked or unlocked using the vehicle key.

To lock or unlock a seatback:



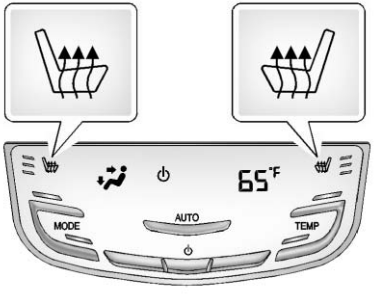
1. Insert the vehicle key into the lock next to the seatback release lever.
2. Turn the key toward the front of the vehicle to lock or unlock the seatback.
3. Repeat Steps 1 and 2 for the other seatback, if desired.

When the seatback is locked, the seatback release lever will not work. The seatbacks cannot be folded down when the seatback lock is engaged.

Heated Rear Seats

⚠ WARNING

If you cannot feel temperature change or pain to the skin, the seat heater may cause burns. See the Warning under *Heated and Ventilated Front Seats on page 3-9*.



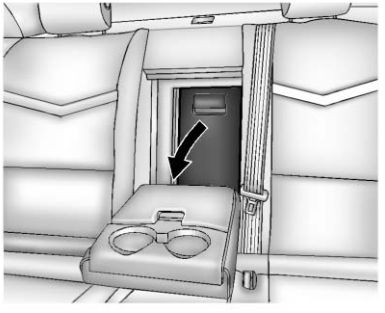
Rear Heated Seat Buttons with Rear Climate Controls Shown, Base Similar

If available, the buttons are on the rear of the center console.

With the ignition in ON/RUN/START, press or to heat the left or right outboard seat cushion and seatback. On vehicles without rear climate controls, an indicator light on the button will turn on when the heated seat is on. On vehicles with rear climate controls, an indicator on the climate control display appears when this feature is on.

On vehicles without rear climate controls, press the button again to turn this feature off. The light on the button will turn off. On vehicles with rear climate controls, this feature turns on at the highest setting. With each press of the button, the heated seat changes to the next lower setting, and then the off setting. Three lights indicate the highest setting, and one light indicates the lowest.

Rear Seat Pass-Through Door



Some vehicles have a rear seat pass-through door in the center of the rear seatback. Fold down the center armrest and pull the latch to open the door.

The pass-through door can be locked or unlocked using the knob on the back of the door. Open the trunk to access the lock. Turn the knob toward to lock the door or away from to unlock the door.

Safety Belts

This section of the manual describes how to use safety belts properly. It also describes some things not to do with safety belts.

⚠ WARNING

Do not let anyone ride where a safety belt cannot be worn properly. In a crash, if you or your passenger(s) are not wearing safety belts, injuries can be much worse than if you are wearing safety belts. You can be seriously injured or killed by hitting things inside the vehicle harder or by being ejected from the vehicle. In addition, anyone who is not buckled up can strike other passengers in the vehicle.

It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, passengers riding in these areas

(Continued)

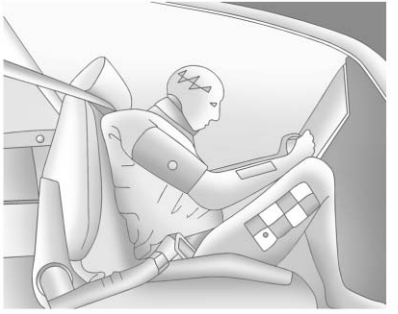
WARNING (Continued)

are more likely to be seriously injured or killed. Do not allow passengers to ride in any area of the vehicle that is not equipped with seats and safety belts.

Always wear a safety belt, and check that all passenger(s) are restrained properly too.

This vehicle has indicators as a reminder to buckle the safety belts. See *Safety Belt Reminders on page 5-15*.

Why Safety Belts Work



When riding in a vehicle, you travel as fast as the vehicle does. If the vehicle stops suddenly, you keep going until something stops you. It could be the windshield, the instrument panel, or the safety belts!

When you wear a safety belt, you and the vehicle slow down together. There is more time to stop because you stop over a longer distance and, when worn properly, your strongest bones take the forces from the

safety belts. That is why wearing safety belts makes such good sense.

Questions and Answers About Safety Belts

Q: Will I be trapped in the vehicle after a crash if I am wearing a safety belt?

A: You *could* be — whether you are wearing a safety belt or not. Your chance of being conscious during and after a crash, so you *can* unbuckle and get out, is *much* greater if you are belted.

Q: If my vehicle has airbags, why should I have to wear safety belts?

A: Airbags are supplemental systems only; so they work *with* safety belts — not instead of them. Whether or not an airbag is provided, all occupants still have to buckle up to get the most protection.

Also, in nearly all states and in all Canadian provinces, the law requires wearing safety belts.

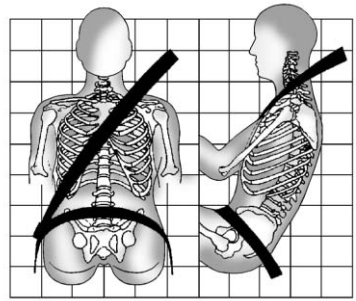
How to Wear Safety Belts Properly

This section is only for people of adult size.

There are special things to know about safety belts and children. And there are different rules for smaller children and infants. If a child will be riding in the vehicle, see *Older Children on page 3-36* or *Infants and Young Children on page 3-38*. Follow those rules for everyone's protection.

It is very important for all occupants to buckle up. Statistics show that unbelted people are hurt more often in crashes than those who are wearing safety belts.

There are important things to know about wearing a safety belt properly.



- Sit up straight and always keep your feet on the floor in front of you.
- Always use the correct buckle for your seating position.
- Wear the lap part of the belt low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones and you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force on your abdomen. This could cause serious or even fatal injuries.

- Wear the shoulder belt over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces. The shoulder belt locks if there is a sudden stop or crash.

⚠ WARNING

You can be seriously injured, or even killed, by not wearing your safety belt properly.

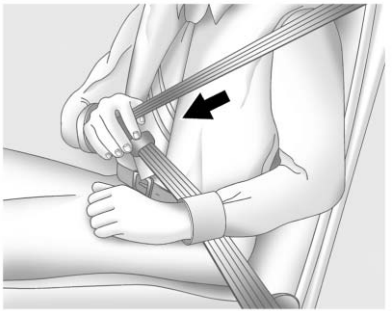
- Never allow the lap or shoulder belt to become loose or twisted.
- Never wear the shoulder belt under both arms or behind your back.
- Never route the lap or shoulder belt over an armrest.

Lap-Shoulder Belt

All seating positions in the vehicle have a lap-shoulder belt.

The following instructions explain how to wear a lap-shoulder belt properly.

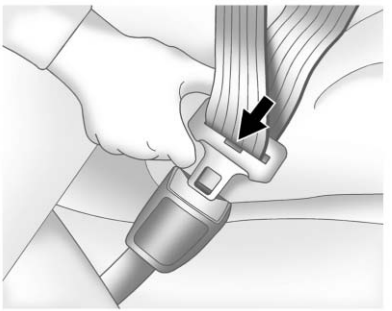
1. Adjust the seat, if the seat is adjustable, so you can sit up straight. To see how, see “Seats” in the Index.



2. Pick up the latch plate and pull the belt across you. Do not let it get twisted.

The lap-shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.

If the shoulder portion of a passenger belt is pulled out all the way, the child restraint locking feature may be engaged. If this happens, let the belt go back all the way and start again.

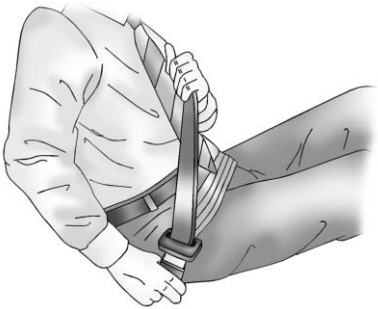


3. Push the latch plate into the buckle until it clicks.

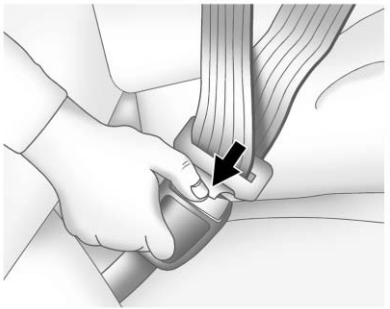
Pull up on the latch plate to make sure it is secure. If the belt is not long enough, see *Safety Belt Extender on page 3-20*.

Position the release button on the buckle so that the safety belt could be quickly unbuckled if necessary.

4. If equipped with a shoulder belt height adjuster, move it to the height that is right for you. See “Shoulder Belt Height Adjuster” later in this section for use and important safety information.



5. To make the lap part tight, pull up on the shoulder belt.



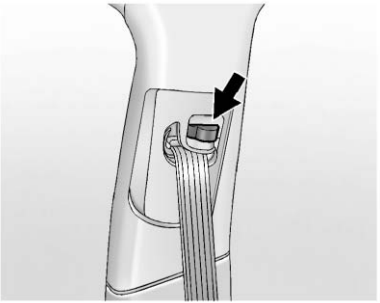
To unlatch the belt, push the button on the buckle. The belt should return to its stowed position.

Before a door is closed, be sure the safety belt is out of the way. If a door is slammed against a safety belt, damage can occur to both the safety belt and the vehicle.

Shoulder Belt Height Adjuster

The vehicle has a shoulder belt height adjuster for the driver and right front passenger seating positions.

Adjust the guide so the shoulder portion of the belt is on the shoulder and not falling off of it. The belt should be close to, but not contacting, the neck. Improper shoulder belt height adjustment could reduce the effectiveness of the safety belt in a crash. See *How to Wear Safety Belts Properly on page 3-15*.



Push down on the release button and move the height adjuster to the desired position. The adjuster can be moved up by pushing the slide/trim up.

After the height adjuster is set to the desired position, try to move it down without pressing the release button to make sure it has locked into position.

Safety Belt Pretensioners

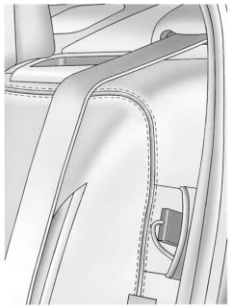
This vehicle has safety belt pretensioners for front outboard occupants. Although the safety belt pretensioners cannot be seen, they are part of the safety belt assembly. They can help tighten the safety belts during the early stages of a moderate to severe frontal, near frontal, or rear crash if the threshold conditions for pretensioner activation are met. And, if the vehicle has side impact airbags, safety belt pretensioners can help tighten the safety belts in a side crash. If the vehicle has roof-rail airbags, for the driver, front outboard passenger, and second row outboard passengers, the pretensioners can tighten the safety belts in a rollover event.

Pretensioners work only once. If the pretensioners activate in a crash, the pretensioners and possibly other parts of the safety belt system will need to be replaced. See *Replacing Safety Belt System Parts after a Crash on page 3-21*.

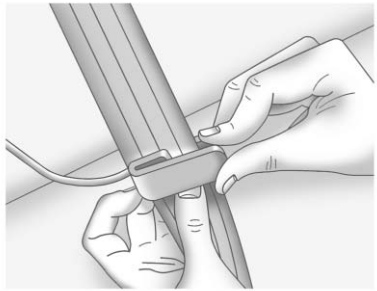
Rear Safety Belt Comfort Guides

This vehicle may have rear safety belt comfort guides. If not, they are available through your dealer. The guides may provide added safety belt comfort for older children who have outgrown booster seats and for some adults. When installed and properly adjusted, the comfort guide positions the belt away from the neck and head.

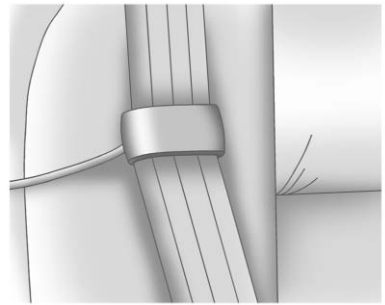
There is one guide for each outside passenger position in the rear seat. To install a comfort guide to the safety belt:



1. Remove the guide from its storage pocket on the side of the seat.



2. Place the guide over the belt, and insert the two edges of the belt into the slots of the guide.



3. Be sure that the belt is not twisted and it lies flat. The elastic cord must be under the belt and the guide on top.

⚠ WARNING

A safety belt that is not properly worn may not provide the protection needed in a crash. The person wearing the belt could be seriously injured. The shoulder belt should go over the shoulder

(Continued)

WARNING (Continued)

and across the chest. These parts of the body are best able to take belt restraining forces.

4. Buckle, position, and release the safety belt as described previously in this section. Make sure the shoulder portion of the belt is on the shoulder and not falling off of it. The belt should be close to, but not contacting, the neck.

Safety Belt Use During Pregnancy

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they do not wear safety belts.

A pregnant woman should wear a lap-shoulder belt, and the lap portion should be worn as low as possible, below the rounding, throughout the pregnancy.

The best way to protect the fetus is to protect the mother. When a safety belt is worn properly, it is more likely that the fetus will not be hurt in a crash. For pregnant women, as for anyone, the key to making safety belts effective is wearing them properly.

Safety Belt Extender

If the vehicle's safety belt will fasten around you, you should use it.

But if a safety belt is not long enough, your dealer will order you an extender. When you go in to order it, take the heaviest coat you will wear, so the extender will be long enough for you. To help avoid personal injury, do not let someone else use it, and use it only for the seat it is made to fit. The extender has been designed for adults. Never use it for securing child seats. To wear it, attach it to the regular safety belt. See the instruction sheet that comes with the extender.

Safety System Check

Now and then, check that the safety belt reminder light, safety belts, buckles, latch plates, retractors, and anchorages are all working properly. Look for any other loose or damaged safety belt system parts that might keep a safety belt system from doing its job. See your dealer to have it repaired. Torn or frayed safety belts may not protect you in a crash. They can rip apart under impact forces. If a belt is torn or frayed, get a new one right away.

Make sure the safety belt reminder light is working. See *Safety Belt Reminders on page 5-15*.

Keep safety belts clean and dry. See *Safety Belt Care on page 3-21*.

Safety Belt Care

Keep belts clean and dry.

⚠ WARNING

Do not bleach or dye safety belts. It may severely weaken them. In a crash, they might not be able to provide adequate protection. Clean safety belts only with mild soap and lukewarm water.

Replacing Safety Belt System Parts after a Crash

⚠ WARNING

A crash can damage the safety belt system in the vehicle. A damaged safety belt system may not properly protect the person using it, resulting in serious injury or even death in a

(Continued)

WARNING (Continued)

crash. To help make sure the safety belt systems are working properly after a crash, have them inspected and any necessary replacements made as soon as possible.

After a minor crash, replacement of safety belts may not be necessary. But the safety belt assemblies that were used during any crash may have been stressed or damaged. See your dealer to have the safety belt assemblies inspected or replaced.

New parts and repairs may be necessary even if the safety belt system was not being used at the time of the crash.

Have the safety belt pretensioners checked if the vehicle has been in a crash, or if the airbag readiness light stays on after you start the vehicle or while you are driving. See *Airbag Readiness Light on page 5-16*.

Airbag System

Vehicles with a standard wheelbase and a factory installed rear seat have the following airbags:

- A frontal airbag for the driver and for the front outboard passenger.
- A knee airbag for the driver and for the front outboard passenger.
- A seat-mounted side impact airbag for the driver and the front outboard passenger.
- Seat-mounted side impact airbags for the second row outboard passengers.
- A roof-rail airbag for the driver and the passenger seated directly behind the driver.
- A roof-rail airbag for the front outboard passenger and the passenger seated directly behind the front outboard passenger.

Vehicles with an extended wheelbase or without a rear seat have the following airbags:

- A frontal airbag for the driver and for the front outboard passenger.
- A knee airbag for the driver and for the front outboard passenger.
- A seat-mounted side impact airbag for the driver and the front outboard passenger.
- A roof-rail airbag for the driver and front outboard passenger.

All vehicle airbags have the word AIRBAG on the trim or on a label near the deployment opening.

For frontal airbags, the word AIRBAG is on the center of the steering wheel for the driver and on the instrument panel for the front outboard passenger.

For knee airbags, the word AIRBAG is on the lower part of the instrument panel.

For seat-mounted side impact airbags, the word AIRBAG is on the side of the seatback closest to the door.

For roof-rail airbags, the word AIRBAG is on the ceiling or trim.

Airbags are designed to supplement the protection provided by safety belts. Even though today's airbags are also designed to help reduce the risk of injury from the force of an inflating bag, all airbags must inflate very quickly to do their job.

Here are the most important things to know about the airbag system:

⚠ WARNING

You can be severely injured or killed in a crash if you are not wearing your safety belt, even with airbags. Airbags are designed to work with safety belts, not replace them. Also, airbags are not designed to inflate

(Continued)

WARNING (Continued)

in every crash. In some crashes safety belts are the only restraint. See *When Should an Airbag Inflate? on page 3-26*.

Wearing your safety belt during a crash helps reduce the chance of hitting things inside the vehicle or being ejected from it. Airbags are “supplemental restraints” to the safety belts. Everyone in the vehicle should wear a safety belt properly, whether or not there is an airbag for that person.

⚠ WARNING

Because airbags inflate with great force and faster than the blink of an eye, anyone who is up against, or very close to any airbag when it inflates can be

(Continued)

WARNING (Continued)

seriously injured or killed. Do not sit unnecessarily close to any airbag, as you would be if sitting on the edge of the seat or leaning forward. Safety belts help keep you in position before and during a crash. Always wear a safety belt, even with airbags. The driver should sit as far back as possible while still maintaining control of the vehicle.

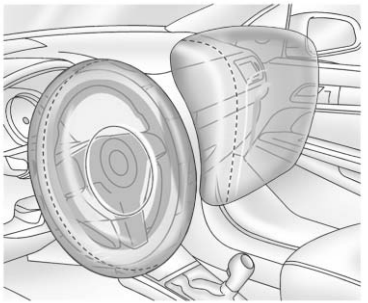
Occupants should not lean on or sleep against the door or side windows in seating positions with seat-mounted side impact airbags and/or roof-rail airbags.

⚠ WARNING

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Airbags plus lap-shoulder belts offer protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its airbag system is designed for them. Young children and infants need the protection that a child restraint system can provide. Always secure children properly in the vehicle. To read how, see *Older Children on page 3-36* or *Infants and Young Children on page 3-38*.

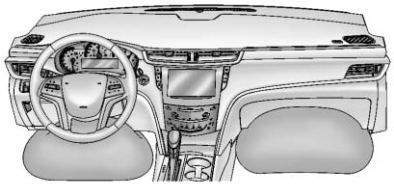
There is an airbag readiness light on the instrument cluster, which shows the airbag symbol. The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light on page 5-16* for more information.

Where Are the Airbags?

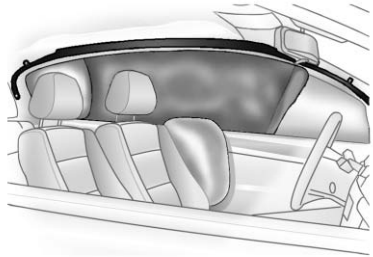


The driver frontal airbag is in the center of the steering wheel.

The front outboard passenger frontal airbag is in the passenger side instrument panel.



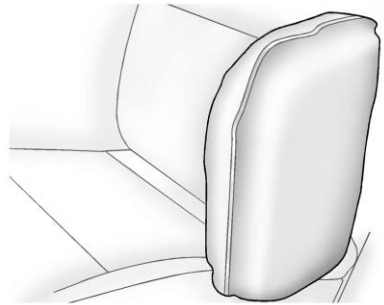
The driver knee airbag is below the steering column. The front outboard passenger knee airbag is below the glove box.



Driver Side Shown, Passenger Side Similar

The seat-mounted side impact airbags for the driver and front outboard passenger are in the side of the seatbacks closest to the door.

The roof-rail airbags, for vehicles with a standard wheelbase and a factory installed rear seat, are in the ceiling above the side windows for the driver, front outboard passenger, and second row outboard passengers.



Rear Seat Driver Side Shown, Passenger Side Similar

The second row seat-mounted side impact airbags, for vehicles with a standard wheelbase and a factory installed rear seat, are in the sides of the rear seatback closest to the door.

Driver Side Shown, Passenger Side Similar

The roof-rail airbags, for vehicles with an extended wheelbase or vehicles without a factory installed rear seat, are in the ceiling above the front row side windows, for the driver and front outboard passenger only.

⚠ WARNING

If something is between an occupant and an airbag, the airbag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating airbag must be kept clear. Do not put anything between an occupant and an airbag, and do not attach or put anything on the steering wheel hub or on or near any other airbag covering.

Do not use seat accessories that block the inflation path of a seat-mounted side impact airbag.

Never secure anything to the roof of a vehicle with roof-rail airbags by routing a rope or tie-down through any door or window opening. If you do, the path of an inflating roof-rail airbag will be blocked.

When Should an Airbag Inflate?

The vehicle has frontal airbags, knee airbags, seat-mounted side impact airbags, and roof-rail airbags. See *Airbag System on page 3-22*. These airbags are designed to inflate if the impact exceeds the specific airbag system's deployment threshold. Deployment thresholds are used to predict how severe a crash is likely to be in time for the airbags to inflate and help restrain the occupants. Deployment thresholds can vary with specific vehicle design.

Frontal airbags are designed to inflate in moderate to severe frontal or near frontal crashes to help reduce the potential for severe injuries, mainly to the driver's or front outboard passenger's head and chest.

Whether the frontal airbags will or should inflate is not based primarily on how fast the vehicle is traveling.

It depends on what is hit, the direction of the impact, and how quickly the vehicle slows down.

Frontal airbags may inflate at different crash speeds depending on whether the vehicle hits an object straight on or at an angle, and whether the object is fixed or moving, rigid or deformable, narrow or wide.

In addition, the vehicle has dual-stage frontal airbags. Dual-stage airbags adjust the restraint according to crash severity.

The vehicle has electronic frontal sensors, which help the sensing system distinguish between a moderate frontal impact and a more severe frontal impact. For moderate frontal impacts, dual-stage airbags inflate at a level less than full deployment. For more severe frontal impacts, full deployment occurs.

Frontal knee airbags are designed to inflate in moderate to severe frontal or near frontal impacts.

Frontal airbags and frontal knee airbags are not intended to inflate during vehicle rollovers, in rear impacts, or in many side impacts.

The seat-mounted side impact airbags and roof-rail airbags are intended to inflate in moderate to severe side crashes depending on the location of the impact.
A seat-mounted side impact airbag is intended to inflate on the side of the vehicle that is struck. Both roof-rail airbags will inflate when either side of the vehicle is struck. In addition, the roof-rail airbags are intended to inflate in a severe frontal impact.

The roof-rail airbags in vehicles with a standard wheelbase and a factory installed rear seat will also inflate if the sensing system predicts that the vehicle is about to roll over on its side.

The roof-rail airbags in vehicles with an extended wheelbase and in vehicles without a factory installed rear seat are not intended to inflate during a rollover.

Seat-mounted side impact airbags are not intended to inflate in frontal impacts, near frontal impacts, rollovers, or rear impacts. Roof-rail airbags are not intended to inflate in rear impacts.

In any particular crash, no one can say whether an airbag should have inflated simply because of the vehicle damage or repair costs.

What Makes an Airbag Inflate?

In a deployment event, the sensing system sends an electrical signal triggering a release of gas from the inflator. Gas from the inflator fills the airbag causing the bag to break out of the cover. The inflator, the airbag, and related hardware are all part of the airbag module.

For airbag location, see *Where Are the Airbags? on page 3-24*.

How Does an Airbag Restrain?

In moderate to severe frontal or near frontal collisions, even belted occupants can contact the steering wheel or the instrument panel. In moderate to severe side collisions, even belted occupants can contact the inside of the vehicle.

Airbags supplement the protection provided by safety belts by distributing the force of the impact more evenly over the occupant's body.

Rollover capable roof-rail airbags are designed to help contain the head and chest of occupants in the outboard seating positions in the first and second rows. The rollover capable roof-rail airbags are designed to help reduce the risk of full or partial ejection in rollover events, although no system can prevent all such ejections.

But airbags would not help in many types of collisions, primarily because the occupant's motion is not toward those airbags. See *When Should an Airbag Inflate? on page 3-26*.

Airbags should never be regarded as anything more than a supplement to safety belts.

What Will You See after an Airbag Inflates?

After the frontal airbags and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize an airbag inflated. Roof-rail airbags may still be at least partially inflated for some time after they inflate. Some components of the airbag module may be hot for several minutes. For location of the airbags, see *Where Are the Airbags? on page 3-24*.

The parts of the airbag that come into contact with you may be warm, but not too hot to touch. There may be some smoke and dust coming from the vents in the deflated airbags. Airbag inflation does not prevent the driver from seeing out of the windshield or being able to steer the vehicle, nor does it prevent people from leaving the vehicle.

⚠ WARNING

When an airbag inflates, there may be dust in the air. This dust could cause breathing problems for people with a history of asthma or other breathing trouble. To avoid this, everyone in the vehicle should get out as soon as it is safe to do so. If you have breathing problems but cannot get out of the vehicle after an airbag inflates, then get fresh air by opening a window or a door. If you experience breathing problems following an airbag deployment, you should seek medical attention.

The vehicle has a feature that may automatically unlock the doors, turn on the interior lamps, turn on the hazard warning flashers, and shut off the fuel system after the airbags inflate. You can lock the doors, turn off the interior lamps, and turn off the hazard warning flashers by using the controls for those features.

⚠ WARNING

A crash severe enough to inflate the airbags may have also damaged important functions in the vehicle, such as the fuel system, brake and steering systems, etc. Even if the vehicle appears to be drivable after a moderate crash, there may be concealed damage that could make it difficult to safely operate the vehicle.

Use caution if you should attempt to restart the engine after a crash has occurred.

In many crashes severe enough to inflate the airbag, windshields are broken by vehicle deformation. Additional windshield breakage may also occur from the front outboard passenger airbag.

- Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for the airbag system. If you do not get them, the airbag system will not be there to help protect you in another crash. A new system will include airbag modules and possibly other parts. The service manual for the vehicle covers the need to replace other parts.
- The vehicle has a crash sensing and diagnostic module which records information after a crash. See *Vehicle Data Recording and Privacy on page 13-14* and *Event Data Recorders on page 13-14*.
- Let only qualified technicians work on the airbag systems. Improper service can mean that an airbag system will not work properly. See your dealer for service.

Passenger Sensing System

The vehicle has a passenger sensing system for the front outboard passenger position. The passenger airbag status indicator will light on the overhead console when the vehicle is started.

United States

Canada

The words ON and OFF or the symbol for on and off will be visible during the system check. When the system check is complete, either the word ON or OFF, or the symbol for on and off will be visible. See *Passenger Airbag Status Indicator on page 5-17*.

The passenger sensing system turns off the front outboard passenger frontal airbag and knee airbag, under certain conditions. No other airbag is affected by the passenger sensing system.

The passenger sensing system works with sensors that are part of the front outboard passenger seat. The sensors are designed to detect the presence of a properly seated occupant and determine if the front outboard passenger frontal airbag and knee airbag should be allowed to inflate or not.

According to accident statistics, children are safer when properly secured in a rear seat in a correct child restraint for their weight and size.

We recommend that children be secured in a rear seat, including: an infant or a child riding in a rear-facing child restraint; a child riding in a forward-facing child seat; an older child riding in a booster seat; and children, who are large enough, using safety belts.

Never put a rear-facing child seat in the front. This is because the risk to the rear-facing child is so great, if the airbag inflates.

⚠ WARNING

A child in a rear-facing child restraint can be seriously injured or killed if the passenger frontal airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag. A child in a forward-facing child restraint can be seriously injured or killed if the passenger frontal airbag inflates and the passenger seat is in a forward position.

Even if the passenger sensing system has turned off the front outboard passenger airbag(s), no system is fail-safe. No one can guarantee that an airbag will not inflate under some unusual circumstance, even though the airbag(s) are off.

(Continued)

WARNING (Continued)

Secure rear-facing child restraints in a rear seat, even if the airbag(s) are off. If you secure a forward-facing child restraint in the front outboard passenger seat, always move the seat as far back as it will go. It is better to secure the child restraint in a rear seat.

The passenger sensing system is designed to turn off the front outboard passenger airbag and knee airbag if:

- The front outboard passenger seat is unoccupied.
- The system determines that an infant is present in a child restraint.
- A front outboard passenger takes his/her weight off of the seat for a period of time.
- Or, if there is a critical problem with the airbag system or the passenger sensing system.

When the passenger sensing system has turned off the front outboard passenger frontal airbag and knee airbag, the off indicator will light and stay lit to remind you that the airbags are off. See *Passenger Airbag Status Indicator on page 5-17*.

The passenger sensing system is designed to turn on the front outboard passenger frontal airbag and knee airbag anytime the system senses that a person of adult size is sitting properly in the front outboard passenger seat.

When the passenger sensing system has allowed the airbags to be enabled, the on indicator will light and stay lit as a reminder that the airbags are active.

For some children, including children in child restraints, and for very small adults, the passenger sensing system may or may not turn off the front outboard passenger frontal airbag and knee airbag, depending upon the person's seating posture and body build. Everyone in the vehicle who has outgrown child restraints should wear a safety belt properly — whether or not there is an airbag for that person.

⚠ WARNING

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light on page 5-16* for more information, including important safety information.

If the On Indicator Is Lit for a Child Restraint

If a child restraint has been installed and the on indicator is lit:

1. Turn the vehicle off.
2. Remove the child restraint from the vehicle.
3. Remove any additional items from the seat such as blankets, cushions, seat covers, seat heaters, or seat massagers.
4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to *Securing Child Restraints (Front Passenger Seat) on page 3-52* or *Securing Child Restraints (Rear Seat) on page 3-49*.
5. If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, turn the vehicle off. Then slightly recline the vehicle seatback and adjust the seat cushion, if adjustable, to make sure that the vehicle seatback is not pushing the child restraint into the seat cushion.

   Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint. See *Head Restraints on page 3-2*.
6. Restart the vehicle.

   The passenger sensing system may or may not turn off the airbags for a child in a child restraint depending upon the child's seating posture and body build. It is better to secure a child restraint in a rear seat.

If the Off Indicator Is Lit for an Adult-Size Occupant

If a person of adult size is sitting in the front outboard passenger seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat. Use the following steps to allow the system to detect that person and enable the front outboard passenger frontal airbag and knee airbag:

1. Turn the vehicle off.

2. Remove any additional material from the seat, such as blankets, cushions, seat covers, seat heaters, or seat massagers, a laptop, or other electronic devices.
3. Place the seatback in the fully upright position.
4. Have the person sit upright in the seat, centered on the seat cushion, with legs comfortably extended.
5. Restart the vehicle and have the person remain in this position for two to three minutes after the on indicator is lit.

Additional Factors Affecting System Operation

Safety belts help keep the passenger in position on the seat during vehicle maneuvers and braking, which helps the passenger sensing system maintain the passenger airbag status. See “Safety Belts” and “Child Restraints” in the Index for additional information about the importance of proper restraint use.

A thick layer of additional material, such as a blanket or cushion, or aftermarket equipment such as seat covers, seat heaters, and seat massagers can affect how well the passenger sensing system operates. We recommend that you not use seat covers or other aftermarket equipment except when approved by GM for your specific vehicle. See *Adding Equipment to the Airbag-Equipped Vehicle on page 3-34* for more information about modifications that can affect how the system operates.

A wet seat can affect the performance of the passenger sensing system. Here is how:

- The passenger sensing system may turn off the passenger frontal airbag and passenger knee airbag when liquid is soaked into the seat. If this happens, the off indicator will be lit, and the airbag readiness light on the instrument panel will also be lit.
- Liquid pooled on the seat that has not soaked in may make it more likely that the passenger sensing system will turn on the passenger frontal airbag and passenger knee airbag while a child restraint or child occupant is on the seat. If the passenger frontal airbag and passenger knee airbag are turned on, the on indicator will be lit.

If the passenger seat gets wet, dry the seat immediately. If the airbag readiness light is lit, do not install a child restraint or allow anyone to occupy the seat. See *Airbag Readiness Light on page 5-16* for important safety information.

The on indicator may be lit if an object, such as a briefcase, handbag, grocery bag, laptop, or other electronic device, is put on

an unoccupied seat. If this is not desired, remove the object from the seat.

⚠ WARNING

Stowing of articles under the passenger seat or between the passenger seat cushion and seatback may interfere with the proper operation of the passenger sensing system.

Servicing the Airbag-Equipped Vehicle

Airbags affect how the vehicle should be serviced. There are parts of the airbag system in several places around the vehicle. Your dealer and the service manual have information about servicing the vehicle and the airbag system. To purchase a service manual, see *Service Publications Ordering Information on page 13-11*.

⚠ WARNING

For up to 10 seconds after the vehicle is turned off and the battery is disconnected, an airbag can still inflate during improper service. You can be injured if you are close to an airbag when it inflates. Avoid yellow connectors. They are probably part of the airbag system. Be sure to follow proper service procedures, and make sure the person performing work for you is qualified to do so.

Adding Equipment to the Airbag-Equipped Vehicle

Adding accessories that change the vehicle's frame, bumper system, height, front end, or side sheet metal, may keep the airbag system from working properly. The operation of the airbag system can also be affected by changing or moving any parts of the front seats, safety belts, the airbag sensing and diagnostic module, steering wheel, instrument panel, roof-rail airbag modules, ceiling headliner or pillar garnish trim, front sensors, side impact sensors, or airbag wiring.

Your dealer and the service manual have information about the location of the airbag sensors, sensing and diagnostic module, and airbag wiring.

In addition, the vehicle has a passenger sensing system for the front outboard passenger position, which includes sensors that are part of the passenger seat. The passenger sensing system may not operate properly if the original seat trim is replaced with non-GM covers, upholstery, or trim; or with GM covers, upholstery, or trim designed for a different vehicle. Any object, such as an aftermarket seat heater or a comfort-enhancing pad or device, installed under or on top of the seat fabric, could also interfere with the operation of the passenger sensing system. This could either prevent proper

deployment of the passenger airbag(s) or prevent the passenger sensing system from properly turning off the passenger airbag(s). See *Passenger Sensing System on page 3-29*.

If the vehicle has rollover roof-rail airbags, see *Different Size Tires and Wheels on page 10-51* for additional important information.

If you have to modify your vehicle because you have a disability and you have questions about whether the modifications will affect the vehicle's airbag system, or if you have questions about whether the airbag system will be affected if the vehicle is modified for any other reason, call Customer Assistance. See *Customer Assistance Offices on page 13-3*.

Airbag System Check

The airbag system does not need regularly scheduled maintenance or replacement. Make sure the airbag readiness light is working. See *Airbag Readiness Light on page 5-16*.

Notice: **If an airbag covering is damaged, opened, or broken, the airbag may not work properly. Do not open or break the airbag coverings. If there are any opened or broken airbag covers, have the airbag covering and/or airbag module replaced. For the location of the airbags, see *Where Are the Airbags? on page 3-24*. See your dealer for service.**

Replacing Airbag System Parts after a Crash

⚠ WARNING

A crash can damage the airbag systems in the vehicle.
A damaged airbag system may not work properly and may not protect you and your

(Continued)

WARNING (Continued)

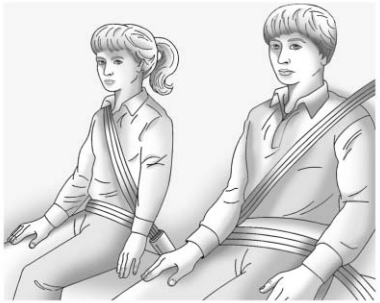
passenger(s) in a crash, resulting in serious injury or even death. To help make sure the airbag systems are working properly after a crash, have them inspected and any necessary replacements made as soon as possible.

If an airbag inflates, you will need to replace airbag system parts. See your dealer for service.

If the airbag readiness light stays on after the vehicle is started or comes on when you are driving, the airbag system may not work properly. Have the vehicle serviced right away. See *Airbag Readiness Light on page 5-16*.

Child Restraints

Older Children



Older children who have outgrown booster seats should wear the vehicle safety belts.

The manufacturer instructions that come with the booster seat state the weight and height limitations for that booster. Use a booster seat with a lap-shoulder belt until the child passes the fit test below:

- Sit all the way back on the seat. Do the knees bend at the seat edge? If yes, continue. If no, return to the booster seat.
- Buckle the lap-shoulder belt. Does the shoulder belt rest on the shoulder? If yes, continue. If no, try using the rear safety belt comfort guide. See “Rear Safety Belt Comfort Guides” under *Lap-Shoulder Belt on page 3-16*. If the shoulder belt still does not rest on the shoulder, then return to the booster seat.
- Does the lap belt fit low and snug on the hips, touching the thighs? If yes, continue. If no, return to the booster seat.
- Can proper safety belt fit be maintained for the length of the trip? If yes, continue. If no, return to the booster seat.

Q: What is the proper way to wear safety belts?

A: An older child should wear a lap-shoulder belt and get the additional restraint a shoulder belt can provide. The shoulder belt should not cross the face or neck. The lap belt should fit snugly below the hips, just touching the top of the thighs. This applies belt force to the child's pelvic bones in a crash. It should never be worn over the abdomen, which could cause severe or even fatal internal injuries in a crash.

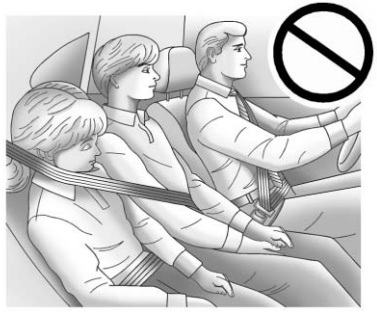
Also see “Rear Safety Belt Comfort Guides” under *Lap-Shoulder Belt on page 3-16*.

According to accident statistics, children and infants are safer when properly restrained in a child restraint system or infant restraint system secured in a rear seating position.

In a crash, children who are not buckled up can strike other people who are buckled up, or can be thrown out of the vehicle. Older children need to use safety belts properly.

⚠ WARNING

Never allow more than one child to wear the same safety belt. The safety belt cannot properly spread the impact forces. In a crash, they can be crushed together and seriously injured. A safety belt must be used by only one person at a time.



⚠ WARNING

Never allow a child to wear the safety belt with the shoulder belt behind their back. A child can be seriously injured by not wearing the lap-shoulder belt properly. In a crash, the child would not be restrained by the shoulder belt. The child could move too far forward increasing the chance of head and neck injury. The child might also slide under the lap

(Continued)

WARNING (Continued)

belt. The belt force would then be applied right on the abdomen. That could cause serious or fatal injuries. The shoulder belt should go over the shoulder and across the chest.

Infants and Young Children

Everyone in a vehicle needs protection! This includes infants and all other children. Neither the distance traveled nor the age and size of the traveler changes the need, for everyone, to use safety restraints. In fact, the law in every state in the United States and in every Canadian province says children up to some age must be restrained while in a vehicle.

⚠ WARNING

Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Never leave children unattended in a vehicle and never allow children to play with the safety belts.

Airbags plus lap-shoulder belts offer protection for adults and older children, but not for young children and infants. Neither the vehicle's safety belt system nor its airbag system is designed for them. Every time infants and young children ride in vehicles, they should have the protection provided by appropriate child restraints.

Children who are not restrained properly can strike other people, or can be thrown out of the vehicle.

⚠ WARNING

Never hold an infant or a child while riding in a vehicle. Due to crash forces, an infant or a child will become so heavy it is not possible to hold it during a crash. For example, in a crash at only 40 km/h (25 mph), a 5.5 kg (12 lb) infant will suddenly become a 110 kg (240 lb) force on a person's

(Continued)

WARNING (Continued)

arms. An infant should be secured in an appropriate restraint.

⚠ WARNING

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Never put a rear-facing

(Continued)

WARNING (Continued)

child restraint in the right front seat. Secure a rear-facing child restraint in a rear seat. It is also better to secure a forward-facing child restraint in a rear seat. If you must secure a forward-facing child restraint in the right front seat, always move the front passenger seat as far back as it will go.

Q: What are the different types of add-on child restraints?

A: Add-on child restraints, which are purchased by the vehicle owner, are available in four basic types. Selection of a particular restraint should take into consideration not only the child's weight, height, and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

For most basic types of child restraints, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle. If it is, the restraint will have a label saying that it meets federal motor vehicle safety standards.

The restraint manufacturer instructions that come with the restraint state the weight and height limitations for a particular child restraint. In addition, there are many kinds of restraints available for children with special needs.

⚠ WARNING

To reduce the risk of neck and head injury during a crash, infants need complete support. In a crash, if an infant is in a rear-facing child restraint, the crash forces can be distributed across the strongest part of an infant's body, the back and shoulders. Infants should always be secured in rear-facing child restraints.

⚠ WARNING

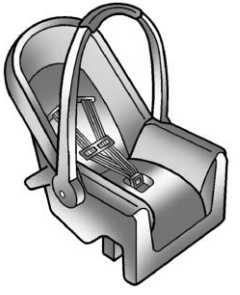
A young child's hip bones are still so small that the vehicle's regular safety belt may not remain low on the hip bones, as it should.

(Continued)

WARNING (Continued)

Instead, it may settle up around the child's abdomen. In a crash, the belt would apply force on a body area that is unprotected by any bony structure. This alone could cause serious or fatal injuries. To reduce the risk of serious or fatal injuries during a crash, young children should always be secured in appropriate child restraints.

Child Restraint Systems



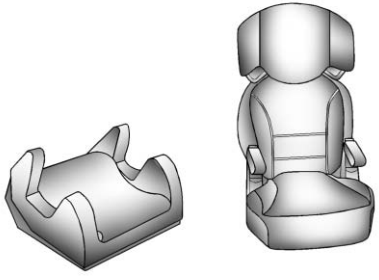
Rear-Facing Infant Seat

A rear-facing infant seat provides restraint with the seating surface against the back of the infant.

The harness system holds the infant in place and, in a crash, acts to keep the infant positioned in the restraint.

Forward-Facing Child Seat

A forward-facing child seat provides restraint for the child's body with the harness.



Booster Seats

A booster seat is a child restraint designed to improve the fit of the vehicle's safety belt system.
A booster seat can also help a child to see out the window.

Securing an Add-On Child Restraint in the Vehicle

⚠ WARNING

A child can be seriously injured or killed in a crash if the child restraint is not properly secured in the vehicle. Secure the child restraint properly in the vehicle using the vehicle safety belt or LATCH system, following the instructions that came with that child restraint and the instructions in this manual.

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraint systems must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by the LATCH system. See *Lower Anchors and Tethers for Children (LATCH System) on page 3-43*.

Children can be endangered in a crash if the child restraint is not properly secured in the vehicle.

When securing an add-on child restraint, refer to the instructions that come with the restraint which may be on the restraint itself or in a booklet, or both, and to this manual. The child restraint instructions are important, so if they are not available, obtain a replacement copy from the manufacturer.

Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in the vehicle — even when no child is in it.

In some areas of the United States and Canada, Certified Child Passenger Safety Technicians (CPSTs) are available to inspect and demonstrate how to correctly use and install child restraints. In the U.S., refer to the National Highway Traffic Safety

Administration (NHTSA) website to locate the nearest child safety seat inspection station. For CPST availability in Canada, check with Transport Canada or the Provincial Ministry of Transportation office.

Securing the Child Within the Child Restraint

⚠ WARNING

A child can be seriously injured or killed in a crash if the child is not properly secured in the child restraint. Secure the child properly following the instructions that came with that child restraint.

Where to Put the Restraint

According to accident statistics, children and infants are safer when properly restrained in a child restraint system or infant restraint system secured in a rear seating position.

We recommend that children and child restraints be secured in a rear seat, including: an infant or a child riding in a rear-facing child restraint; a child riding in a forward-facing child seat; an older child riding in a booster seat; and children, who are large enough, using safety belts.

Never put a rear-facing child seat in the front. This is because the risk to the rear-facing child is so great if the airbag deploys.

⚠ WARNING

A child in a rear-facing child restraint can be seriously injured or killed if the right front passenger airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag. A child in a forward-facing child restraint can be seriously injured or killed if the right front

(Continued)

WARNING (Continued)

passenger airbag inflates and the passenger seat is in a forward position.

Even if the passenger sensing system has turned off the right front passenger frontal airbag, no system is fail-safe. No one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off.

Secure rear-facing child restraints in a rear seat, even if the airbag is off. If you secure a forward-facing child restraint in the right front seat, always move the front passenger seat as far back as it will go. It is better to secure the child restraint in a rear seat.

See *Passenger Sensing System on page 3-29* for additional information.

When securing a child restraint in a rear seating position, study the instructions that came with the child restraint to make sure it is compatible with this vehicle.

Child restraints and booster seats vary considerably in size, and some may fit in certain seating positions better than others. Always make sure the child restraint is properly secured.

Depending on where you place the child restraint and the size of the child restraint, you may not be able to access adjacent safety belt assemblies or LATCH anchors for additional passengers or child restraints. Adjacent seating positions should not be used if the child restraint prevents access to or interferes with the routing of the safety belt.

If the vehicle does not have a rear seat that will accommodate a rear-facing child restraint, a rear-facing child restraint should not be installed in the vehicle, even if the airbag is off.

Wherever a child restraint is installed, be sure to secure the child restraint properly.

Keep in mind that an unsecured child restraint can move around in a collision or sudden stop and injure people in the vehicle. Be sure to properly secure any child restraint in the vehicle — even when no child is in it.

Lower Anchors and Tethers for Children (LATCH System)

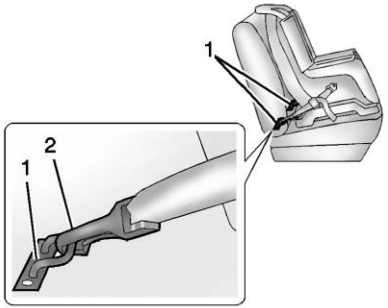
The LATCH system secures a child restraint during driving or in a crash. LATCH attachments on the child restraint are used to attach the child restraint to the anchors in the vehicle. This system is designed to make installation of a child restraint easier.

Make sure that a LATCH-compatible child restraint is properly installed using the anchors, or use the vehicle's safety belts to secure the restraint, following the instructions that came with that restraint, and also the instructions in this manual. When installing a child restraint with a top tether, you must also use either the lower anchors or the safety belts to properly secure the child restraint. A child restraint must never be installed using only the top tether and anchor.

In order to use the LATCH system in the vehicle, you need a child restraint that has LATCH attachments. The child restraint manufacturer will provide you with instructions on how to use the child restraint and its attachments. The following explains how to attach a child restraint with these attachments in the vehicle.

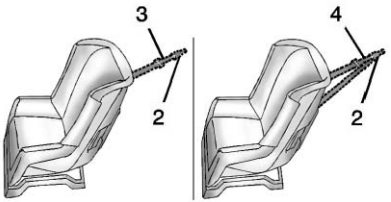
Not all vehicle seating positions or child restraints have lower anchors and attachments or top tether anchors and attachments.

Lower Anchors



Lower anchors (1) are metal bars built into the vehicle. There are two lower anchors for each LATCH seating position that will accommodate a child restraint with lower attachments (2).

Top Tether Anchor

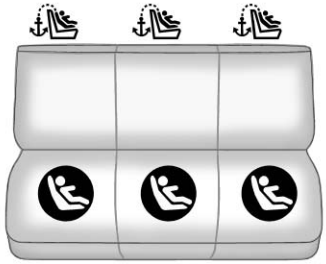


A top tether (3, 4) anchors the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment (2) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child restraint during driving or in a crash.

The child restraint may have a single tether (3) or a dual tether (4). Either will have a single attachment (2) to secure the top tether to the anchor.

Some child restraints that have a top tether are designed for use with or without the top tether being attached. Others require the top tether always to be attached. In Canada, the law requires that forward-facing child restraints have a top tether, and that the tether be attached. Be sure to read and follow the instructions for the child restraint.

Lower Anchor and Top Tether Anchor Locations



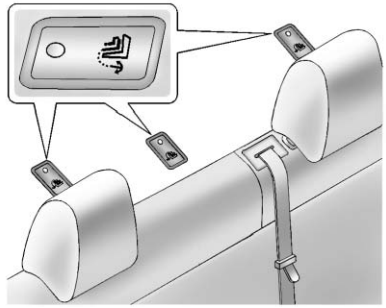
Rear Seat

(Top Tether Anchor): Seating positions with top tether anchors.

(Lower Anchor): Seating positions with two lower anchors.

To assist in locating the lower anchors, each rear anchor position has a label, near the crease between the seatback and the seat cushion.

To assist in locating the top tether anchors, the top tether anchor symbol is on the cover.



The top tether anchors are under the covers, behind the rear seat, on the filler panel. Be sure to use an anchor on the same side of the vehicle as the seating position where the child restraint will be placed.

Do not secure a child restraint in a position without a top tether anchor if a national or local law requires that the top tether be attached, or if the instructions that come with the child restraint say that the top tether must be attached.

According to accident statistics, children and infants are safer when properly restrained in a child restraint system or infant restraint system secured in a rear seating position. See *Where to Put the Restraint on page 3-42* for additional information.

Securing a Child Restraint Designed for the LATCH System

⚠ WARNING

If a LATCH-type child restraint is not attached to anchors, the child restraint will not be able to protect the child correctly. In a crash, the child could be seriously injured or killed. Install a LATCH-type child restraint properly using the anchors, or use the vehicle safety belts to secure the restraint, following the instructions that came with the child restraint and the instructions in this manual.

⚠ WARNING

Do not attach more than one child restraint to a single anchor. Attaching more than one child restraint to a single anchor could cause the anchor or attachment to come loose or even break during a crash. A child or others could be injured. To reduce the risk of serious or fatal injuries during a crash, attach only one child restraint per anchor.

⚠ WARNING

Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck and the safety belt continues to tighten. Buckle any unused safety belts behind the child restraint so children cannot reach them. Pull the shoulder belt all the way out

(Continued)

WARNING (Continued)

of the retractor to set the lock, if the vehicle has one, after the child restraint has been installed.

Notice: **Do not let the LATCH attachments rub against the vehicle's safety belts. This may damage these parts. If necessary, move buckled safety belts to avoid rubbing the LATCH attachments.**

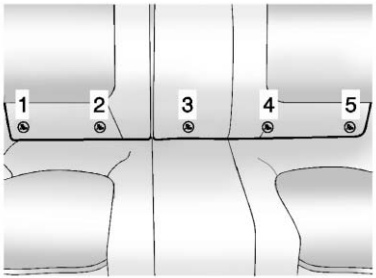
Do not fold the empty rear seat with a safety belt buckled. This could damage the safety belt or the seat. Unbuckle and return the safety belt to its stowed position, before folding the seat.

If you need to secure more than one child restraint in the rear seat, see *Where to Put the Restraint on page 3-42*.

You cannot secure three child restraints using the LATCH anchors in the rear seat at the same time,

but you can install two of them. If you want to do this, install one LATCH child restraint in the right rear seating position, and install the other one either in the left rear seating position or in the center seating position. If you need to install child restraints in both the center and left rear seating positions, the one in the center seating position will need to be secured using the vehicle safety belts instead of the LATCH anchors.

Refer to the following illustration to learn which anchors to use.



There are five lower LATCH anchors in the rear seat.

- Use anchors 1 and 2 when installing a child restraint using LATCH in the right rear seating position.
- Use anchors 3 and 4 when installing a child restraint using LATCH in the center rear seating position.
- Use anchors 4 and 5 when installing a child restraint using LATCH in the left rear seating position.

Installing child restraints using LATCH in the center and left rear seating positions at the same time is prohibited.

Make sure to attach the child restraint at the proper anchor location.

This system is designed to make installation of child restraints easier. When using lower anchors, do not use the vehicle's safety belts. Instead use the vehicle's anchors and child restraint attachments to secure the restraints. Some restraints also use another vehicle anchor to secure a top tether.

1. Attach and tighten the lower attachments to the lower anchors. If the child restraint does not have lower attachments or the desired seating position does not have lower anchors, secure the child restraint with the top tether and the safety belts. Refer to the child restraint manufacturer instructions and the instructions in this manual.
   1.1. Find the lower anchors for the desired seating position.
   1.2. For outboard rear seating positions, put the head restraint in the upright position. See *Head Restraints on page 3-2*.
   1.3. Put the child restraint on the seat.

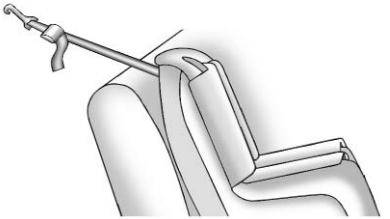
1.4. Attach and tighten the lower attachments on the child restraint to the lower anchors.

2. If the child restraint manufacturer recommends that the top tether be attached, attach and tighten the top tether to the top tether anchor, if equipped. Refer to the child restraint instructions and the following steps:

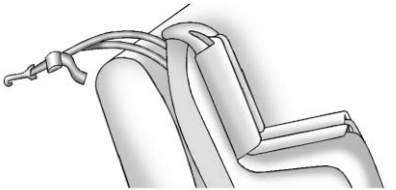
2.1. Find the top tether anchor.

Open the cover to expose the anchor.

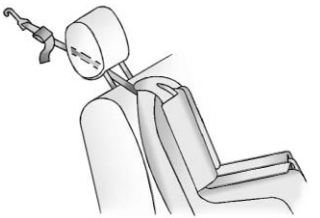
2.2. Route, attach, and tighten the top tether according to the child restraint instructions and the following instructions:



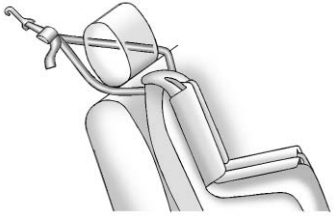
If the position you are using does not have a headrest or head restraint and you are using a single tether, route the tether over the seatback.



If the position you are using does not have a headrest or head restraint and you are using a dual tether, route the tether over the seatback.



If the position you are using has an adjustable headrest or head restraint and you are using a single tether, raise the headrest or head restraint and route the tether under the headrest or head restraint and in between the headrest or head restraint posts.



If the position you are using has an adjustable headrest or head restraint and you are using a dual tether, raise the headrest or head restraint and route the tether under the headrest or head restraint and around the headrest or head restraint posts.

3. Before placing a child in the child restraint, make sure it is securely held in place. To check, grasp the child restraint at the LATCH path and attempt to move it side to side and back and forth. There should be no more than 2.5 cm (1 in) of movement for proper installation.

Replacing LATCH System Parts After a Crash

⚠ WARNING

A crash can damage the LATCH system in the vehicle. A damaged LATCH system may not properly secure the child restraint, resulting in serious injury or even death in a crash. To help make sure the LATCH system is

(Continued)

WARNING (Continued)

working properly after a crash, see your dealer to have the system inspected and any necessary replacements made as soon as possible.

If the vehicle has the LATCH system and it was being used during a crash, new LATCH system parts may be needed.

New parts and repairs may be necessary even if the LATCH system was not being used at the time of the crash.

Securing Child Restraints (Rear Seat)

When securing a child restraint in a rear seating position, study the instructions that came with the child restraint to make sure it is compatible with this vehicle.

If the child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH System) on page 3-43* for how and where to install your child restraint using LATCH. If a child restraint is secured in the vehicle using a safety belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System) on page 3-43* for top tether anchor locations.

Do not secure a child restraint in a position without a top tether anchor if a national or local law requires that the top tether be anchored, or if the instructions that come with the child restraint say that the top strap must be anchored.

In Canada, the law requires that forward-facing child restraints have a top tether, and that the tether be attached.

If the child restraint does not have the LATCH system, you will be using the safety belt to secure the child restraint in this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint on page 3-42*.

1. Put the child restraint on the seat.

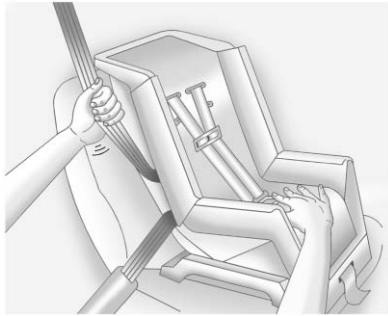
   For outboard rear seat positions, put the head restraint in the upright position. See *Head Restraints on page 3-2*.

2. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.

3. Push the latch plate into the buckle until it clicks.

   Position the release button on the buckle so that the safety belt could be quickly unbuckled if necessary.

4. Pull the shoulder belt all the way out of the retractor to set the lock. When the retractor lock is set, the belt can be tightened but not pulled out of the retractor.



5. To tighten the belt, push down on the child restraint, pull the shoulder portion of the belt to tighten the lap portion of the belt, and feed the shoulder belt back into the retractor. When installing a forward-facing child restraint, it may be helpful to use your knee to push down on the child restraint as you tighten the belt.

   Try to pull the belt out of the retractor to make sure the retractor is locked. If the retractor is not locked, repeat Steps 4 and 5.

6. If the child restraint has a top tether, follow the child restraint manufacturer instructions regarding the use of the top tether. See *Lower Anchors and Tethers for Children (LATCH System) on page 3-43*.

7. Before placing a child in the child restraint, make sure it is securely held in place. To check, grasp the child restraint at the safety belt path and attempt to move it side to side and back and forth. When the child restraint is properly installed, there should be no more than 2.5 cm (1 in) of movement.

To remove the child restraint, unbuckle the vehicle safety belt and let it return to the stowed position. If the top tether is attached to a top tether anchor, disconnect it.

Securing Child Restraints (Front Passenger Seat)

This vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint on page 3-42*.

In addition, the vehicle has a passenger sensing system which is designed to turn off the front passenger frontal airbag under certain conditions. See *Passenger Sensing System on page 3-29* and *Passenger Airbag Status Indicator on page 5-17* for more information, including important safety information.

A label on the sun visor says, “Never put a rear-facing child seat in the front.” This is because the risk to the rear-facing child is so great, if the airbag deploys.

⚠ WARNING

A child in a rear-facing child restraint can be seriously injured or killed if the front passenger airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag. A child in a forward-facing child restraint can be seriously injured or killed if the front passenger airbag inflates and the passenger seat is in a forward position.

Even if the passenger sensing system has turned off the front passenger frontal airbag, no system is fail-safe. No one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off.

(Continued)

WARNING (Continued)

Secure rear-facing child restraints in a rear seat, even if the airbag is off. If you secure a forward-facing child restraint in the front seat, always move the front passenger seat as far back as it will go. It is better to secure the child restraint in a rear seat.

See *Passenger Sensing System on page 3-29* for additional information.

If the child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH System) on page 3-43* for how and where to install the child restraint using LATCH. If a child restraint is secured using a safety belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System) on page 3-43* for top tether anchor locations.

Do not secure a child seat in a position without a top tether anchor if a national or local law requires that the top tether be anchored, or if the instructions that come with the child restraint say that the top strap must be anchored.

In Canada, the law requires that forward-facing child restraints have a top tether, and that the tether be attached.

You will be using the lap-shoulder belt to secure the child restraint in this position. Follow the instructions that came with the child restraint.

1. Move the seat as far back as it will go before securing the forward-facing child restraint.

   When the passenger sensing system has turned off the front passenger frontal airbag, the off indicator on the passenger airbag status indicator should light and stay lit when the vehicle is started. See *Passenger Airbag Status Indicator on page 5-17*.

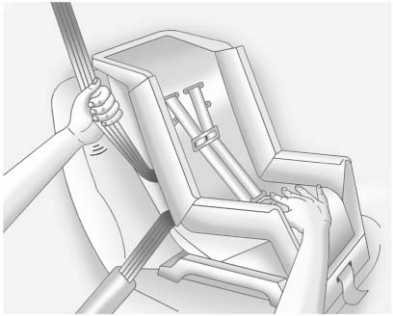
2. Put the child restraint on the seat.

3. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.

4. Push the latch plate into the buckle until it clicks.

   Position the release button on the buckle, so that the safety belt could be quickly unbuckled if necessary.

5. Pull the shoulder belt all the way out of the retractor to set the lock. When the retractor lock is set, the belt can be tightened but not pulled out of the retractor.



6. To tighten the belt, push down on the child restraint, pull the shoulder portion of the belt to tighten the lap portion of the belt, and feed the shoulder belt back into the retractor. When installing a forward-facing child restraint, it may be helpful to use your knee to push down on the child restraint as you tighten the belt.

   Try to pull the belt out of the retractor to make sure the retractor is locked. If the retractor is not locked, repeat Steps 5 and 6.

7. Before placing a child in the child restraint, make sure it is securely held in place. To check, grasp the child restraint at the safety belt path and attempt to move it side to side and back and forth. When the child restraint is properly installed, there should be no more than 2.5 cm (1 in) of movement.

If the airbag is off, the off indicator in the passenger airbag status indicator will come on and stay on when the vehicle is started.

If a child restraint has been installed and the on indicator is lit, see “If the On Indicator Is Lit for a Child Restraint” under *Passenger Sensing System on page 3-29*.

To remove the child restraint, unbuckle the vehicle safety belt and let it return to the stowed position.

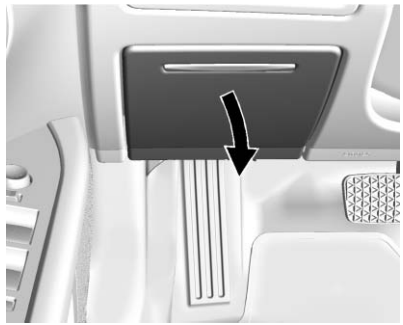
Storage

Storage Compartments
Instrument Panel Storage 4-1
Glove Box 4-2
Armrest Storage 4-2
Center Console Storage 4-2

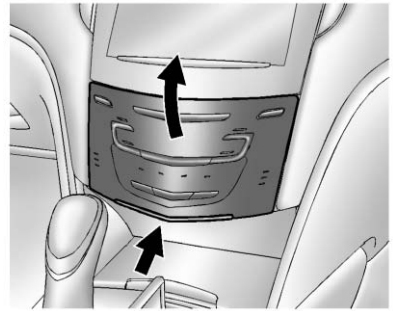
Additional Storage Features
Cargo Tie-Downs 4-4
Cargo Management System 4-4
Convenience Net 4-4

Storage Compartments

Instrument Panel Storage



To access, push on the cover and release.

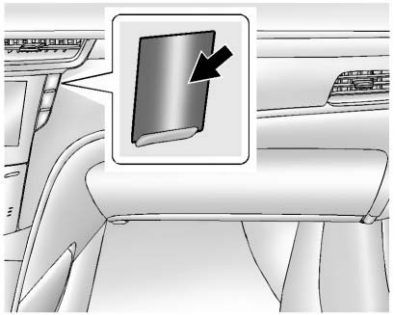


If equipped with storage behind the climate control system, touch the bottom of the climate control system panel to open. There is a USB port and auxiliary jack inside. See the infotainment manual.

Keep the storage area closed when not in use.

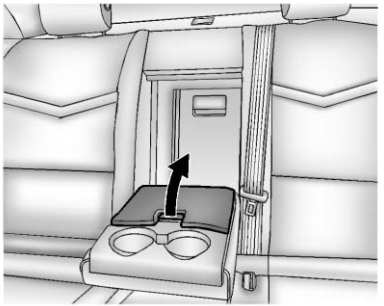
Touch the bottom of the climate control system panel to close.

Glove Box



To open, touch the button. The glove box has a compact disc player and MP3 connection inside.

Armrest Storage

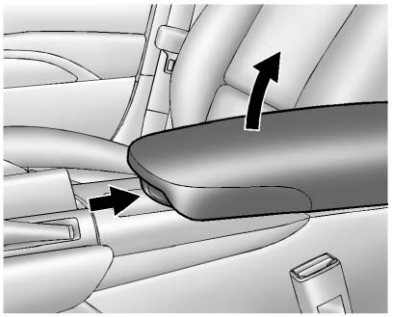


Rear

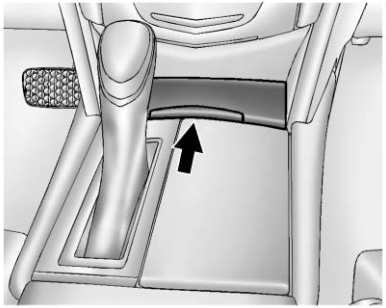
Pull the armrest down and pull up on the lever to access the storage area.

There are cupholders in the rear armrest.

Center Console Storage

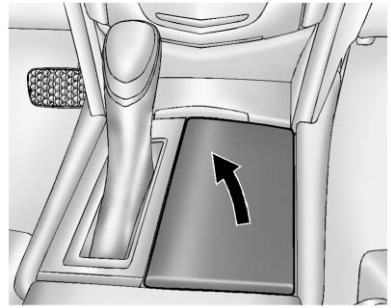


Push the button and lift to access the storage area. There is a power outlet, auxiliary jack, and SD card port inside. See *Power Outlets on page 5-6* and the infotainment manual.



Push the cover forward to access. To close, push the cover again and release.

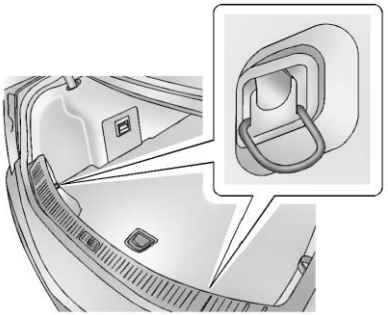
The center console has a storage area in the rear of the console. Press and release the door to access. Push the door to close. There are power outlets under the storage areas. See *Power Outlets on page 5-6*.



There are cupholders in the center console. Push and release on the passenger side of the cover to access the cupholders.

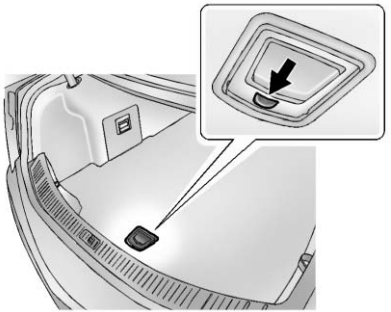
Additional Storage Features

Cargo Tie-Downs



The cargo tie-downs can be used to secure small loads and the convenience net. See *Convenience Net on page 4-4*, if equipped.

Cargo Management System



To open the cargo management system, push down on the rear of the handle, then lift the handle up.

Convenience Net

The vehicle may have a convenience net in the trunk. The net is attached to the cargo tie-downs. Put small loads behind the net. It can also be positioned into an envelope to hold smaller items inside. Do not use the net for heavy loads.

Instruments and Controls

Controls

Steering Wheel Adjustment . . . 5-2
Steering Wheel Controls 5-2
Heated Steering Wheel 5-3
Horn 5-3
Windshield Wiper/Washer 5-3
Compass 5-5
Clock 5-5
Power Outlets 5-6
Cigarette Lighter 5-7

Warning Lights, Gauges, and Indicators

Warning Lights, Gauges, and Indicators 5-7
Instrument Cluster 5-9
Speedometer 5-13
Odometer 5-13
Trip Odometer 5-13
Tachometer 5-13
Fuel Gauge 5-13
Engine Coolant Temperature Gauge 5-15
Safety Belt Reminders 5-15
Airbag Readiness Light 5-16
Passenger Airbag Status Indicator 5-17
Charging System Light 5-18
Malfunction Indicator Lamp 5-18
Brake System Warning Light 5-21
Electric Parking Brake Light 5-21
Service Electric Parking Brake Light 5-21
Antilock Brake System (ABS) Warning Light 5-22
Lane Departure Warning (LDW) Light 5-22
Vehicle Ahead Indicator 5-23
Traction Off Light 5-23
StabiliTrak® OFF Light 5-23
Traction Control System (TCS)/StabiliTrak® Light 5-24
Engine Coolant Temperature Warning Light 5-24
Tire Pressure Light 5-25
Engine Oil Pressure Light 5-25
Low Fuel Warning Light 5-26
Security Light 5-26
High-Beam On Light 5-26
Adaptive Forward Lighting (AFL) Light 5-27
Lamps On Reminder 5-27
Cruise Control Light 5-27
Door Ajar Light 5-28

Information Displays

Driver Information Center (DIC) 5-28
Head-Up Display (HUD) 5-31

Vehicle Messages

Vehicle Messages 5-34
Battery Voltage and Charging Messages 5-35
Brake System Messages 5-35
Compass Messages 5-36
Cruise Control Messages 5-36
Door Ajar Messages 5-36
Engine Cooling System Messages 5-37
Engine Oil Messages 5-37
Engine Power Messages 5-38
Fuel System Messages 5-38
Key and Lock Messages 5-38
Lamp Messages 5-39
Object Detection System Messages 5-39

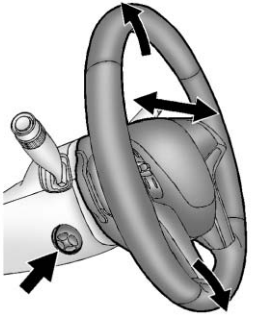
Ride Control System Messages 5-42
Airbag System Messages 5-43
Security Messages 5-43
Service Vehicle Messages . . . 5-43
Starting the Vehicle Messages 5-43
Tire Messages 5-43
Transmission Messages 5-44
Vehicle Reminder Messages 5-44
Vehicle Speed Messages 5-45
Washer Fluid Messages 5-45
Window Messages 5-45

Vehicle Personalization
Vehicle Personalization 5-45

Universal Remote System
Universal Remote System . . . 5-51
Universal Remote System Programming 5-51
Universal Remote System Operation 5-54

Controls

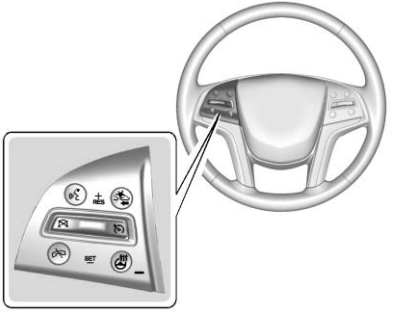
Steering Wheel Adjustment



Press the control to move the tilt and telescoping steering wheel up and down or forward and rearward.

Do not adjust the steering wheel while driving.

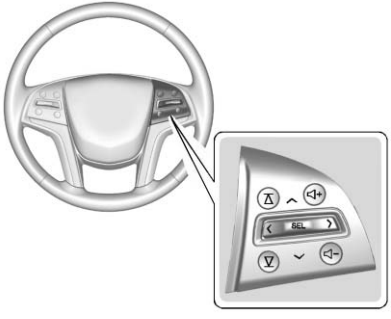
Steering Wheel Controls



For vehicles with audio steering wheel controls, some audio controls can be adjusted at the steering wheel.

(Push to Talk): For vehicles with OnStar® or a Bluetooth system, press to talk or interact with those systems. See *OnStar Overview on page 14-1* or “Bluetooth” in the separate infotainment manual.

(End Call): Press to decline an incoming call, or end a current call. Press to mute or unmute the infotainment system when not on a call.



< or > (Previous or Next): Press to go to the previous or next menu option.

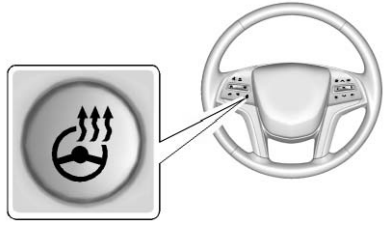
∧ or ∨ (Next or Previous): Move SEL up or down to go to the next or previous selection.

SEL (Select): Press to select a highlighted menu option.

△ or ▽ (Next or Previous Favorite): Press to go to the next or previous favorite radio station or CD/MP3 track.

+ or − (Volume): Press to increase or decrease the volume.

Heated Steering Wheel



(Heated Steering Wheel): For vehicles equipped with a heated steering wheel, press to turn on or off. A light next to the button displays when the feature is turned on.

The steering wheel takes about three minutes to start heating.

Horn

Press on the steering wheel pad to sound the horn.

Windshield Wiper/Washer

With the ignition in ACC/ACCESSORY or ON/RUN/START, move the windshield wiper lever to select the wiper speed.

HI: Use for fast wipes.

LO: Use for slow wipes.

INT: (Intermittent Wipes): Move the lever up to INT for intermittent wipes, then turn the INT band up for more frequent wipes or down for less frequent wipes.

OFF: Use to turn the wipers off.

(Mist): For a single wipe, briefly move the wiper lever down. For several wipes, hold the wiper lever down.

Clear snow and ice from the wiper blades and windshield before using them. If frozen to the windshield, carefully loosen or thaw them. Damaged blades should be replaced. See *Wiper Blade Replacement on page 10-22*.

Heavy snow or ice can overload the wiper motor.

Wiper Parking

If the ignition is put in OFF while the wipers are on LO, HI, or INT, they will immediately stop.

If the windshield wiper lever is then moved to OFF before the driver door is opened or within 10 minutes, the wipers will restart and move to the base of the windshield.

If the ignition is put in OFF while the wipers are performing wipes due to windshield washing, the wipers continue to run until they reach the base of the windshield.

Rainsense™

For vehicles with Rainsense, a sensor near the top center of the windshield detects the amount of water on the windshield and controls the frequency of the windshield wiper.

Keep this area of the windshield clear of debris to allow for best system performance.

INT (Rainsense Wipe Sensitivity Control): Move the windshield wiper lever to INT. Turn the INT band on the wiper lever to adjust the sensitivity.

- Turn the band up for more sensitivity to moisture.
- Turn the band down for less sensitivity to moisture.
- Move the windshield wiper lever out of the INT position to deactivate Rainsense.

Wiper Arm Assembly Protection

When using an automatic car wash, move the windshield wiper lever to OFF. This disables the automatic Rainsense windshield wipers.

With Rainsense, if the transmission is in N (Neutral) and the vehicle speed is very slow, the wipers will automatically stop at the base of the windshield.

The wiper operations return to normal when the transmission is no longer in N (Neutral) or the vehicle speed has increased.

↓ **(Windshield Washer):** Pull the windshield wiper lever toward you to spray windshield washer fluid and activate the wipers. The wipers will continue until the lever is released or the maximum wash time is reached. When the windshield wiper lever is released, additional wipes may occur depending on how long the windshield washer had been activated. See *Washer Fluid on page 10-17* for information on filling the windshield washer fluid reservoir.

⚠ WARNING

In freezing weather, do not use the washer until the windshield is warmed. Otherwise the washer fluid can form ice on the windshield, blocking your vision.

Compass

The vehicle may have a compass display on the Driver Information Center (DIC). The compass receives its heading and other information from the Global Positioning System (GPS) antenna, StabiliTrak®, and vehicle speed information.

The compass system is designed to operate for a certain number of miles or degrees of turn before needing a signal from the GPS satellites. When the compass display shows CAL, drive the vehicle for a short distance in an open area where it can receive a GPS signal. The compass system will automatically determine when a GPS signal is restored and provide a heading again. See *Compass Messages on page 5-36* for the messages that may be displayed for the compass.

Clock

The infotainment system controls are used to access the time and date settings through the menu system. See “Home Page” in the separate infotainment manual for information about how to use the menu system.

Setting the Time

To set the time:

1. From the Home Page, press the SETTINGS screen button and press Time and Date.
2. Press Set Time and press + or − to increase or decrease hours, minutes, and AM or PM. Press 12Hr or 24Hr for 12 or 24 hour clock.
3. Press ⬅ to go back to the previous menu.

To set the date:

1. Press the SETTINGS screen button and press Time and Date.

2. Press Set Date and press + or – to increase or decrease month, day, or year.
3. Press ⬅ to go back to the previous menu.

To set the clock display:

1. Press the SETTINGS screen button and press Time and Date.
2. Press Clock Display and press OFF or ON to turn the clock display off or on.
3. Press ⬅ to go back to the previous menu.

Power Outlets

The accessory power outlets can be used to plug in electrical equipment, such as a cell phone or MP3 player.

The vehicle has three accessory power outlets:

- Inside the front storage area below the climate control system.
- Inside the center console.
- On the rear of the center console.

Lift the cover to access the accessory power outlet.

Certain accessory power plugs may not be compatible with the accessory power outlet and could overload vehicle or adapter fuses. If a problem is experienced, see your dealer.

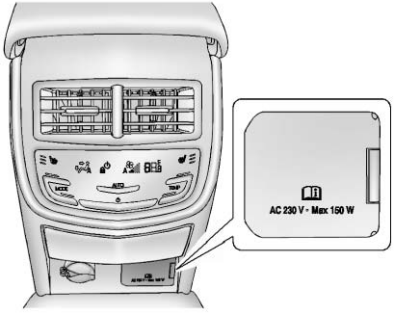
When adding electrical equipment, be sure to follow the proper installation instructions included with the equipment. See *Add-On Electrical Equipment on page 9-64*.

Notice: **Hanging heavy equipment from the power outlet can cause damage not covered by the vehicle warranty. The power outlets are designed for accessory power plugs only, such as cell phone charge cords.**

Always unplug electrical equipment when not in use and do not plug in equipment that exceeds the maximum 20 amps rating.

Power Outlet 110 Volt Alternating Current

The vehicle may have a power outlet on the rear of the center console. It can be used to plug in electrical equipment that uses a maximum limit of 150 watts.



An indicator light on the outlet turns on to show it is in use. The light comes on when the ignition is in ON/RUN and equipment requiring less than 150 watts is plugged into the outlet, and no system fault is detected.

The indicator light does not come on when the ignition is in LOCK/OFF or if the equipment is not fully seated into the outlet.

If equipment is connected using more than 150 watts or a system fault is detected, a protection circuit shuts off the power supply and the indicator light turns off. To reset the circuit, unplug the item and plug it back in or turn the Retained Accessory Power (RAP) off and then back on. See *Retained Accessory Power (RAP) on page 9-19*. The power restarts when equipment using 150 watts or less is plugged into the outlet and a system fault is not detected.

The power outlet is not designed for and may not work properly, if the following are plugged in:

- Equipment with high initial peak wattage such as: compressor-driven refrigerators and electric power tools.
- Other equipment requiring an extremely stable power supply such as: microcomputer-controlled electric blankets, touch sensor lamps, etc.

Cigarette Lighter

For vehicles with cigarette lighters, they are under the climate control system inside the storage area and on the rear of the center console.

To activate the cigarette lighter, push it into the heating element and let go. The lighter pops out when it is ready to be used.

Notice: **Holding a cigarette lighter in while it is heating does not let the lighter back away from the heating element when it is hot. Damage from overheating can occur to the lighter or heating element, or a fuse could be blown. Do not hold a cigarette lighter in while it is heating.**

Warning Lights, Gauges, and Indicators

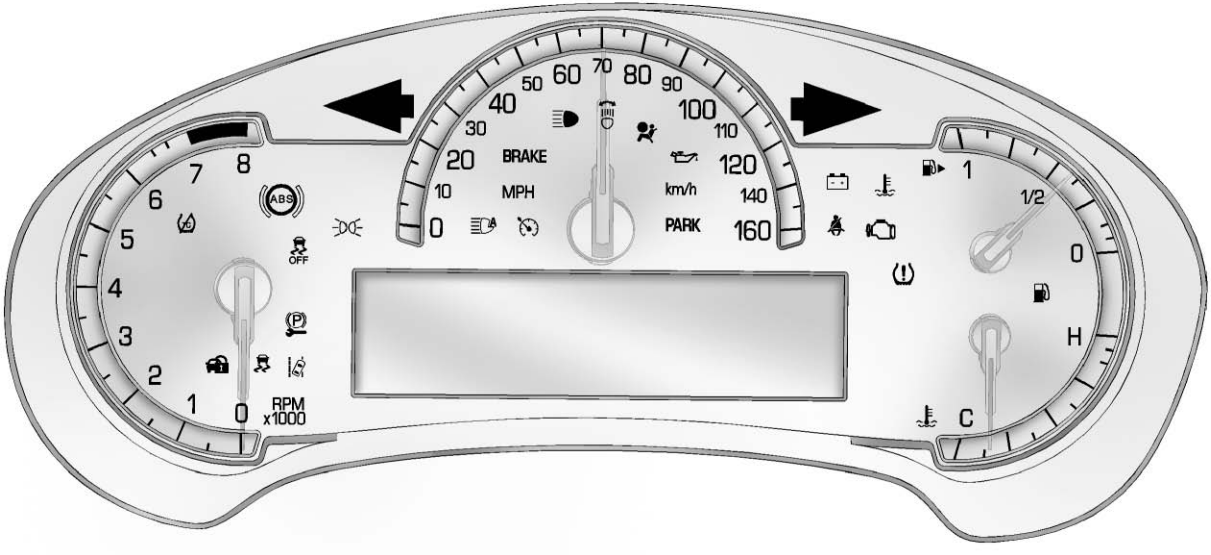
Warning lights and gauges can signal that something is wrong before it becomes serious enough to cause an expensive repair or replacement. Paying attention to the warning lights and gauges could prevent injury.

Warning lights come on when there could be a problem with a vehicle function. Some warning lights come on briefly when the engine is started to indicate they are working.

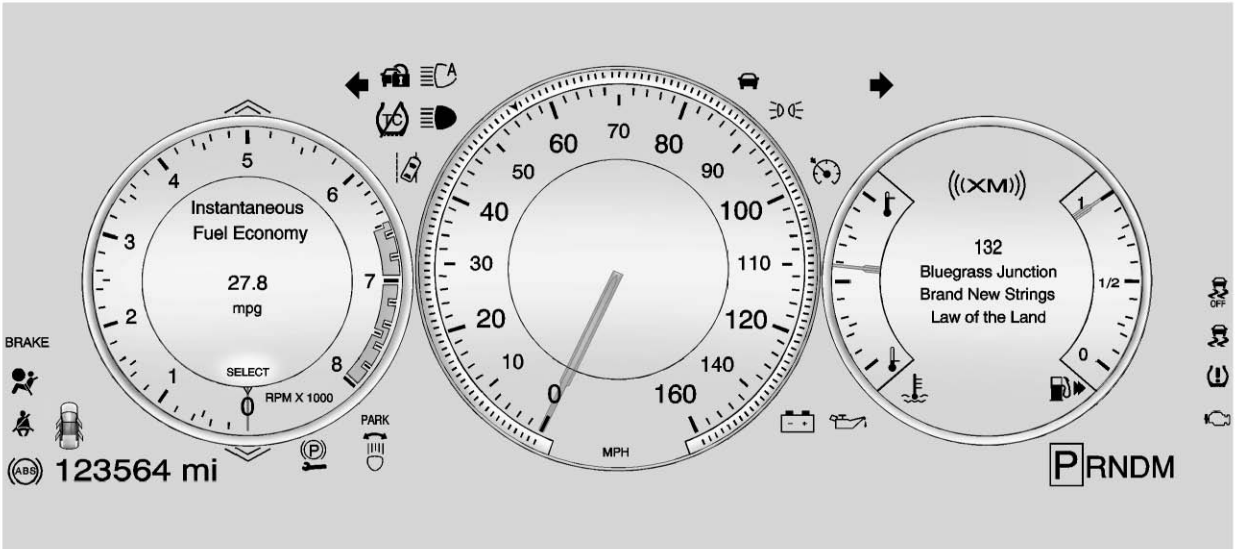
Gauges can indicate when there could be a problem with a vehicle function. Often gauges and warning lights work together to indicate a problem with the vehicle.

When one of the warning lights comes on and stays on while driving, or when one of the gauges shows there may be a problem, check the section that explains what to do. Follow this manual's advice. Waiting to do repairs can be costly and even dangerous.

Instrument Cluster



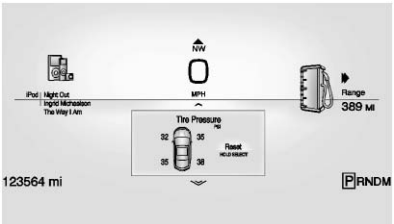
English Base Cluster Shown, Metric Similar



English Uplevel Balanced Cluster Shown, Metric Similar

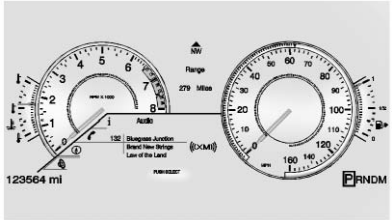
Reconfigurable Instrument Cluster

There are four uplevel instrument cluster display configurations to choose from: Simple, Performance, Balanced, or Enhanced.



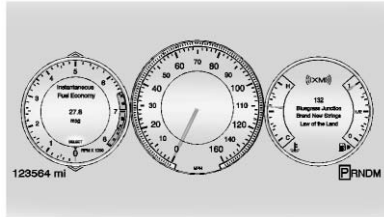
Simple Configuration

The Simple configuration has one interactive display zone in the center.



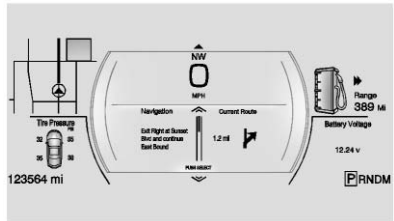
Performance Configuration

The Performance configuration has two interactive display zones: one in the center of the speedometer and one in the lower left of the cluster screen.



Balanced Configuration

The Balanced configuration has three interactive display zones: one in the center of each of the gauges.



Enhanced Configuration

The Enhanced configuration has three interactive display zones.

Use the five-way control on the right side of the steering wheel to move between the different display zones and scroll through the different displays.

To change the cluster configuration:

1. Find the Settings page in one of the interactive display zones on the cluster.
2. Press SEL to enter the Settings menu.
3. Scroll down to highlight Display Layout. Then press SEL to select it.
4. Each layout in the menu is represented by a small preview image of the display layout. Scroll up or down and highlight the selection. Press SEL to select the desired cluster configuration.
5. Exit the Display Layout menu by pressing <.

Cluster Application Displays

The cluster can display information regarding Navigation, Audio, and Phone.

Navigation

If there is no active route, a compass will be displayed. If there is an active route, press SEL to end route guidance or turn the voice prompts on or off.

Audio

While the Audio application page is displayed, press SEL to enter the Audio menu. In the Audio menu, search for music or change the audio source.

Phone

While the Phone application page is displayed, press SEL to enter the Phone menu. In the Phone menu, if there is no active phone call, view recent calls or scroll through contacts. If there is an active call, mute the phone or switch to handset operation.

Cluster Settings Menu

To enter the cluster settings menu:

1. Use the five-way control on the right side of the steering wheel to find the Settings page in one of the interactive display zones on the cluster.
2. Press SEL on the center of the five-way control to enter the Settings menu.

Units: Press SEL while Units is highlighted to enter the Unit menu. Choose English or metric units by pressing SEL while the desired item is highlighted. A checkmark will be displayed next to the selected item.

Info Pages: Press SEL while Info Pages is highlighted to select the items to be displayed in the DIC info displays. See *Driver Information Center (DIC) on page 5-28*.

Display Layout: Press SEL while Display Layout is highlighted to change the configuration of the

uplevel cluster. See “Reconfigurable Instrument Cluster” earlier in this section.

Open Source Software: Press SEL while Open Source Software is highlighted to display open source software information.

Speedometer

The speedometer shows the vehicle's speed in either kilometers per hour (km/h) or miles per hour (mph).

Odometer

The odometer shows how far the vehicle has been driven, in either kilometers or miles.

This vehicle has a tamper-resistant odometer. If the vehicle needs a new cluster installed, the new odometer is set to the mileage of the old odometer. If this is not possible, it is set at zero and a label is put on the driver door to show the old mileage reading.

Trip Odometer

The trip odometer can show how far the vehicle has been driven since the trip odometer was last reset.

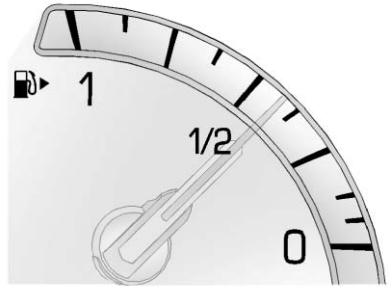
The trip odometer is accessed and reset through the Driver Information Center (DIC). See *Driver Information Center (DIC) on page 5-28*.

Tachometer

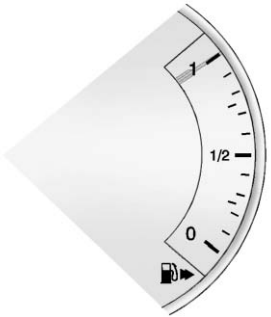
The tachometer displays the engine speed in revolutions per minute (rpm).

Notice: **If the engine is operated with the tachometer in the shaded warning area, the vehicle could be damaged, and the damages would not be covered by the vehicle warranty. Do not operate the engine with the tachometer in the shaded warning area.**

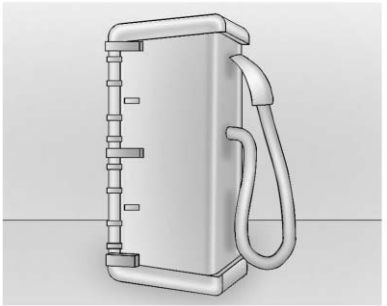
Fuel Gauge



Base Level



Uplevel Balanced Configuration, Performance Similar



Uplevel Simple and Enhanced Configurations

When the ignition is on, the fuel gauge indicates about how much fuel is left in the tank.

There is an arrow near the fuel gauge pointing to the side of the vehicle the fuel door is on.

When the indicator nears empty, the low fuel light comes on. There still is a little fuel left, but the vehicle should be refueled soon.

Here are four things that some owners ask about. None of these show a problem with the fuel gauge:

- At the service station, the fuel pump shuts off before the gauge reads full.
- It takes a little more or less fuel to fill up than the gauge indicated. For example, the gauge may have indicated the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.
- The gauge moves a little while turning a corner or speeding up.
- The gauge takes a few seconds to stabilize after the ignition is turned on, and goes back to empty when the ignition is turned off.

Engine Coolant Temperature Gauge

Metric Base Level

English Base Level

Uplevel Balanced Configuration

This gauge measures the temperature of the vehicle's engine.

While driving under normal operating conditions, if the needle moves into the shaded area, the engine is too hot. Pull off the road, stop the vehicle, and turn off the engine as soon as possible.

Safety Belt Reminders

Driver Safety Belt Reminder Light

There is a driver safety belt reminder light on the instrument cluster.

When the vehicle is started, this light flashes and a chime may come on to remind the driver to fasten their safety belt. Then the light stays

on solid until the belt is buckled. This cycle may continue several times if the driver remains or becomes unbuckled while the vehicle is moving.

If the driver safety belt is buckled, neither the chime nor the light comes on.

Passenger Safety Belt Reminder Light

There is a passenger safety belt reminder light near the passenger airbag status indicator. See *Passenger Sensing System on page 3-29*.

When the vehicle is started, this light flashes and a chime may come on to remind passengers to fasten their safety belt. Then the light stays on solid until the belt is buckled. This cycle continues several times if the passenger remains or becomes unbuckled while the vehicle is moving.

If the passenger safety belt is buckled, neither the chime nor the light comes on.

The front passenger safety belt warning light and chime may turn on if an object is put on the seat such as a briefcase, handbag, grocery bag, laptop, or other electronic device. To turn off the warning light and/or chime, remove the object from the seat or buckle the safety belt.

Airbag Readiness Light

This light shows if there is an electrical problem with the airbag system. The system check includes the airbag sensor(s), passenger sensing system, the pretensioners, the airbag modules, the wiring, and the crash sensing and diagnostic module. For more information on the airbag system, see *Airbag System on page 3-22*.

The airbag readiness light comes on for several seconds when the vehicle is started. If the light does not come on then, have it fixed immediately.

⚠ WARNING

If the airbag readiness light stays on after the vehicle is started or comes on while driving, it means the airbag system might not be working properly. The airbags in the vehicle might not inflate in a crash, or they could even inflate

(Continued)

WARNING (Continued)

without a crash. To help avoid injury, have the vehicle serviced right away.

If there is a problem with the airbag system, a Driver Information Center (DIC) message may also come on. See *Airbag System Messages on page 5-43*.

Passenger Airbag Status Indicator

The vehicle has a passenger sensing system. See *Passenger Sensing System on page 3-29* for important safety information. The passenger airbag status indicator is in the overhead console.

United States

Canada

When the vehicle is started, the passenger airbag status indicator will light ON and OFF, or the symbol for on and off, for several seconds as a system check. Then, after several more seconds, the status indicator will light either ON or OFF, or the on or off symbol, to let you know the status of the front outboard passenger frontal airbag and knee airbag.

If the word ON or the on symbol is lit on the passenger airbag status indicator, it means that the front outboard passenger frontal airbag and knee airbag are allowed to inflate.

If the word OFF or the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the front outboard passenger frontal airbag and knee airbag.

If, after several seconds, both status indicator lights remain on, or if there are no lights at all, there may be a problem with the lights or the passenger sensing system. See your dealer for service.

⚠ WARNING

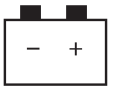
If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others,

(Continued)

WARNING (Continued)

have the vehicle serviced right away. See *Airbag Readiness Light on page 5-16* for more information, including important safety information.

Charging System Light



On some vehicles the charging system light comes on briefly when the ignition is turned on, but the engine is not running, as a check to show the light is working. It should go out when the engine is started. For vehicles with a reconfigurable cluster, this light may not come on when the ignition is turned on.

If the light stays on, or comes on while driving, there may be a problem with the electrical charging system. Have it checked by your dealer. Driving while this light is on could drain the battery.

When this light comes on, or is flashing, the Driver Information Center (DIC) also displays a message.

See *Battery Voltage and Charging Messages on page 5-35*.

If a short distance must be driven with the light on, be sure to turn off all accessories, such as the radio and air conditioner.

Malfunction Indicator Lamp

A computer system called OBD II (On-Board Diagnostics-Second Generation) monitors the operation of the vehicle to ensure emissions are at acceptable levels, helping to maintain a clean environment. The malfunction indicator lamp comes on when the vehicle is placed in Service Only Mode, as a check to show it is working. If it does not, have the vehicle serviced by your dealer. See *Ignition Positions on page 9-15*.

If the malfunction indicator lamp comes on while the engine is running, this indicates that there is an OBD II problem and diagnosis and service might be required.

Malfunctions often are indicated by the system before any problem is apparent. Being aware of the light can prevent more serious damage to the vehicle. This system also assists the service technician in correctly diagnosing any malfunction.

Notice: **If the vehicle is continually driven with this light on, the emission controls might not work as well, the vehicle fuel economy might not be as good, and the engine might not run as smoothly. This could lead to costly repairs that might not be covered by the vehicle warranty.**

Notice: **Modifications made to the engine, transmission, exhaust, intake, or fuel system of the vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect the vehicle's emission controls and can cause this light to come on. Modifications to these systems could lead to costly repairs not covered by the vehicle warranty. This could also result in a failure to pass a required Emission Inspection/ Maintenance test. See *Accessories and Modifications on page 10-3*.**

This light comes on during a malfunction in one of two ways:

Light Flashing: A misfire condition has been detected. A misfire increases vehicle emissions and could damage the emission control system on the vehicle. Diagnosis and service might be required.

To prevent more serious damage to the vehicle:

- Reduce vehicle speed.
- Avoid hard accelerations.
- Avoid steep uphill grades.
- If towing a trailer, reduce the amount of cargo being hauled as soon as it is possible.

If the light continues to flash, stop and park the vehicle. Turn the vehicle off, wait at least 10 seconds, and restart the engine. If the light is still flashing, follow the previous steps and see your dealer for service as soon as possible.

Light On Steady: An emission control system malfunction has been detected on the vehicle. Diagnosis and service might be required.

The following may correct an emission control system malfunction:

- Make sure the capless funnel adapter is removed, if fuel has been added to the vehicle using the capless funnel adapter. See “Filling the Tank With a Portable Gas Can” under *Filling the Tank on page 9-57*. The diagnostic system can detect if the adapter has been left installed in the vehicle, allowing fuel to evaporate into the atmosphere. A few driving trips with the adapter removed should turn off the light.
- Check that good quality fuel is used. Poor fuel quality causes the engine not to run as efficiently as designed and may cause stalling after start-up,

stalling when the vehicle is changed into gear, misfiring, hesitation on acceleration, or stumbling on acceleration. These conditions might go away once the engine is warmed up.

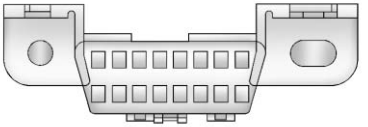
If one or more of these conditions occurs, change the fuel brand used. It may require at least one full tank of the proper fuel to turn the light off.

See *Recommended Fuel on page 9-56*.

If none of the above have made the light turn off, your dealer can check the vehicle. The dealer has the proper test equipment and diagnostic tools to fix any mechanical or electrical problems that might have developed.

Emissions Inspection and Maintenance Programs

Depending on where you live, your vehicle may be required to participate in an emission control system inspection and maintenance program. For the inspection, the emission system test equipment will likely connect to the vehicle's Data Link Connector (DLC).



The DLC is under the instrument panel to the left of the steering wheel. See your dealer if assistance is needed.

The vehicle may not pass inspection if:

- The malfunction indicator lamp is on with the engine running, or if the vehicle is placed in Service Only Mode and the malfunction indicator lamp does not come on. See your dealer for assistance in verifying proper operation of the malfunction indicator lamp.
- The OBD II (On-Board Diagnostics) system determines that critical emission control systems have not been completely diagnosed. The vehicle would be considered not ready for inspection. This can happen if the 12-volt battery has recently been replaced or run down. The diagnostic system is designed to evaluate critical emission control systems during normal driving. This can take several days of routine driving. If this has been done and the vehicle still does not pass the inspection for lack of OBD II system readiness, your dealer can prepare the vehicle for inspection.

Brake System Warning Light

The vehicle brake system consists of two hydraulic circuits. If one circuit is not working, the remaining circuit can still work to stop the vehicle. For normal braking performance, both circuits need to be working.

If the warning light comes on, there is a brake problem. Have the brake system inspected right away.

BRAKE

Metric **English**

This light comes on briefly when the vehicle is turned on. If it does not come on then, have it fixed so it will be ready to warn if there is a problem.

If the light comes on and stays on, there is a base brake problem.

> **⚠ WARNING**
>
> The brake system might not be working properly if the brake system warning light is on. Driving with the brake system warning light on can lead to a crash. If the light is still on after the vehicle has been pulled off the road and carefully stopped, have the vehicle towed for service.

Electric Parking Brake Light

PARK

Metric **English**

This light comes on when the parking brake is applied. If the light continues flashing after the parking brake is released, or while driving, there is a problem with the electric parking brake system or another system. A message may also display in the Driver Information Center (DIC). See *Brake System Messages on page 5-35*.

If the light does not come on, or remains flashing, see your dealer.

Service Electric Parking Brake Light

On some vehicles the service electric parking brake light should come on briefly when the vehicle is in ON/RUN. If it does not come on, have it fixed so it will be ready to warn if there is a problem. For

vehicles with the reconfigurable cluster, this light may not come on when the vehicle is in ON/RUN.

If this light stays on, there is a problem with a system on the vehicle that is causing the parking brake system to work at a reduced level. The vehicle can still be driven, but should be taken to a dealer as soon as possible. See *Electric Parking Brake on page 9-26*. If a message displays in the Driver Information Center (DIC), see *Brake System Messages on page 5-35*.

Antilock Brake System (ABS) Warning Light

This light comes on briefly when the engine is started.

If the light does not come on, have it fixed so it will be ready to warn if there is a problem.

If the ABS light stays on, turn the ignition off.

If the light comes on while driving, stop as soon as it is safely possible and turn off the vehicle. Then start the engine again to reset the system. If the ABS light stays on, or comes on again while driving, the vehicle needs service. A chime may also sound when the light comes on steady.

If the ABS light is the only light on, the vehicle has regular brakes, but the antilock brakes are not functioning.

If both the ABS and the brake system warning light are on, the vehicle's antilock brakes are not functioning and there is a problem with the regular brakes. See your dealer for service.

See *Brake System Warning Light on page 5-21* and *Brake System Messages on page 5-35*.

Lane Departure Warning (LDW) Light

For some vehicles with the Lane Departure Warning (LDW) system, this light briefly comes on amber while starting the vehicle. If it does not, have the vehicle serviced by your dealer. If the system is working normally, the indicator light then turns off. For vehicles with the reconfigurable cluster, this light may not come on when starting the vehicle.

This light comes on green when the system is on and ready to operate. When the system determines that

the vehicle is leaving its lane without using the turn signal, this light will change to amber and flash.

See *Lane Departure Warning (LDW) on page 9-53*.

Vehicle Ahead Indicator

For vehicles with the Forward Collision Alert (FCA) system, this light displays green when a vehicle is detected ahead. This light is located in the Driver Information Center (DIC) on vehicles with a base cluster.

This light will display amber when you are following a vehicle ahead much too closely.

See *Forward Collision Alert (FCA) System on page 9-47*.

Traction Off Light

This light comes on briefly while starting the engine. If it does not, have the vehicle serviced by your dealer. If the system is working normally, the indicator light then turns off. For vehicles with a reconfigurable cluster, this light is in the display area and it may not come on when the ignition is turned on.

The traction off light comes on when the Traction Control System (TCS) has been turned off by pressing and releasing the TCS/StabiliTrak button.

This light and the StabiliTrak OFF light come on when StabiliTrak is turned off.

If the TCS is off, wheel spin is not limited. Adjust driving accordingly.

See *Traction Control System (TCS) on page 9-28* and *StabiliTrak® System on page 9-29*.

StabiliTrak® OFF Light

This light comes on briefly while starting the engine. If it does not, have the vehicle serviced by your dealer.

This light comes on when the StabiliTrak system is turned off. If StabiliTrak is off, the Traction Control System (TCS) is also off.

If the TCS is off, the system does not assist in controlling the vehicle. Turn on the TCS and the StabiliTrak systems and the warning light turns off.

See *Traction Control System (TCS) on page 9-28* and *StabiliTrak® System on page 9-29*.

Traction Control System (TCS)/StabiliTrak® Light

The StabiliTrak or Traction Control System (TCS) indicator/warning light comes on briefly when the engine is started.

If the light does not come on, have the vehicle serviced by your dealer. If the system is working normally, the indicator light turns off.

If the light is on and not flashing, the TCS, and potentially the StabiliTrak system have been disabled. A DIC message may display. Check the DIC messages to determine which feature(s) is no longer functioning and whether the vehicle requires service.

If the indicator/warning light is on and flashing, the TCS and/or the StabiliTrak system is actively working.

See *StabiliTrak® System on page 9-29* and *Traction Control System (TCS) on page 9-28*.

Engine Coolant Temperature Warning Light

On some vehicles this light comes on briefly while starting the vehicle. If it does not, have the vehicle serviced by the dealer. If the system is working normally the indicator light goes off. For vehicles with the reconfigurable cluster, this light may not come on when starting the vehicle.

Notice: **The engine coolant temperature warning light indicates that the vehicle has overheated. Driving with this light on can damage the engine and it may not be covered by the vehicle warranty. See *Engine Overheating on page 10-14*.**

The engine coolant temperature warning light comes on when the engine has overheated.

If this happens pull over and turn off the engine as soon as possible. See *Engine Overheating on page 10-14*.

Tire Pressure Light

For vehicles with the Tire Pressure Monitor System (TPMS), this light comes on briefly when the engine is started. It provides information about tire pressures and the TPMS.

When the Light Is On Steady

This indicates that one or more of the tires are significantly underinflated.

A Driver Information Center (DIC) tire pressure message may also display. See *Tire Messages on page 5-43*. Stop as soon as possible, and inflate the tires to the pressure value shown on the Tire and Loading Information label. See *Tire Pressure on page 10-41*.

When the Light Flashes First and Then Is On Steady

If the light flashes for about a minute and then stays on, there may be a problem with the TPMS. If the problem is not corrected, the light will come on at every ignition cycle. See *Tire Pressure Monitor Operation on page 10-44*.

Engine Oil Pressure Light

Notice: **Lack of proper engine oil maintenance can damage the engine. Driving with the engine oil low can also damage the engine. The repairs would not be covered by the vehicle warranty. Check the oil level as soon as possible. Add oil if required, but if the oil level is within the operating range and the oil pressure is still low, have the vehicle serviced. Always follow the maintenance schedule for changing engine oil.**

The oil pressure light should come on briefly as the engine is started. If it does not come on, have the vehicle serviced by your dealer.

If the light comes on and stays on, it means that oil is not flowing through the engine properly. The vehicle could be low on oil and might have some other system problem. See your dealer.

Low Fuel Warning Light

This light is near the fuel gauge and comes on briefly when the ignition is turned on as a check to show it is working. For vehicles with a reconfigurable cluster, this light is in the display area and may not come on when the ignition is turned on.

It also comes on when the fuel tank is low on fuel. The light turns off when fuel is added. If it does not, have the vehicle serviced.

Security Light

On some vehicles the immobilizer light should come on briefly as the engine is started. If it does not come on, have the vehicle serviced by your dealer. If the system is working normally, the indicator light turns off. For vehicles with the reconfigurable cluster, this light may not come on when the engine is started.

If the light stays on and the engine does not start, there could be a problem with the theft-deterrent system. See *Immobilizer Operation on page 2-17*.

High-Beam On Light

This light comes on when the high-beam headlamps are in use.

See *Headlamp High/Low-Beam Changer on page 6-3*.

Automatic High-Beam Light

This light comes on when the automatic high-beam headlamps are in use.

See *Exterior Lamp Controls on page 6-1*.

Adaptive Forward Lighting (AFL) Light

This light should come on briefly as the vehicle is started. If it does not come on, have the vehicle serviced by your dealer. For vehicles with a reconfigurable cluster, this light is in the display area and may not come on when the ignition is turned on.

This light comes on solid when there is a problem with the AFL system. It flashes when the system is switching between lighting modes. See *Adaptive Forward Lighting (AFL) on page 6-5*.

Lamps On Reminder

This light comes on when the exterior lamps are in use. See *Exterior Lamp Controls on page 6-1*.

Cruise Control Light

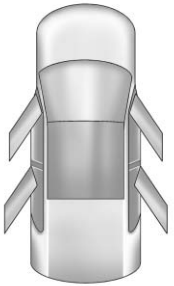
The cruise control light is white when the cruise control is on and ready, and turns green when the cruise control is set and active.

See *Cruise Control on page 9-32*.

Adaptive Cruise Control Light

This light comes on when the Adaptive Cruise Control (if equipped) is active. See *Adaptive Cruise Control on page 9-34*.

Door Ajar Light

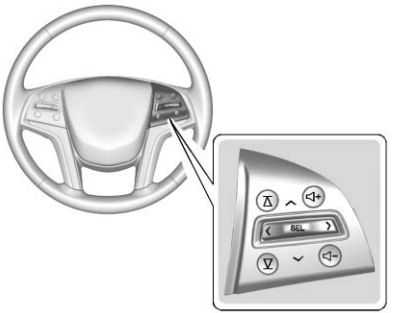


For vehicles equipped with this light, it comes on when a door is open or not securely latched. Before driving, check that all doors are properly closed. See *Door Ajar Messages on page 5-36* for more information.

Information Displays

Driver Information Center (DIC)

The DIC is displayed in the instrument cluster. It shows the status of many vehicle systems.



∧ or ∨ : Move SEL up or down to go to the previous or next selection.

< or > : Press to move between the interactive display zones in the cluster. Press < to go back to the previous menu.

SEL (Select): Press to open a menu or select a menu item. Press and hold to reset values on certain screens.

DIC Information Display Options

The info displays on the DIC can be turned on or off through the Settings menu.

1. Press SEL while viewing the Settings page in one of the interactive display zones on the cluster.
2. Scroll to Info Pages and press SEL.
3. Press ∧ or ∨ to move through the list of possible info displays.

4. Press SEL while an item is highlighted to select or deselect that item. When an item is selected, a checkmark will appear next to it.

DIC Information Displays

The following is the list of all possible DIC information displays. Some of the information displays may not be available for your particular vehicle.

Speed (Base Cluster): The digital speedometer shows the vehicle speed in either kilometers per hour (km/h) or miles per hour (mph).

Trip 1 or Trip 2 (Base Cluster) / Trip 1 or Trip 2 and Average Fuel Economy (Uplevel Cluster): The Trip display shows the current distance traveled, in either kilometers (km) or miles (mi), since the trip odometer was last reset. The trip odometer can be reset by pressing and holding SEL while this display is active.

The Average Fuel Economy display shows the approximate average liters per 100 kilometers (L/100 km) or miles per gallon (mpg). This number is calculated based on the number of L/100 km (mpg) recorded since the last time this menu item was reset. The Average Fuel Economy can be reset along with the trip odometer by pressing and holding SEL while this display is active.

Fuel Range: The Fuel Range display shows the approximate distance the vehicle can be driven without refueling. LOW will be displayed when the vehicle is low on fuel. The fuel range estimate is based on an average of the vehicle's fuel economy over recent driving history and the amount of fuel remaining in the fuel tank.

Average Fuel Economy (Base Cluster): The Average Fuel Economy display shows the approximate average liters per 100 kilometers (L/100 km) or miles per gallon (mpg). This number is calculated based on the number of L/100 km (mpg) recorded since the last time this menu item was reset. The Average Fuel Economy can be reset by pressing and holding SEL while this display is active.

Instantaneous Fuel Economy: The Instantaneous Fuel Economy display shows the current fuel economy in either liters per 100 kilometers (L/100 km) or miles per gallon (mpg). This number reflects only the fuel economy that the vehicle has right now and changes frequently as driving conditions change.

Average Speed: The Average Speed display shows the average speed of the vehicle in kilometers per hour (km/h) or miles per hour (mph). This average is calculated based on the various vehicle speeds recorded since the last reset of this value. The average speed can be reset by pressing and holding SEL while this display is active.

Timer: This display can be used as a timer. To start the timer, press SEL while this display is active. The display will show the amount of time that has passed since the timer was last reset. To stop the timer, press SEL briefly while this display is active and the timer is running. To reset the timer to zero, press and hold SEL while this display is active.

Compass: The Compass display shows the direction the vehicle is driving.

Turn Arrow: The Turn Arrow display shows the next maneuver when using route guidance.

Travel Time: The Travel Time display shows the estimated time duration remaining for the current route.

Distance to Destination: The Distance to Destination display shows the distance to the destination when using route guidance.

Speed Limit: The Speed Limit display shows the current speed limit. The information for this page comes from a roadway database.

Speed Warning: The Speed Warning display allows the driver to set a speed that they do not want to exceed. To set the Speed Warning, press SEL when Speed Warning is displayed. Press ∧ or ∨ to adjust the value. This feature can be turned off by pressing and holding SEL while viewing this page. If the selected speed limit is exceeded, a pop-up warning is displayed and a chime may sound.

Cruise Set Speed: The Cruise Set Speed display shows the speed the cruise control or Adaptive Cruise Control is set to.

Battery Voltage: The Battery Voltage display shows the current battery voltage.

Oil Life: The Oil Life display shows an estimate of the oil's remaining useful life. If REMAINING OIL LIFE 99% is displayed, that means 99% of the current oil life remains.

When the remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. See *Engine Oil Messages on page 5-37*. The oil should be changed as soon as possible. See *Engine Oil on page 10-6*. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended. See *Maintenance Schedule on page 11-3*.

Remember, the Oil Life display must be reset after each oil change. It will not reset itself. Also, be careful not to reset the Oil Life display accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, press and hold SEL for several seconds while

the Oil Life display is active. See *Engine Oil Life System on page 10-9*.

Tire Pressure: The Tire Pressure display shows the approximate pressures of all four tires. Tire pressure is displayed in either kilopascal (kPa) or in pounds per square inch (psi). If the pressure is low, the value for that tire is shown in amber. See *Tire Pressure Monitor System on page 10-43* and *Tire Pressure Monitor Operation on page 10-44*.

Maintenance Required: This display shows how many kilometers (miles) until the next maintenance is needed.

Blank Page: The Blank Page display allows for no information to be displayed in the cluster info display areas.

Head-Up Display (HUD)

⚠ WARNING

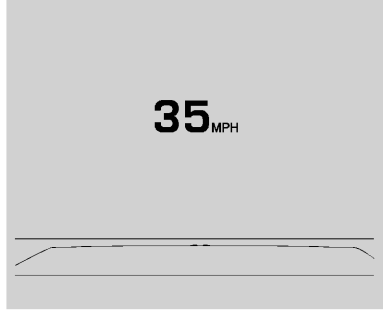
If the HUD image is too bright or too high in your field of view, it may take you more time to see things you need to see when it is dark outside. Be sure to keep the HUD image dim and placed low in your field of view.

For vehicles with HUD, some information concerning the operation of the vehicle is projected onto the windshield. The images are projected through the HUD lens on the instrument panel.

The HUD information can be displayed in various languages. The speedometer reading and other numerical values can be displayed in either English or metric units.

The language selection is changed through the radio and the units of measurement is changed through the instrument cluster.

See *Vehicle Personalization on page 5-45* and “Settings” under *Instrument Cluster on page 5-9*.



HUD Display on the Vehicle Windshield

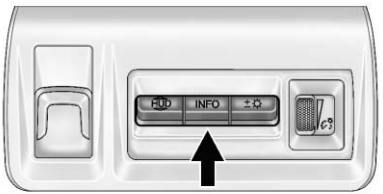
The HUD information appears as an image focused out toward the front of the vehicle.

The HUD may display different alerts and information for vehicles equipped with these features:

- Traction Control System (TCS)
- StabiliTrak System
- Collision Alert

- Gap Adjust
- Upcoming Maneuver from OnBoard Navigation
- Upcoming Maneuver from OnStar
- Incoming Call

When the HUD is on, the speedometer reading is continually displayed, except when an imminent navigation maneuver is being shown. The current audio, phone, or navigation alert temporarily displays if their status changes. This occurs if the steering wheel controls are used to adjust a setting or acknowledge an alert.



The HUD control is to the left of the steering wheel.

To adjust the HUD image:

1. Adjust the driver seat.
2. Start the engine.

Use the following settings to adjust the HUD.

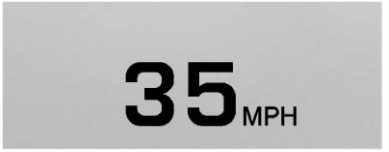
HUD **(Image Adjustment):** Press down or lift up to center the HUD image. The HUD image can only be adjusted up and down, not side to side.

INFO **(Display View):** Press to select the display view. Release when the desired display is shown on the HUD. If vehicle messages are displayed, pressing the DIC select button may clear the message. See *Driver Information Center (DIC) on page 5-28*.

± ☼ **(Brightness):** Lift up and hold to brighten the display. Press down and hold to dim the display. Hold down to turn the display off.

There are four views in the HUD display:

Metric



English

Speed View: This display gives the speedometer reading (in English or metric units), speed limit, Adaptive Cruise Control speed, Lane Departure Warning, and Vehicle Ahead indicator. Some information only appears on vehicles that have these features, and when they are active.

Metric

English

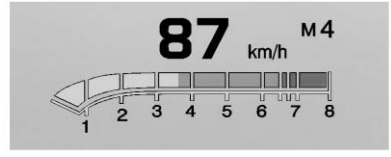
Audio/Phone View: This displays the speed view along with audio/phone information. The current radio station, media type, and incoming calls will be displayed.

Metric

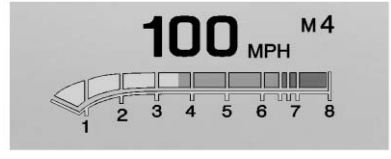
English

Navigation View: This displays the speed view along with Turn-by-Turn Navigation information. The compass heading is displayed when navigation routing is not active.

All formats will briefly show the Turn-by-Turn Navigation alerts and provide details about the next driving maneuver. When approaching the next maneuver, the HUD displays a distance bar. All navigation information is provided to the HUD by the navigation radio or OnStar (if equipped).



Metric



English

Performance View: This displays the speedometer reading, rpm reading, transmission positions, and gear shift indicator.

The HUD image will automatically dim and brighten to compensate for outside lighting. The HUD brightness control can also be adjusted as needed.

The HUD image can temporarily light up depending on the angle and position of the sunlight on the HUD display. This is normal.

Polarized sunglasses could make the HUD image harder to see.

Care of the HUD

Clean the inside of the windshield to remove any dirt or film that could reduce the sharpness or clarity of the HUD image.

Clean the HUD lens with a soft cloth sprayed with glass cleaner. Wipe the lens gently, then dry it.

HUD Troubleshooting

Check that:

- Nothing is covering the HUD lens.
- HUD brightness setting is not too dim or too bright.
- HUD is adjusted to the proper height.
- Polarized sunglasses are not worn.
- Windshield and HUD lens are clean.

If the HUD image is not correct, contact your dealer.

The windshield is part of the HUD system. See *Windshield Replacement on page 10-22*.

Vehicle Messages

Messages displayed on the DIC indicate the status of the vehicle or some action that may be needed to correct a condition. Multiple messages may display one after the other.

The messages that do not require immediate action can be acknowledged and cleared by pressing SEL. The messages that require immediate action cannot be cleared until that action is performed. All messages should be taken seriously and clearing the messages does not correct the problem.

The following are some of the vehicle messages that may be displayed depending on the vehicle content.

Battery Voltage and Charging Messages

BATTERY SAVER ACTIVE

This message displays when the vehicle has detected that the battery voltage is dropping beyond a reasonable point. The battery saver system starts reducing features of the vehicle that may be noticed. At the point that features are disabled, this message displays. Turn off unnecessary accessories to allow the battery to recharge.

LOW BATTERY

This message is displayed when the battery voltage is low. See *Battery on page 10-20*.

SERVICE BATTERY CHARGING SYSTEM

This message is displayed when there is a fault in the battery charging system. Take the vehicle to your dealer for service.

TRANSPORT MODE ON

This message is displayed when the vehicle is in transport mode. Some features can be disabled while in this mode, including Remote Keyless Entry (RKE), remote start, and the vehicle alarm system. Take the vehicle to your dealer for service to turn transport mode off.

Brake System Messages

BRAKE FLUID LOW

This message is displayed when the brake fluid level is low. See *Brake Fluid on page 10-18*.

BRAKES OVERHEATED

This message is displayed when the brakes are becoming overheated. This may be seen when driving on hills. Shift to a lower gear.

STEP ON BRAKE TO RELEASE PARK BRAKE

This message is displayed if you attempt to release the Electric Parking Brake without the brake pedal applied. See *Electric Parking Brake on page 9-26*.

RELEASE PARKING BRAKE

This message is displayed if the Electric Parking Brake is on while the vehicle is in motion. See *Electric Parking Brake on page 9-26*.

SERVICE BRAKE ASSIST

This message may be displayed when there is a problem with the brake boost assist system. The brake boost assist motor may be heard and brake pedal pulsation may be felt. This is normal under these conditions. Take the vehicle to your dealer for service.

SERVICE PARKING BRAKE

This message is displayed when there is a problem with the parking brake. Take the vehicle to your dealer for service.

Compass Messages

Dashes may be displayed if the vehicle temporarily loses communication with the Global Positioning System (GPS).

Cruise Control Messages

ADAPTIVE CRUISE SET TO XXX

This message displays when the Adaptive Cruise Control (ACC) speed is set. See *Adaptive Cruise Control on page 9-34*.

ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE

This message displays when attempting to activate Adaptive Cruise Control (ACC) when it is temporarily unavailable. The ACC system does not need service.

This can occur under the following conditions:

- The radar is not clean. Keep the radar sensors free of mud, dirt, snow, ice, and slush. Clean the entire front and/or rear of the vehicle. For cleaning instructions, see *Exterior Care on page 10-76*.
- Heavy rain or snow is interfering with the radar object detection or camera performance.

CRUISE SET TO XXX

This message displays when the cruise control speed is set. See *Cruise Control on page 9-32*.

NO CRUISE BRAKING GAS PEDAL APPLIED

This message displays when Adaptive Cruise Control (ACC) is active and the driver is pressing the gas pedal. When this occurs, ACC will not brake. See *Adaptive Cruise Control on page 9-34*.

Door Ajar Messages

DOOR OPEN

A door open symbol will be displayed on the DIC showing which door is open. If the vehicle has been shifted out of P (Park), a DOOR OPEN message will also be displayed. If the vehicle is in manual shift mode, the DOOR OPEN message will be displayed if the vehicle starts to move. Close the door completely.

HOOD OPEN

This message will display along with a hood open symbol when the hood is open. Close the hood completely.

TRUNK OPEN

This message will display along with a symbol when the trunk is open. Close the trunk completely.

Engine Cooling System Messages

A/C OFF DUE TO HIGH ENGINE TEMP

This message displays when the engine coolant becomes hotter than the normal operating temperature. To avoid added strain on a hot engine, the air conditioning compressor automatically turns off. When the coolant temperature returns to normal, the air conditioning compressor turns back on. The vehicle can continue to be driven.

If this message continues to appear, have the system repaired by your dealer as soon as possible to avoid damage to the engine.

COOLANT LEVEL LOW ADD COOLANT

This message will display if the coolant is low. See *Engine Coolant on page 10-12*.

ENGINE OVERHEATED — IDLE ENGINE

This message displays when the engine coolant temperature is too hot. Stop and allow the vehicle to idle until it cools down.

ENGINE OVERHEATED — STOP ENGINE

This message displays and a continuous chime sounds if the engine cooling system reaches unsafe temperatures for operation. Stop and turn off the vehicle as soon as it is safe to do so to avoid severe damage. This message clears when the engine has cooled to a safe operating temperature.

HIGH COOLANT TEMPERATURE

This message displays if the coolant temperature is hot. See *Engine Overheating on page 10-14*.

Engine Oil Messages

CHANGE ENGINE OIL SOON

This message displays when the engine oil needs to be changed. When you change the engine oil, be sure to reset the Oil Life System. See *Engine Oil Life System on page 10-9*, *Driver Information Center (DIC) on page 5-28*, *Engine Oil on page 10-6*, and *Maintenance Schedule on page 11-3*.

ENGINE OIL HOT, IDLE ENGINE

This message displays when the engine oil temperature is too hot. Stop and allow the vehicle to idle until it cools down.

ENGINE OIL LOW — ADD OIL

On some vehicles, this message displays when the engine oil level may be too low. Check the oil level before filling to the recommended level. If the oil is not low and this message remains on, take the vehicle to your dealer for service. See *Engine Oil on page 10-6*.

OIL PRESSURE LOW — STOP ENGINE

This message displays if low oil pressure levels occur. Stop the vehicle as soon as safely possible and do not operate it until the cause of the low oil pressure has been corrected. Check the oil as soon as possible and have the vehicle serviced by your dealer.

Engine Power Messages

ENGINE POWER IS REDUCED

This message displays when the vehicle's engine power is reduced. Reduced engine power can affect the vehicle's ability to accelerate. If this message is on, but there is no reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven at a reduced speed while this message is on, but maximum acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer for service as soon as possible.

Fuel System Messages

FUEL LEVEL LOW

This message displays when the vehicle is low on fuel. Refuel as soon as possible

Key and Lock Messages

NO REMOTE KEY WAS DETECTED PLACE KEY IN TRANSMITTER POCKET THEN START YOUR VEHICLE SEE OWNER'S MANUAL FOR DETAILS

This message displays when trying to start the vehicle if an RKE transmitter is not detected. The transmitter battery may be weak. See “Starting the Vehicle with a Low Transmitter Battery” under *Remote Keyless Entry (RKE) System Operation on page 2-3*.

NO REMOTE PRESS BRAKE TO RESTART

This message is displayed when attempting to turn off the vehicle and the remote is no longer detected. Restarting is allowed without the remote for five minutes. Press the brake pedal to restart the vehicle.

NUMBER OF KEYS PROGRAMMED

This message displays when programming new keys to the vehicle.

REMOTE LEFT IN VEHICLE

This message displays when leaving the vehicle with the RKE transmitter still inside.

REPLACE BATTERY IN REMOTE KEY

This message displays when the battery in the RKE transmitter needs to be replaced.

Lamp Messages

AFL (ADAPTIVE FORWARD LIGHTING) LAMPS NEED SERVICE

This message displays when the AFL system is disabled and needs service. See your dealer. See *Adaptive Forward Lighting (AFL) on page 6-5*.

AUTOMATIC LIGHT CONTROL ON/OFF

This message is displayed when the exterior lamp control is in AUTO and the lights have turned on or off. See *Automatic Headlamp System on page 6-4*.

XXX TURN INDICATOR FAILURE

When one of the turn signals is out, this message displays to show which bulb needs to be replaced. See *Bulb Replacement on page 10-23* and *Replacement Bulbs on page 10-25*.

TURN SIGNAL ON

This message is displayed if the turn signal has been left on. Turn off the turn signal.

Object Detection System Messages

24 GHz RADARS OFF

This message displays when driving in certain areas where there may be radar interference. Adaptive Cruise Control (ACC), Forward Collision Alert (FCA), and the Active Emergency Braking System may not work or may not work as well. The vehicle does not need service.

AUTOMATIC COLLISION PREP OFF

This message displays when the Active Emergency Braking System has been turned off. See *Active Emergency Braking System on page 9-50*.

AUTOMATIC COLLISION PREP REDUCED

This message displays when the Active Emergency Braking System has been set to the "Alert" setting.

This setting disables most automatic braking functions of the Auto Collision Preparation feature. Some last-second automatic braking capability is still provided with the "Alert" setting, but braking is less likely to occur. See *Active Emergency Braking System on page 9-50*.

AUTOMATIC COLLISION PREP UNAVAILABLE

This message displays when the Active Emergency Braking System is unavailable. The Active Emergency Braking System does not need service.

This can occur under the following conditions:

- The radar is not clean. Keep the radar sensors free of mud, dirt, snow, ice, and slush. Clean the entire front and/or rear of the vehicle. For cleaning instructions, see *Exterior Care on page 10-76*.
- Heavy rain or snow is interfering with the radar object detection or camera performance.

This message may not come on for a long time after the condition occurs, and it may require an ignition cycle to clear.

FORWARD COLLISION ALERT OFF

This message displays when the Forward Collision Alert has been turned off.

FRONT CAMERA BLOCKED CLEAN WINDSHIELD

This message displays when the camera is blocked. Cleaning the outside of the windshield behind the rearview mirror may correct the issue. The Lane Departure Warning system will not operate. Adaptive Cruise Control (ACC), Forward Collision Alert (FCA), and the Active Emergency Braking System may not work or may not work as well.

LANE DEPARTURE WARNING UNAVAILABLE

This message displays when attempting to activate the Lane Departure Warning (LDW) system when it is temporarily unavailable. The LDW system does not need service.

This message could be due to the camera being blocked. Cleaning the outside of the windshield behind the rearview mirror may correct the issue.

PARK ASSIST OFF

This message displays when the Parking Assist system has been turned off or when there is a temporary condition causing the system to be disabled.

REAR AUTO BRAKE AND PARK ASSIST UNAVAILABLE

This message displays when attempting to activate the parking and backing features of the Driver

Assistance System when they are temporarily unavailable. The system does not need service.

This can occur under the following conditions:

- The radar is not clean. Keep the radar sensors free of mud, dirt, snow, ice, and slush. Clean the entire front and/or rear of the vehicle. For cleaning instructions, see *Exterior Care on page 10-76*.
- Heavy rain or snow is interfering with the radar object detection or camera performance.

See *Driver Assistance Systems on page 9-43*.

SERVICE AUTOMATIC COLLISION PREP

If this message displays, take the vehicle to your dealer to repair the system.

SERVICE DRIVER ASSIST SYSTEM

If this message displays, take the vehicle to your dealer to repair the system.

Adaptive Cruise Control (ACC), Forward Collision Alert (FCA), Active Emergency Braking System, Assistance Systems for Parking or Backing, and/or Lane Departure Warning (LDW) system may not work. Do not use these systems until the vehicle has been repaired.

SERVICE FRONT CAMERA

If this message remains on after continued driving, the vehicle needs service. Do not use the Lane Departure Warning (LDW) and Forward Collision Alert (FCA) features. Take the vehicle to your dealer.

SERVICE PARK ASSIST

This message displays if there is a problem with the Parking Assist system. Do not use this system to help you park. See your dealer for service.

SERVICE REAR AUTO BRAKE AND PARK ASSIST

This message displays if there is a problem with the parking and backing features of the Driver Assistance System. Do not use this system to help park or back the vehicle. See your dealer for service.

SIDE BLIND ZONE ALERT OFF

This message indicates that the driver has turned the Side Blind Zone Alert (SBZA) system off.

SERVICE SIDE DETECTION SYSTEM

If this message remains on after continued driving, the vehicle needs service. Side Blind Zone Alert

(SBZA) and Rear Cross Traffic Alert (RCTA) features will not work. Take the vehicle to your dealer.

SIDE DETECTION SYSTEM UNAVAILABLE

This message indicates that Side Blind Zone Alert (SBZA) and Rear Cross Traffic Alert (RCTA) are disabled either because the sensor is blocked and cannot detect vehicles in the blind zone, or the vehicle is passing through an open area, such as the desert, where there is insufficient data for operation. This message may also activate during heavy rain or due to road spray. The vehicle does not need service. For cleaning, see "Washing the Vehicle" under *Exterior Care on page 10-76*.

Ride Control System Messages

SERVICE REAR AXLE

This message displays when there is a problem with the All-Wheel-Drive (AWD) System. See your dealer for service.

SERVICE STABILITRAK

This message displays if there is a problem with the StabiliTrak system. See *StabiliTrak® System on page 9-29*.

SERVICE SUSPENSION SYSTEM

This message displays when there is a problem with the Magnetic Ride Control system. See *Magnetic Ride Control on page 9-31*. Have the vehicle serviced by your dealer.

SERVICE TRACTION CONTROL

This message displays when there is a problem with the Traction Control System (TCS). See *Traction Control System (TCS) on page 9-28*.

TRACTION CONTROL OFF

This message displays when the Traction Control System (TCS) has been turned off. See *Traction Control System (TCS) on page 9-28*.

TRACTION CONTROL ON

This message displays when the Traction Control System (TCS) has been turned on. See *Traction Control System (TCS) on page 9-28*.

Airbag System Messages

SERVICE AIRBAG

This message displays if there is a problem with the airbag system. Take the vehicle to your dealer for service.

Security Messages

THEFT ATTEMPTED

This message displays if the vehicle detects a tamper condition.

Service Vehicle Messages

SERVICE AC SYSTEM

This message is displayed if there is a problem with the air conditioning system. Take the vehicle to your dealer for service.

SERVICE POWER STEERING

This message is displayed if there is a problem with the power steering system and a chime may sound. Take the vehicle to your dealer for service.

SERVICE VEHICLE SOON

This message is displayed if there is a problem with the vehicle. Take the vehicle to your dealer for service.

Starting the Vehicle Messages

PRESS BRAKE TO START VEHICLE

This message is displayed when attempting to start the vehicle without first pressing the brake pedal.

SERVICE KEYLESS START SYSTEM

This message is displayed if there is a problem with the pushbutton start system. Take the vehicle to your dealer for service.

Tire Messages

SERVICE TIRE MONITOR SYSTEM

This message displays if there is a problem with the Tire Pressure Monitor System (TPMS). See *Tire Pressure Monitor Operation on page 10-44*.

TIRE LEARNING ACTIVE

This message displays when the system is learning new tires. See *Tire Pressure Monitor Operation on page 10-44*.

TIRE LOW ADD AIR TO TIRE

This message displays when the pressure in one or more of the tires is low.

This message also displays LEFT FRONT, RIGHT FRONT, LEFT REAR, or RIGHT REAR to indicate the location of the low tire.

The low tire pressure warning light will also come on. See *Tire Pressure Light on page 5-25*.

If a tire pressure message appears on the DIC, stop as soon as you can. Inflate the tires by adding air until the tire pressure is equal to the values shown on the Tire and Loading Information label. See *Tires on page 10-34*, *Vehicle Load Limits on page 9-10*, and *Tire Pressure on page 10-41*.

You can receive more than one tire pressure message at a time. The DIC also shows the tire pressure values. See *Driver Information Center (DIC) on page 5-28*.

Transmission Messages

SERVICE TRANSMISSION

This message displays if there is a problem with the transmission. See your dealer.

SHIFT DENIED

This message displays when using the Driver Shift Control (DSC) and attempting to shift to a gear not appropriate for the vehicle speed and engine revolutions per minute (rpm). See *Manual Mode on page 9-24*.

SHIFT TO PARK

This message displays when the transmission needs to be shifted to P (Park). This may appear when attempting to remove the key from the vehicle if the vehicle is not in P (Park).

TRANSMISSION HOT — IDLE ENGINE

This message displays and a chime sounds if the transmission fluid in the vehicle gets hot. Driving with the transmission fluid temperature high can cause damage to the vehicle. Stop the vehicle and let it idle to allow the transmission to cool. This message clears when the fluid temperature reaches a safe level.

Vehicle Reminder Messages

ICE POSSIBLE DRIVE WITH CARE

This message displays when ice conditions are possible.

Vehicle Speed Messages

SELECTED SPEED LIMIT EXCEEDED

This message is displayed when the vehicle speed is greater than the set speed. See "Speed Warning" under *Driver Information Center (DIC) on page 5-28*.

Washer Fluid Messages

WASHER FLUID LOW ADD FLUID

This message may display when the washer fluid level is low. See *Washer Fluid on page 10-17*.

Window Messages

OPEN, THEN CLOSE DRIVER/ PASSENGER WINDOW

This message is displayed when the window needs to be reprogrammed. If the vehicle's battery has been recharged or disconnected, you will need to reprogram each front window for the express-up feature to work. See *Power Windows on page 2-20*.

Vehicle Personalization

The audio system controls are used to access the personalization menus for customizing vehicle features.

Personalization Menus

1. Press SETTINGS on the Home page on the infotainment system display.
2. Press Vehicle Settings.

The following list of menu items may be available:

- Climate and Air Quality
- Collision/Detection Systems
- Comfort and Convenience
- Lighting
- Power Door Locks
- Remote Lock, Unlock, Start

Climate and Air Quality

Select the Climate and Air Quality menu and the following may be displayed:

- Auto Fan Max Speed
- Air Quality Sensor
- Auto Compartment Zone Temp
- Auto Cooled Seats
- Auto Defog
- Auto Rear Defog

Auto Fan Max Speed

This feature will set the maximum auto fan speed.

Press Auto Fan Max Speed. Press to select Low, Medium, or High. Press ⬅ to go back to the last menu.

Air Quality Sensor

This allows for selection of air quality sensor operation at high or low sensitivity. Only vehicles with the dual automatic climate control will have this option.

Press Air Quality Sensor. Press to select Off, Low Sensitivity, or High Sensitivity. Press ⬅ to go back to the last menu.

Auto Compartment Zone Temp

This feature allows for selection of the compartment zone temperature setting when the vehicle is restarted.

Press Auto Compartment Zone Temp. Press to select Single Zone, Dual Zone, or Last Setting. Press ⬅ to go back to the last menu.

Auto Cooled Seats

When on, this feature will turn the vented seats on when using remote start on warm days.

Press Auto Cooled Seats. Press to select Off or On. Press ⬅ to go back to the last menu.

Auto Defog

When set to ON, the front defog will automatically come on when the vehicle is started. Only vehicles with the dual automatic climate control will have this option.

Press Auto Defog. Press to select Off or On. Press ⬅ to go back to the last menu.

Auto Rear Defog

If equipped, this allows the Auto Rear Defog to be turned on or off. This feature will automatically turn on the rear window defogger when it is cold outside.

Press Auto Rear Defog. Press to select Off or On. Press ⬅ to go back to the last menu.

Collision/Detection Systems

Select the Collision/Detection Systems menu and the following may be displayed if equipped:

- Alert Type
- Auto Collision Preparation

- Go Notifier
- Side Blind Zone Alert

Alert Type

This feature will set crash alerts to beeps or seat vibrations. This setting affects all crash alerts including Forward Collision, Lane Departure Warning, Adaptive Cruise Control, Parking Assist, and Backing Warning alerts.

Press Alert Type. Press to select Beeps or Safety Alert Seat. Press ⬅ to go back to the last menu.

Auto Collision Preparation

This feature will turn on or off the Forward Collision Alert feature as well as the Automatic Braking capability of the Auto Collision Preparation feature. With the "Alert and Brake" setting, both Forward Collision Alert as well as the Automatic Braking capability of the Auto Collision Preparation feature are available. The "Alert" setting disables most automatic braking functions of the Auto Collision Preparation feature. Some last-second automatic braking capability is still provided with the "Alert" setting, but it is much less likely to be triggered by most driving conditions. Off disables all Forward Collision Alert and Automatic Braking capabilities of the Auto Collision Preparation feature. See *Active Emergency Braking System on page 9-50*.

Press Auto Collision Preparation. Press to select Off, Alert & Brake, or Alert. Press ⬅ to go back to the last menu.

Go Notifier

This feature will give a reminder that Adaptive Cruise Control provides when it has brought the vehicle to a complete stop behind another stopping vehicle, and then that vehicle drives on.

Press Go Notifier. Press to select Off or On. Press ⬅ to go back to the last menu.

Side Blind Zone Alert

This allows the Side Blind Zone Alert feature to be turned on or off.

Press Side Blind Zone Alert. Press to select Off or On. Press ⬅ to go back to the last menu.

Comfort and Convenience

Select the Comfort and Convenience menu and the following will be displayed:

- Auto Memory Recall
- Easy Exit Options
- Chime Volume
- Reverse Tilt Mirror
- Personalization by Driver

Auto Memory Recall

This allows the Auto Memory Recall feature to be turned on or off.

Press Auto Memory Recall. Press to select Off, On, On - Driver Door Open, or On - At Ignition On. See *Memory Seats on page 3-7* or press ⬅ to go back to the last menu.

Easy Exit Options

This allows the Easy Exit Options feature to be turned on or off.

Press Easy Exit Options. Press to select Off or On. Press ⬅ to go back to the last menu.

Chime Volume

This allows the selection of the chime volume level.

Press Chime Volume. Press + or − to adjust the volume. Press ⬅ to go back to the last menu.

Reverse Tilt Mirror

When on, both the driver and passenger outside mirrors will tilt downward when the vehicle is shifted to R (Reverse) to improve visibility of the ground near the rear wheels. They will return to their previous driving position when the vehicle is shifted out of R (Reverse) or the ignition is turned to OFF.

Press Reverse Tilt Mirror. Press to select Off, On, On - Driver and Passenger, On - Driver or On - Passenger. Press ⬅ to go back to the last menu.

Personalization by Driver

If equipped, this allows the Personalization by Driver feature to be turned on or off.

Press Personalization by Driver. Press to select Off or On. Press ⬅ to go back to the last menu.

Language

Select the Language menu and the following will be displayed:

- English
- French
- Spanish

Press to select the language. Press ⬅ to go back to the last menu.

Lighting

Select the Lighting menu and the following will be displayed:

- Vehicle Locator Lights
- Exit Lighting
- Auto High Beam
- Daytime Tail Lights

Vehicle Locator Lights

This feature will flash the exterior lights when 🔓 on the Remote Keyless Entry (RKE) transmitter is pressed to locate the vehicle.

Press Vehicle Locator Lights. Press to select Off or On. Press ⬅ to go back to the last menu.

Exit Lighting

This allows the selection of how long the exterior lamps stay on when leaving the vehicle when it is dark outside.

Press Exit Lighting. Press to select Off, 30 Seconds, 60 Seconds, or 120 Seconds. Press ⬅ to go back to the last menu.

Auto High Beam

This allows the Auto High Beam to be turned on or off.

Press Auto High Beam. Press to select Off or On. On some vehicles select Off, Normal Sensitivity, or Low Sensitivity. Press ⬅ to go back to the last menu.

Daytime Tail Lights

This feature allows the taillamps to be on during the day.

Press Daytime Tail Lights. Press to select Off or On. Press ⬅ to go back to the last menu.

Power Door Locks

Select Power Door Locks and the following will be displayed:

- Unlocked Door Anti Lock Out
- Auto Door Unlock
- Delayed Door Lock

Unlocked Door Anti Lock Out

When on, this feature will keep the driver door from locking when the door is open. If Off is selected, the Delayed Door Lock menu will be available.

Press Unlocked Door Anti Lock Out. Press to select Off or On. Press ⬅ to go back to the last menu.

Auto Door Unlock

This allows selection of which of the doors will automatically unlock when the vehicle is shifted into P (Park).

Press Auto Door Unlock. Press to select Off, All Doors, or Driver Door. Press ⬅ to go back to the last menu.

Delayed Door Lock

When on, this feature will delay the locking of the doors. To override the delay, press the power door lock switch on the door.

Press Delayed Door Lock. Press to select Off or On. Press ⬅ to go back to the last menu.

Remote Lock, Unlock, Start

Select Remote Lock, Unlock, Start and the following may be displayed:

- Remote Unlock Light Feedback
- Remote Lock Feedback
- Remote Door Unlock
- Remote Start Auto Cool Seats
- Remote Start Auto Heat Seats
- Passive Door Unlock
- Passive Door Lock
- Remote Left in Vehicle Reminder

Remote Unlock Light Feedback

When on, the exterior lamps will flash when unlocking the vehicle with the RKE transmitter.

Press Remote Unlock Light Feedback. Press to select Off or Flash Lights. Press ⬅ to go back to the last menu.

Remote Lock Feedback

This allows selection of what type of feedback is given when locking the vehicle with the RKE transmitter.

Press Remote Lock Feedback. Press to select Off, Lights and Horn, Lights Only, or Horn Only. Press ⬅ to go back to the last menu.

Remote Door Unlock

This allows selection of which doors will unlock when pressing 🔓 on the RKE transmitter.

Press Remote Door Unlock. Press to select All Doors or Driver Door Only. Press ⬅ to go back to the last menu.

Remote Start Auto Cool Seats

If equipped and turned on, this feature will turn the vented seats on when using remote start on warm days.

Press Remote Start Auto Cool Seats. Press to select Off or On. On some vehicles select Off, On - Driver and Passenger, or On - Driver. Press ⬅ to go back to the last menu.

Remote Start Auto Heat Seats

If equipped and turned on, this feature will turn the heated seats on when using remote start on cold days.

Press Remote Start Auto Heat Seats. Press to select Off or On. On some vehicles select Off, On - Driver and Passenger, or On - Driver. Press ⬅ to go back to the last menu.

Passive Door Unlock

This allows the selection of what doors will unlock when using the button on the driver door to unlock the vehicle.

Press Passive Door Unlock. Press to select All Doors or Driver Door Only. Press ⬅ to go back to the last menu.

Passive Door Lock

This feature can be turned on or off or used to select feedback when using the button on the driver door to lock the vehicle. See *Remote Keyless Entry (RKE) System Operation on page 2-3*.

Press Passive Door Lock. Press to select On, On with Horn Chirp, or Off. Press ⬅ to go back to the last menu.

Remote Left in Vehicle Reminder

This feature sounds an alert when the RKE is left in the vehicle.

Press Remote Left in Vehicle Reminder. Press to select Off or On. Press ⬅ to go back to the last menu.

Universal Remote System

See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

Universal Remote System Programming

If the vehicle has this feature, you will see these buttons with one indicator light next to them in the overhead console.

This system provides a way to replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home automation devices.

Do not use the Universal Remote system with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1,1982.

Read the instructions completely before attempting to program the Universal Remote system. Because of the steps involved, it may be helpful to have another person available to assist with programming the Universal Remote system.

Keep the original hand-held transmitter for use in other vehicles as well as for future Universal Remote system programming. It is also recommended that upon the sale of the vehicle, the programmed Universal Remote system buttons be erased for security purposes. See “Erasing Universal Remote System Buttons” later in this section.

When programming a garage door, park outside of the garage. Park directly in line with and facing the garage door opener motor-head or gate motor-head. Be sure that people and objects are clear of the garage door or gate being programmed.

It is recommended that a new battery be installed in the hand-held transmitter for quicker and more accurate transmission of the radio-frequency signal.

Programming the Universal Remote System

For questions or help programming the Universal Remote system, call 1-800-355-3515 or go to www.homelink.com.

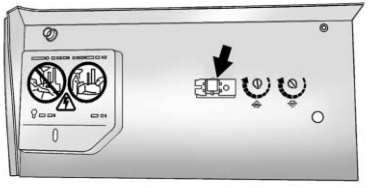
Programming a garage door opener involves time-sensitive actions, so read the entire procedure before starting. Otherwise, the device will time out and the procedure will have to be repeated.

To program up to three devices:

1. Hold the end of the hand-held transmitter about 3 to 8 cm (1 to 3 in) away from the Universal Remote system buttons while keeping the indicator light in view. The hand-held transmitter was supplied by the manufacturer of the garage door opener receiver (motor-head unit).
2. At the same time, press and hold both the hand-held transmitter button and one of the three Universal Remote system buttons to be used to operate the garage door. Do not release the Universal Remote system button or the hand-held transmitter button until the indicator light changes from a slowly to a rapidly flashing light. You now may release both buttons.

   Some entry gates and garage door openers may require substitution of Step 2 with the procedure noted in “Gate Operator and Canadian Programming” later in this section.
3. Press and hold for five seconds the newly trained Universal Remote system button (the button selected in Step 2) while observing the indicator light and garage door activation.
   - If the indicator light stays on continuously or the garage door starts to move when the Universal Remote system button is pressed and released, then the programming is complete. There is no need to continue programming Steps 4–6.
   - If the Universal Remote system indicator light blinks rapidly for two seconds, then turns to a constant light and the garage door does not move, continue with programming Steps 4–6.

     It may be helpful to have another person assist with the remaining Steps 4–6.



“Learn” or “Smart” Button

4. After Steps 1–3 have been completed, locate the “Learn” or “Smart” button inside the garage on the garage door opener receiver (motor-head unit). The name and color of the button may vary by manufacturer.
5. Firmly press and release the “Learn” or “Smart” button. After pressing this button, you will have 30 seconds to complete Step 6.
6. Immediately return to the vehicle. Firmly press and hold for two seconds the Universal Remote system button, selected in Step 2 to control the garage door, and then release it. If the garage door does not move or the lamp on the garage door opener receiver (motor-head unit) does not flash, press and hold the same button a second time for two seconds, then release it. Again, if the door does not move or the garage door lamp does not flash, press and hold the same button a third time for two seconds, then release.

The Universal Remote system should now activate the garage door.

To program the remaining two Universal Remote system buttons, begin with Step 1 of “Programming the Universal Remote System.”

Gate Operator and Canadian Programming

If you have questions or need help programming the Universal Remote system, call 1-800-355-3515 or go to www.homelink.com.

Canadian radio-frequency laws require transmitter signals to time out or quit after several seconds of transmission. This may not be long enough for the Universal Remote system to pick up the signal during programming. Similarly, some U.S. gate operators are manufactured to time out in the same manner.

If you live in Canada, or you are having difficulty programming a gate operator or garage door opener by using the “Programming the Universal Remote System” procedures, regardless of where you live, replace Step 2 under “Programming the Universal Remote System” with the following:

Continue to press and hold the Universal Remote system button while you press and release every two seconds (cycle) the hand-held transmitter button until the frequency signal has been successfully accepted by the Universal Remote system. The Universal Remote system indicator light will flash slowly at first and then

rapidly. Proceed with Step 3 under “Programming the Universal Remote System” to complete.

Universal Remote System Operation

Using the Universal Remote System

Press and hold the appropriate Universal Remote system button for at least half of a second. The indicator light will come on while the signal is being transmitted.

Erasing Universal Remote System Buttons

All programmed buttons should be erased when the vehicle is sold or the lease ends.

To erase all programmed buttons on the Universal Remote system device:

1. Press and hold down the two outside buttons until the indicator light begins to flash. This should take about 10 seconds.
2. Release both buttons.

Reprogramming a Single Universal Remote System Button

To reprogram any of the three Universal Remote system buttons:

1. Press and hold the desired Universal Remote system button. Do not release the button.
2. The indicator light will begin to flash after 20 seconds. Without releasing the button, proceed with Step 1 under “Programming the Universal Remote System.”

If you have questions or need help programming the Universal Remote system, call 1-800-355-3515 or go to www.homelink.com. You may also call the customer assistance phone number under *Customer Assistance Offices on page 13-3*.

Lighting

Exterior Lighting
Exterior Lamp Controls 6-1
Exterior Lamps Off Reminder 6-3
Headlamp High/Low-Beam Changer 6-3
Flash-to-Pass 6-4
Daytime Running Lamps (DRL) 6-4
Automatic Headlamp System 6-4
Adaptive Forward Lighting (AFL) 6-5
Headlamp Leveling Control . . . 6-5
Hazard Warning Flashers 6-5
Turn and Lane-Change Signals 6-6

Interior Lighting
Instrument Panel Illumination Control 6-6
Courtesy Lamps 6-7
Dome Lamps 6-7
Reading Lamps 6-7

Lighting Features
Entry Lighting 6-8
Exit Lighting 6-8
Battery Power Protection 6-9
Exterior Lighting Battery Saver 6-9

Exterior Lighting

Exterior Lamp Controls

The exterior lamp control is on the turn signal lever.

Turn the control to the following positions:

⏻ **(Off):** Turns off the exterior lamps. The knob returns to the AUTO position after it is released.

Turn to ⏻ again to reactivate the AUTO mode.

In Canada, the headlamps will automatically reactivate when the vehicle is shifted out of P (Park).

AUTO (Automatic): Automatically turns the exterior lamps on and off, depending on outside lighting.

(Parking Lamps): Turns on the parking lamps together with the following:

- Sidemarker Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights

(Headlamps): Turns on the headlamps together with the following:

- Sidemarker Lamps
- Taillamps
- License Plate Lamps
- Instrument Panel Lights
- Parking Lamps

Automatic High-Beam System

This system turns the vehicle's high-beam headlamps on and off according to surrounding traffic conditions.

The system turns the high-beam headlamps on when it is dark enough and there is no other traffic present.

This light comes on in the instrument cluster when the automatic high-beam system is enabled.

Turning On and Enabling Automatic High Beams

To enable the automatic high-beam system, with the turn signal lever in the neutral position, turn the exterior lamp control to AUTO. The blue high-beam on light appears on the instrument cluster when the high beams are on.

Driving with Automatic High Beams

The system only activates the high beams when driving over 40 km/h (25 mph).

There is a sensor near the top center of the windshield that automatically controls the system. Keep this area of the windshield clear of debris to allow for best system performance.

The high-beam headlamps remain on, under the automatic control, until one of the following situations occur:

- The system detects an approaching vehicle's headlamps.
- The system detects a preceding vehicle's taillamps.
- The outside light is bright enough that high-beam headlamps are not required.
- The vehicle's speed drops below 20 km/h (12 mph).

- The automatic high-beam system can be disabled by the high/low-beam changer or the flash-to-pass feature. If this happens, the high/low-beam changer must be activated two times within five seconds to reactivate the automatic high-beam system. The instrument cluster light will come on to indicate the automatic high-beam system is reactivated. See *Headlamp High/Low-Beam Changer on page 6-3* and *Flash-to-Pass on page 6-4*.

The high beams may not turn off automatically if the system cannot detect another vehicle's lamps because of any of the following:

- The other vehicle's lamps are missing, damaged, obstructed from view, or otherwise undetected.
- The other vehicle's lamps are covered with dirt, snow, and/or road spray.
- The other vehicle's lamps cannot be detected due to dense exhaust, smoke, fog, snow, road spray, mist, or other airborne obstructions.
- The vehicle's windshield is dirty, cracked, or obstructed by something that blocks the view of the light sensor.
- The vehicle is loaded such that the front end points upward, causing the light sensor to aim high and not detect headlamps and taillamps.
- Driving on winding or hilly roads.

The automatic high-beam headlamps may need to be disabled if any of the above conditions exist.

This feature can be turned on or off or the sensitivity can be changed in vehicle personalization. See *Vehicle Personalization on page 5-45*.

Exterior Lamps Off Reminder

A warning chime sounds if the driver door is opened while the ignition is off and the exterior lamps are on.

Headlamp High/ Low-Beam Changer

(Headlamp High/Low-Beam Changer): Push the turn signal lever away from you and release, to turn the high beams on. To return to low beams, push the lever again or pull it toward you and release.

This indicator light turns on in the instrument cluster when the high-beam headlamps are on.

Flash-to-Pass

To flash the high beams, pull the turn signal lever toward you, and release.

Daytime Running Lamps (DRL)

Daytime Running Lamps (DRL) can make it easier for others to see the front of your vehicle during the day. Fully functional daytime running lamps are required on all vehicles first sold in Canada.

For vehicles with High Intensity Discharge (HID) headlamps, the dedicated DRL will come on when all of the following conditions are met:

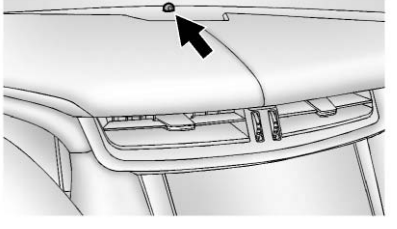
- The ignition is on.
- The exterior lamp control is in AUTO.
- The light sensor determines it is daytime.
- The vehicle is not in P (Park).

When the DRL are on, the taillamps, sidemarker lamps, and other lamps will not be on.

The DRL turn off when the headlamps are turned to ⏻ or the ignition is off.

Automatic Headlamp System

When the exterior lamp control is set to AUTO and it is dark enough outside, the headlamps come on automatically.



There is a light sensor on top of the instrument panel. Do not cover the sensor.

The system may also turn on the headlamps when driving through a parking garage or tunnel.

When it is bright enough outside, the headlamps will turn off or may change to Daytime Running Lamps (DRL).

The automatic headlamp system turns off when the exterior lamp control is turned to ⏻ or the ignition is off.

For vehicles sold in Canada, this control only works when the transmission is in P (Park).

Lights On with Wipers

If the windshield wipers are activated in daylight with the engine on, and the exterior lamp control is in AUTO, the headlamps, parking lamps, and other exterior lamps come on. The transition time for the lamps coming on varies based on wiper speed. When the wipers are not operating, these lamps turn off.

Move the exterior lamp control to ⏻ or ≡DO≡ to disable this feature.

Adaptive Forward Lighting (AFL)

For vehicles with uplevel headlamps, the AFL system adjusts the headlamps to provide greater road illumination in various driving conditions.

To enable AFL, set the exterior lamp control to the AUTO position. Moving the control out of the AUTO position will deactivate the system. AFL will operate when the vehicle speed is greater than 3 km/h (2 mph). AFL will not operate when the transmission is in R (Reverse). AFL is not immediately operable after starting the vehicle; driving a short distance is required to calibrate the AFL. See *Exterior Lamp Controls on page 6-1*.

Curve Lighting

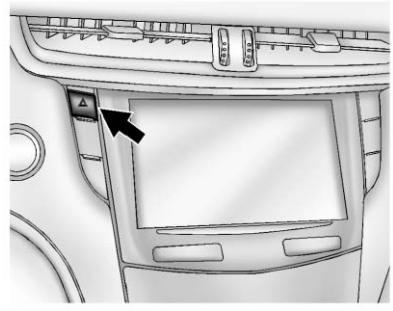
The light beam pivots based on the steering wheel position and vehicle speed of at least 10 km/h (6 mph). The headlamps shine at an angle of up to 15 degrees to the right or left of the direction of travel.

Headlamp Leveling Control

Automatic Headlamp Leveling

For vehicles with headlamp leveling, the range of the headlamps is adjusted automatically based on vehicle load.

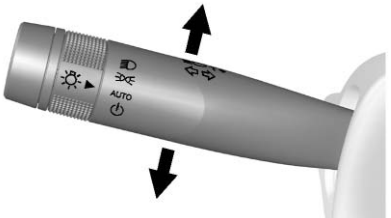
Hazard Warning Flashers



⚠ **(Hazard Warning Flashers):** Press this button on the center stack to make the front and rear turn signal lamps flash on and off. Press again to turn the flashers off.

The hazard warning flashers turn on automatically if the airbags deploy.

Turn and Lane-Change Signals



Move the lever all the way up or down to signal a turn.

An arrow on the instrument cluster flashes in the direction of the turn or lane change.

Raise or lower the lever until the arrow starts to flash to signal a lane change. Hold it there until the lane change is completed. If the lever is briefly pressed and released, the turn signal flashes three times.

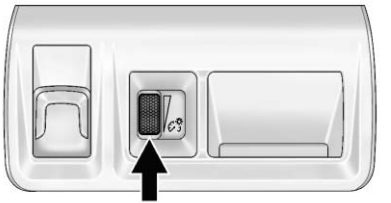
The turn and lane-change signal can be turned off manually by moving the lever back to its original position.

If after signaling a turn or lane change, the arrow flashes rapidly or does not come on, a signal bulb may be burned out.

Replace any burned out bulbs. If a bulb is not burned out, check the fuse. See *Fuses and Circuit Breakers on page 10-26*.

Interior Lighting

Instrument Panel Illumination Control



The brightness of the instrument panel lighting and steering wheel controls can be adjusted.

(Instrument Panel Illumination): Move the thumbwheel up or down to brighten or dim the lights.

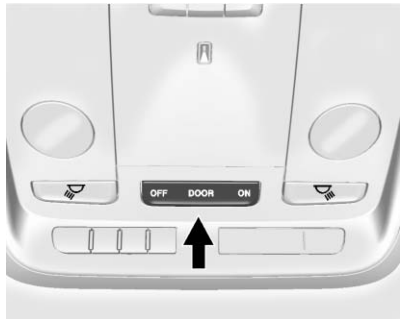
The brightness of the displays automatically adjusts based on outdoor lighting. The instrument panel illumination control will set the lowest level to which the displays will automatically be adjusted.

Courtesy Lamps

The courtesy lamps come on when any door is opened and the dome lamp is in the DOOR position.

Dome Lamps

The dome lamp is in the overhead console.



To change the dome lamp settings, press:

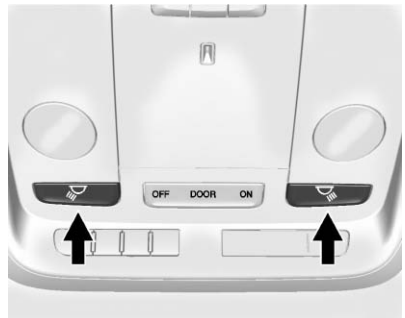
OFF: Turns the lamp off, even when a door is open.

DOOR: The lamp comes on when a door is opened.

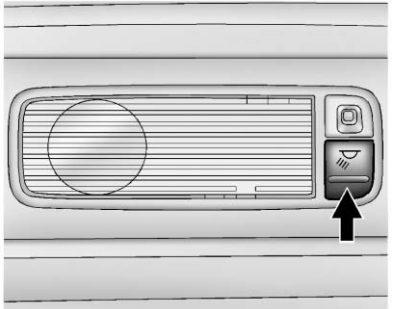
ON: Turns the lamp on.

Reading Lamps

There are reading lamps on the overhead console and over the rear passenger doors. These lamps come on automatically when any door is opened. To manually turn the reading lamps on or off:



Press or next to each overhead console reading lamp.



Press the button near the rear passenger reading lamps.

Lighting Features

Entry Lighting

The headlamps, taillamps, license plate lamps, back-up lamps, outside mirror lamps, exterior door handle lamps, dome lamp, and most of the interior lights turn on briefly when 🔓 is pressed on the Remote Keyless Entry (RKE) transmitter. See *Remote Keyless Entry (RKE) System Operation on page 2-3*. When the driver door is opened, all control lights, Driver Information Center (DIC) lights, and door pocket lights turn on. After about 30 seconds the exterior lamps turn off, then the dome lamp and remaining interior lights dim to off. Entry lighting can be disabled manually by changing the ignition out of the OFF position, or by pressing 🔒 on the RKE transmitter.

This feature can be changed. See "Vehicle Locator Lights" under *Vehicle Personalization on page 5-45*.

Exit Lighting

The headlamps, taillamps, parking lamps, back-up lamps, outside mirror lamps, license plate lamps, and exterior door handle lamps come on at night, or in areas with limited lighting, when a door is opened after the ignition is turned off. The dome lamp comes on after the ignition is changed to the OFF position. The exterior lamps and dome lamp remain on after the door is closed for a set amount of time, then automatically turn off.

The exterior lamps turn off immediately by turning the exterior lamp control off.

This feature can be changed. See *Vehicle Personalization on page 5-45*.

Battery Power Protection

The battery saver feature is designed to protect the vehicle's battery.

If some interior lamps are left on and the ignition is turned off, the battery rundown protection system automatically turns the lamp off after some time.

Exterior Lighting Battery Saver

The exterior lamps turn off about 10 minutes after the ignition is turned off, if the parking lamps or headlamps have been manually left on. This protects against draining the battery. To restart the 10-minute timer, turn the exterior lamp control to the off position and then back to the parking lamp or headlamp position.

To keep the lamps on for more than 10 minutes, the ignition must be in the ACC/ACCESSORY or ON/RUN position.

✍ NOTES

Infotainment System

Introduction
Infotainment 7-1

Introduction

Infotainment

See the separate infotainment manual for information on the radio, audio players, phone, navigation system, and voice or speech recognition. It also includes information on settings and downloadable applications (if equipped).

✍ NOTES

Climate Controls

Climate Control Systems
Dual Automatic Climate Control System (Uplevel) 8-1
Dual Automatic Climate Control System (Base) 8-6
Rear Climate Control System 8-9

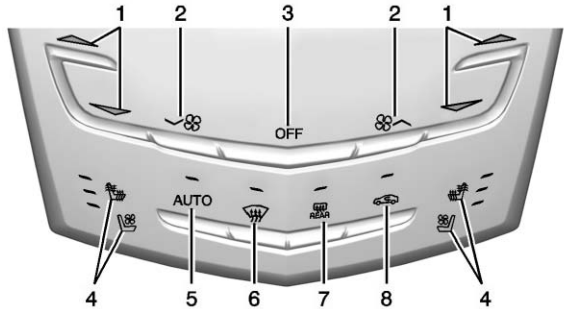
Air Vents
Air Vents 8-11

Maintenance
Passenger Compartment Air Filter 8-12
Service 8-12

Climate Control Systems

Dual Automatic Climate Control System (Uplevel)

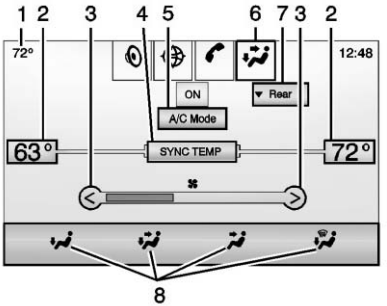
The climate control buttons and the touch screen are used to adjust the heating, cooling, and ventilation.



Climate Control Buttons

1. Driver and Passenger Temperature Controls
2. Fan Control
3. OFF (Fan)
4. Driver and Passenger Heated and Ventilated Seats (If Equipped)
5. AUTO (Automatic Operation)
6. Defrost
7. Rear Window Defogger

8. Recirculation



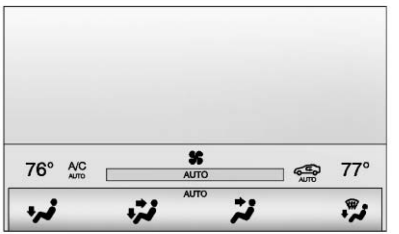
Climate Touch Screen Controls

1. Outside Temperature Display
2. Driver and Passenger Temperature Displays
3. Fan Control
4. SYNC TEMP (Synchronized Temperature)
5. A/C Mode (Air Conditioning)
6. Climate Control Selection (Application Tray Button)
7. Rear (Rear Climate Control Touch Screen)
8. Air Delivery Mode Control

Climate Control Touch Screen

The fan, air delivery mode, air conditioning, and SYNC settings can be controlled by pressing CLIMATE on the infotainment home screen or the climate button in the touch screen application tray. A selection can then be made on the front climate control page displayed. See the infotainment manual.

Climate Control Status Screen



The climate control status screen appears briefly when the climate control buttons on the faceplate are adjusted. The air delivery mode can be adjusted on the climate control status screen.

Automatic Operation

The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.

When the indicator light is on or AUTO is displayed on the touch screen, the system is in full automatic operation. If the air delivery mode or fan setting is manually adjusted, the auto indicator turns off and the display will show the selected settings. Auto operation can be turned off individually for climate settings.

For automatic operation:

1. Press AUTO.

2. Set the temperature. Allow the system time to stabilize. Then adjust the temperature as needed for best comfort.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather. The recirculation light will not come on. Press to select recirculation; press it again to select outside air.

English units can be changed to metric units through the instrument cluster. See “Settings” under *Instrument Cluster on page 5-9*.

OFF (Fan): Press to turn the fan on or off. The temperature control and air delivery mode can still be adjusted.

△ / ▽ (Driver and Passenger Temperature Controls): The temperature can be adjusted separately for the driver and the passenger. Press to increase or decrease the temperature. Press and hold to rapidly increase or decrease the temperature.

SYNC TEMP (Synchronized Temperature): Press SYNC TEMP on the touch screen to link all climate zone settings to the driver settings. Adjust the driver side temperature control to change the linked temperature. When the passenger settings are adjusted, the SYNC TEMP button is displayed when the temperatures are unlinked.

Rear (If Equipped): Press this button on the front climate control touch screen to open the rear climate control screen. The rear climate control settings can now be adjusted from the front passenger area.

Manual Operation

∨ ∧ (Fan Control): Press the fan control buttons or the touch screen fan control, to increase or decrease the fan speed. Press and hold the buttons or the touch screen control to adjust speed more quickly. The fan speed setting displays. Pressing either button cancels automatic fan control and the fan can be controlled manually. Press AUTO to return to automatic operation. To turn off the fan and climate control system, press and hold the fan down button or touch screen fan control until it is off.

Air Delivery Mode Control: When the climate information is displayed, press the desired air delivery mode on the touch screen to change the direction of the airflow. The selected air delivery mode button is lit. Pressing any of the air delivery buttons cancels automatic air delivery control and the direction of the airflow can be controlled manually. Press AUTO to return to automatic operation.

To change the current mode, select one of the following:

(Vent): Air is directed to the instrument panel outlets.

(Bi-Level): Air is divided between the instrument panel outlets and the floor outlets.

(Floor): Air is directed to the floor outlets.

(Defog): Clears the windows of fog or moisture. Air is directed to the windshield and floor outlets.

(Defrost): Clears the windshield of fog or frost more quickly. Air is directed to the windshield. Press the button to turn on or off. Changing the air delivery mode also turns the defrost off.

(Air Conditioning): Press the AC Mode touch screen control to turn the automatic air conditioning on or off. If the fan is turned off or the outside temperature falls below freezing, the air conditioner will not run.

Press AUTO to return to automatic operation and the air conditioner runs as needed.

Automatic Air Recirculation: When the AUTO indicator light is on, the air is automatically recirculated as needed to help quickly cool the inside of the vehicle.

The climate control system may have a sensor to detect air pollution. When using automatic air recirculation, the air quality control system may operate. To adjust the sensitivity of the air quality sensor, see “Climate and Air Quality” under *Vehicle Personalization on page 5-45*.

(Recirculation): Press to alternate between recirculating air inside the vehicle or pulling in outside air. The indicator light on the button is lit when recirculation mode is active. This helps to quickly cool the air inside the vehicle or prevent outside air and odors from entering.

Pressing this button cancels automatic recirculation. Press AUTO to return to automatic operation; recirculation runs automatically as needed.

Manual recirculation mode is not available when in Defrost or Defog modes.

Auto Defog: The climate control system may have a sensor to automatically detect high humidity inside the vehicle. When high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner. If the climate control system does not detect possible window fogging, it returns to normal operation. To turn Auto Defog off or on, see “Climate and Air Quality” under *Vehicle Personalization on page 5-45*.

Rear Window Defogger

(Rear Window Defogger): Press to turn the rear window defogger on or off.

The rear window defogger turns off automatically after about 10 minutes. If turned on again, it runs for about five minutes before

turning off. At higher vehicle speeds, the rear window defogger may stay on continuously.

The rear window defogger can be set to automatic operation. See “Climate and Air Quality” under *Vehicle Personalization on page 5-45*. When Auto Rear Defog is selected, the rear window defogger turns on automatically when the interior temperature is cold and the outside temperature is about 4°C (40°F) and below. The auto rear defogger turns off automatically after about 10 minutes. At higher vehicle speeds, the rear window defogger may stay on continuously.

The upper region of gridlines on the rear window are antenna lines and are not intended to heat when the defogger is activated.

The heated outside rearview mirrors turn on when the rear window defogger button is on and help to clear fog or frost from the surface of the mirrors.

Notice: **Do not try to clear frost or other material from the inside of the front windshield and rear window with a razor blade or anything else that is sharp. This may damage the rear window defogger grid and affect the radio's ability to pick up stations clearly. The repairs would not be covered by the vehicle warranty.**

Driver and Passenger Heated and Ventilated Seats (If Equipped): Press or to heat the driver or passenger seat cushion and seatback.

Press or to ventilate the driver or passenger seat. See *Heated and Ventilated Seats on page 1-8*.

Remote Start Climate Control Operation: For vehicles with the remote start feature, the climate control system may run when the vehicle is started remotely. The system uses the driver’s previous settings to heat or cool the inside of the vehicle. The rear defog may come on during remote start based on cold ambient conditions. The rear defog indicator light does not come on during a remote start. If the vehicle has heated or ventilated seats, they may come on during a remote start. See *Remote Vehicle Start on page 2-8* and *Heated and Ventilated Seats on page 1-8*.

Sensor

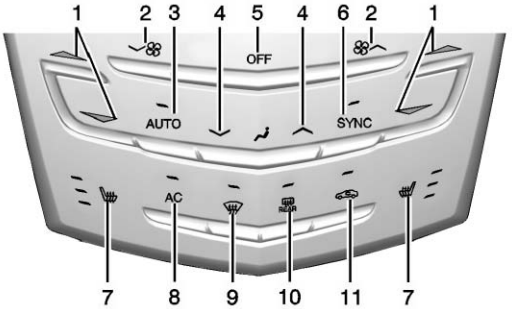
The solar sensor, on top of the instrument panel near the windshield, monitors the solar heat.

The climate control system uses the sensor information to adjust the temperature, fan speed, recirculation, and air delivery mode for best comfort.

If the sensor is covered, the automatic climate control system may not work properly.

Dual Automatic Climate Control System (Base)

For vehicles with this system, it controls the heating, cooling, and ventilation.



1. Driver and Passenger Temperature Controls
2. Fan Control
3. AUTO (Automatic Operation)
4. Air Delivery Mode Control
5. OFF (Fan)
6. SYNC (Synchronized Temperature)
7. Driver and Passenger Heated Seats (If Equipped)
8. AC (Air Conditioning)
9. Defrost
10. Rear Window Defogger
11. Recirculation

Automatic Operation

The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.

When the indicator light is on or AUTO is displayed on the touch screen, the system is in full automatic operation. If the air delivery mode or fan setting is manually adjusted, the auto indicator turns off and the display will show the selected settings.

For automatic operation:

1. Press AUTO.
2. Set the temperature. Allow the system time to stabilize. Then adjust the temperature as needed for best comfort.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather. The recirculation

light will not come on. Press to select recirculation; press it again to select outside air.

English units can be changed to metric units through the instrument cluster. See “Settings” under *Instrument Cluster on page 5-9*.

OFF (Fan): Press to turn the fan on or off. The temperature control and air delivery mode can still be adjusted.

△ / ▽ (Driver and Passenger Temperature Controls): The temperature can be adjusted separately for the driver and the passenger. Press to increase or decrease the temperature. Press and hold to rapidly increase or decrease the temperature.

SYNC (Synchronized Temperature): Press SYNC to link all climate zone settings to the driver settings. Adjust the driver side temperature control to change the linked temperature. When the passenger settings are adjusted, the SYNC button is displayed when the temperatures are unlinked.

Manual Operation

∨ or ∧ (Fan Control): Press the fan control buttons to increase or decrease the fan speed. Press and hold the buttons to adjust speed more quickly. The fan speed setting displays. Pressing either button cancels automatic fan control and the fan can be controlled manually. Press AUTO to return to automatic operation. To turn off the fan and climate control system, press and hold the fan down button.

∨ ∧ (Air Delivery Mode Control): Press the air delivery mode buttons to change the direction of the airflow. Selecting any of the air delivery modes cancels automatic air delivery control and the direction of the airflow can be controlled manually. Press AUTO to return to automatic operation.

To change the current mode, select one of the following:

(Vent): Air is directed to the instrument panel outlets.

(Bi-Level): Air is divided between the instrument panel outlets and the floor outlets.

(Floor): Air is directed to the floor outlets.

(Defog): Clears the windows of fog or moisture. Air is directed to the windshield and floor outlets.

(Defrost): Clears the windshield of fog or frost more quickly. Air is directed to the windshield. Press the button to turn on or off.

A/C (Air Conditioning): Press to turn the automatic air conditioning on or off. If the fan is turned off or the outside temperature falls below freezing, the air conditioner will not run.

Press AUTO to return to automatic operation and the air conditioner runs as needed. When the indicator light is on, the air conditioner runs automatically to cool the air inside the vehicle or to dry the air needed to defog the windshield faster.

Automatic Air Recirculation: When the AUTO indicator light is on, the air is automatically recirculated as needed to help quickly cool the inside of the vehicle.

(Recirculation): Press to alternate between recirculating air inside the vehicle or pulling in outside air. The indicator light on the button is lit when recirculation mode is active. This helps to quickly cool the air inside the vehicle or prevent outside air and odors from entering.

Pressing this button cancels automatic recirculation. Press AUTO to return to automatic operation; recirculation runs automatically as needed.

Manual recirculation mode is not available when in Defrost or Defog modes.

Auto Defog: The climate control system may have a sensor to automatically detect high humidity inside the vehicle. When high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner. If the climate control system does not detect possible window fogging, it returns to normal operation. To turn Auto Defog off or on, see “Climate and Air Quality” under *Vehicle Personalization on page 5-45*.

Rear Window Defogger

REAR (Rear Window Defogger): Press to turn the rear window defogger on or off.

The rear window defogger turns off automatically after about 10 minutes. If turned on again it runs for about five minutes before turning off. At higher vehicle speeds, the rear window defogger may stay on continuously.

The rear window defogger can be set to automatic operation. See “Climate and Air Quality” under *Vehicle Personalization on page 5-45*. When Auto Rear Defog is selected, the rear window defogger turns on automatically when the interior temperature is cold and the outside temperature is about 4°C (40°F) and below. The auto rear defogger turns off automatically after about 10 minutes. At higher vehicle speeds, the rear window defogger may stay on continuously.

The upper region of gridlines on the rear window are antenna lines and are not intended to heat when the defogger is activated.

The heated outside mirrors turn on when the rear window defogger button is on. They help to clear fog or frost from the surface of the mirrors.

Notice: **Do not try to clear frost or other material from the inside of the front windshield and rear window with a razor blade or anything else that is sharp. This may damage the rear window defogger grid and affect the radio's ability to pick up stations clearly. The repairs would not be covered by the vehicle warranty.**

Driver and Passenger Heated Seats (If Equipped): Press or to heat the driver or passenger seat. See *Heated and Ventilated Front Seats on page 3-9*.

Remote Start Climate Control Operation: For vehicles with the remote vehicle start feature, the climate control system may run when the vehicle is started remotely. The system uses the driver's previous settings to heat or cool the inside of the vehicle. See *Remote Vehicle Start on page 2-8*.

The rear window defogger turns on if it is cold outside.

Sensors

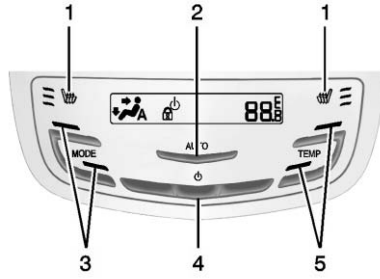
The solar sensor, on top of the instrument panel near the windshield, monitors the solar heat.

The climate control system uses the sensor information to adjust the temperature, fan speed, recirculation, and air delivery mode for best comfort.

If the sensor is covered, the automatic climate control system may not work properly.

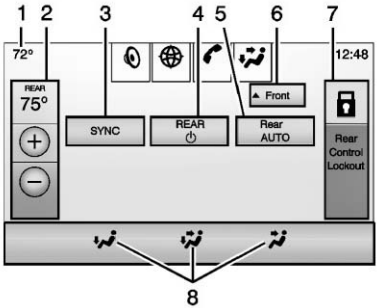
Rear Climate Control System

For vehicles with a rear climate control system, the settings can be adjusted with the rear climate control buttons and the touch screen.



Rear Climate Control Buttons

1. Heated Rear Seats (If Equipped)
2. AUTO (Automatic Operation)
3. MODE (Air Delivery Mode Control)
4. ⏻ (On/Off)
5. TEMP (Temperature Control)



Rear Climate Touch Screen Controls

1. Outside Temperature Display
2. Rear Climate Temperature Control
3. SYNC (Synchronized Temperatures)
4. REAR ⏻ (On/Off)
5. Rear AUTO (Automatic Operation)
6. Front (Front Climate Control Touch Screen)
7. Rear Control Lockout
8. Air Delivery Mode Control

Rear: Press this button on the front climate control touch screen to open the rear climate control screen. The rear climate control settings can now be adjusted from the front passenger area.

⏻ (On/Off): Press the ⏻ button or REAR⏻ on the touch screen to turn the rear climate control on or off. If the rear climate control is turned off using REAR⏻ on the touch screen, the ⏻ button on the rear climate control faceplate must be pressed twice to turn the system back on.

SYNC: Press SYNC on the touch screen to match the rear climate control temperature to the front climate control driver temperature. The SYNC button will be lit. Press the TEMP, MODE or AUTO button twice to unlink the set driver and rear temperatures. The SYNC button turns off.

Rear Control Lockout: Press to lock or unlock control of the rear climate control system from the rear seat passengers. When locked, the rear climate control can only be adjusted from the front seat.

Automatic Operation

Rear AUTO: Press to turn on or off. The air delivery and fan speed are controlled automatically. The AUTO indicator appears on the display. If any of the climate control settings are manually adjusted, this cancels full automatic operation.

Manual Operation

< ✤ > (Fan Control): Press or press and hold the front climate control buttons or touch screen to increase or decrease the airflow.

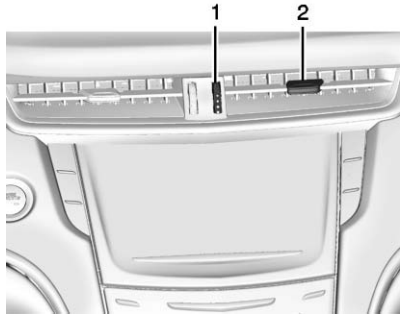
+/− (Temperature Control): Press or press and hold the rear temperature control buttons or touch screen to adjust the rear passenger temperature. Press + for warmer air and press − for cooler air.

(Air Delivery Mode Control): Press the desired mode button on the touch screen or the MODE button on the rear faceplate to change the direction of the airflow in the rear seating area.

or (Heated Rear Seats, If Equipped): Press or to heat the left or right outboard seat cushion and seatback. See *Heated Rear Seats on page 3-12*.

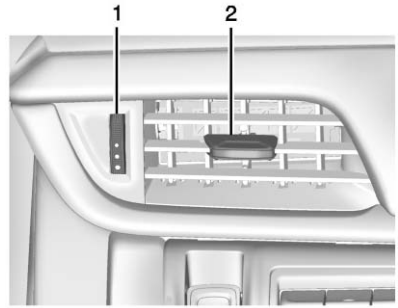
Air Vents

Adjustable air vents are in the center and on the side of the instrument panel.



1. Thumbwheel
2. Slider Knob

Use the thumbwheels (1) near the air vents to open or close off the airflow.



Move the slider knobs (2) to change the direction of the airflow.

Additional air vents are beneath the windshield and the driver and passenger side door windows. These are fixed and cannot be adjusted.

Operation Tips

- Clear away any ice, snow, or leaves from air inlets at the base of the windshield that could block the flow of air into the vehicle.
- Keep the path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.
- Use of non-GM approved hood deflectors can adversely affect the performance of the system. Check with your dealer before adding equipment to the outside of the vehicle.
- Do not attach any devices to the air vent slats. This restricts airflow and may cause damage to the air vents.

Maintenance

Passenger Compartment Air Filter

The filter removes dust, pollen, and other airborne irritants from outside air that is pulled into the vehicle. The filter should be replaced as part of routine scheduled maintenance. See *Maintenance Schedule on page 11-3*.

See your dealer regarding replacement of the filter.

Service

This vehicle may have the new environmentally friendly refrigerant, R1234yf. This refrigerant has a significantly reduced global warming impact on the environment, compared to the traditional automotive refrigerant, R-134a. All vehicles have a label underhood that identifies the refrigerant used in the vehicle.

The refrigerant system should only be serviced by trained and certified technicians. The air conditioning evaporator should never be repaired or replaced by one from a salvage vehicle. It should only be replaced by a new evaporator to ensure proper and safe operation.

During service, all refrigerants should be reclaimed with proper equipment. Venting refrigerants directly to the atmosphere is harmful to the environment and may also create unsafe conditions based on inhalation, combustion, frostbite, or other health-based concerns.

Driving and Operating

Driving Information
Distracted Driving 9-2
Defensive Driving 9-3
Drunk Driving 9-3
Control of a Vehicle 9-3
Braking 9-3
Steering 9-4
Off-Road Recovery 9-5
Loss of Control 9-5
Driving on Wet Roads 9-6
Highway Hypnosis 9-6
Hill and Mountain Roads 9-7
Winter Driving 9-7
If the Vehicle Is Stuck 9-9
Vehicle Load Limits 9-10

Starting and Operating
New Vehicle Break-In 9-14
Ignition Positions 9-15
Starting the Engine 9-17
Engine Heater 9-18
Retained Accessory Power (RAP) 9-19
Shifting Into Park 9-19
Shifting out of Park 9-20
Parking over Things That Burn 9-21

Engine Exhaust
Engine Exhaust 9-21
Running the Vehicle While Parked 9-22

Automatic Transmission
Automatic Transmission 9-22
Manual Mode 9-24

Drive Systems
All-Wheel Drive 9-24

Brakes
Antilock Brake System (ABS) 9-25
Electric Parking Brake 9-26
Brake Assist 9-27
Hill Start Assist (HSA) 9-28

Ride Control Systems
Traction Control System (TCS) 9-28
StabiliTrak® System 9-29
Magnetic Ride Control 9-31
Limited-Slip Rear Axle 9-31
Automatic Level Control 9-31

Cruise Control
Cruise Control 9-32
Adaptive Cruise Control 9-34

Driver Assistance Systems
Driver Assistance Systems 9-43
Assistance Systems for Parking or Backing 9-43
Assistance Systems for Driving 9-47
Forward Collision Alert (FCA) System 9-47
Active Emergency Braking System 9-50
Side Blind Zone Alert (SBZA) 9-52
Lane Departure Warning (LDW) 9-53

Fuel
Fuel 9-55
Recommended Fuel 9-56
Gasoline Specifications 9-56
California Fuel Requirements 9-56
Fuels in Foreign Countries . . . 9-56
Fuel Additives 9-56
Filling the Tank 9-57
Filling a Portable Fuel Container 9-59

Towing
General Towing Information 9-59
Driving Characteristics and Towing Tips 9-59
Trailer Towing 9-62
Towing Equipment 9-64

Conversions and Add-Ons
Add-On Electrical Equipment 9-64

Driving Information

Distracted Driving

Distraction comes in many forms and can take your focus from the task of driving. Exercise good judgment and do not let other activities divert your attention away from the road. Many local governments have enacted laws regarding driver distraction. Become familiar with the local laws in your area.

To avoid distracted driving, always keep your eyes on the road, hands on the wheel, and mind on the drive.

- Do not use a phone in demanding driving situations. Use a hands-free method to place or receive necessary phone calls.
- Watch the road. Do not read, take notes, or look up information on phones or other electronic devices.
- Designate a front seat passenger to handle potential distractions.
- Become familiar with vehicle features before driving, such as programming favorite radio stations and adjusting climate control and seat settings. Program all trip information into any navigation device prior to driving.
- Wait until the vehicle is parked to retrieve items that have fallen to the floor.
- Stop or park the vehicle to tend to children.
- Keep pets in an appropriate carrier or restraint.
- Avoid stressful conversations while driving, whether with a passenger or on a cell phone.

⚠ WARNING

Taking your eyes off the road too long or too often could cause a crash resulting in injury or death. Focus your attention on driving.

Refer to the CUE manual for more information on using the CUE system, if equipped.

Defensive Driving

Defensive driving means “always expect the unexpected.” The first step in driving defensively is to wear the safety belt. See *Safety Belts on page 3-14*.

- Assume that other road users (pedestrians, bicyclists, and other drivers) are going to be careless and make mistakes. Anticipate what they might do and be ready.
- Allow enough following distance between you and the driver in front of you.
- Focus on the task of driving.

Drunk Driving

Death and injury associated with drinking and driving is a global tragedy.

⚠ WARNING

Drinking and then driving is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious — or even fatal — collision if you drive after drinking.

Do not drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you are with a group, designate a driver who will not drink.

Control of a Vehicle

Braking, steering, and accelerating are important factors in helping to control a vehicle while driving.

Braking

Braking action involves perception time and reaction time. Deciding to push the brake pedal is perception time. Actually doing it is reaction time.

Average driver reaction time is about three-quarters of a second. In that time, a vehicle moving at 100 km/h (60 mph) travels 20 m (66 ft), which could be a lot of distance in an emergency.

Helpful braking tips to keep in mind include:

- Keep enough distance between you and the vehicle in front of you.
- Avoid needless heavy braking.
- Keep pace with traffic.

If the engine ever stops while the vehicle is being driven, brake normally but do not pump the brakes. Doing so could make the pedal harder to push down. If the engine stops, there will be some power brake assist but it will be used when the brake is applied. Once the power assist is used up, it can take longer to stop and the brake pedal will be harder to push.

Steering

Variable Effort Steering

Some vehicles have a steering system that varies the amount of effort required to steer the vehicle in relation to the speed of the vehicle.

The amount of steering effort required is less at slower speeds to make the vehicle more maneuverable and easier to park. At faster speeds, the steering effort increases to provide a sport-like feel to the steering. This provides maximum control and stability.

If the vehicle seems harder to steer than normal when parking or driving slowly, there may be a problem with the system. You will still have power steering, but steering will be stiffer than normal at slow speeds. See your dealer for service.

Hydraulic Power Steering

If your vehicle has hydraulic power steering, it may require maintenance. See *Power Steering Fluid on page 10-16*.

If power steering assist is lost because the engine stops, or there is a system malfunction, the vehicle can be steered but may require increased effort. See your dealer if there is a problem.

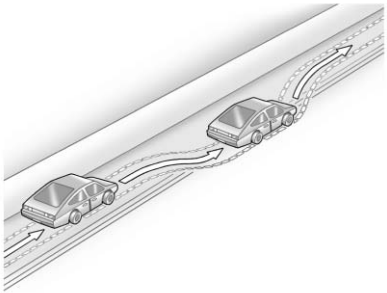
Curve Tips

- Take curves at a reasonable speed.
- Reduce speed before entering a curve.
- Maintain a reasonable, steady speed through the curve.
- Wait until the vehicle is out of the curve before accelerating gently into the straightaway.

Steering in Emergencies

- There are some situations when steering around a problem may be more effective than braking.
- Holding both sides of the steering wheel allows you to turn 180 degrees without removing a hand.
- Antilock Brake System (ABS) allows steering while braking.

Off-Road Recovery



The vehicle's right wheels can drop off the edge of a road onto the shoulder while driving. Follow these tips:

1. Ease off the accelerator and then, if there is nothing in the way, steer the vehicle so that it straddles the edge of the pavement.
2. Turn the steering wheel about one-eighth of a turn, until the right front tire contacts the pavement edge.
3. Turn the steering wheel to go straight down the roadway.

Loss of Control

Skidding

There are three types of skids that correspond to the vehicle's three control systems:

- Braking Skid — wheels are not rolling.
- Steering or Cornering Skid — too much speed or steering in a curve causes tires to slip and lose cornering force.
- Acceleration Skid — too much throttle causes the driving wheels to spin.

Defensive drivers avoid most skids by taking reasonable care suited to existing conditions, and by not overdriving those conditions. But skids are always possible.

If the vehicle starts to slide, follow these suggestions:

- Ease your foot off the accelerator pedal and steer the way you want the vehicle to go. The vehicle may straighten out. Be ready for a second skid if it occurs.
- Slow down and adjust your driving according to weather conditions. Stopping distance can be longer and vehicle control can be affected when traction is reduced by water, snow, ice, gravel, or other material on the road. Learn to recognize warning clues — such as enough water, ice, or packed snow on the road to make a mirrored surface — and slow down when you have any doubt.
- Try to avoid sudden steering, acceleration, or braking, including reducing vehicle speed by shifting to a lower gear. Any sudden changes could cause the tires to slide.

Remember: Antilock brakes help avoid only the braking skid.

Driving on Wet Roads

Rain and wet roads can reduce vehicle traction and affect your ability to stop and accelerate. Always drive slower in these types of driving conditions and avoid driving through large puddles and deep-standing or flowing water.

⚠ WARNING

Wet brakes can cause crashes. They might not work as well in a quick stop and could cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car/vehicle wash, lightly apply the brake pedal until the brakes work normally.

(Continued)

WARNING (Continued)

Flowing or rushing water creates strong forces. Driving through flowing water could cause the vehicle to be carried away. If this happens, you and other vehicle occupants could drown. Do not ignore police warnings and be very cautious about trying to drive through flowing water.

Hydroplaning

Hydroplaning is dangerous. Water can build up under the vehicle's tires so they actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When the vehicle is hydroplaning, it has little or no contact with the road.

There is no hard and fast rule about hydroplaning. The best advice is to slow down when the road is wet.

Other Rainy Weather Tips

Besides slowing down, other wet weather driving tips include:

- Allow extra following distance.
- Pass with caution.
- Keep windshield wiping equipment in good shape.
- Keep the windshield washer fluid reservoir filled.
- Have good tires with proper tread depth. See *Tires on page 10-34*.
- Turn off cruise control.

Highway Hypnosis

Always be alert and pay attention to your surroundings while driving. If you become tired or sleepy, find a safe place to park the vehicle and rest.

Other driving tips include:

- Keep the vehicle well ventilated.
- Keep the interior temperature cool.

- Keep your eyes moving — scan the road ahead and to the sides.
- Check the rearview mirror and vehicle instruments often.

Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips for driving in these conditions include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, tires, cooling system, and transmission.
- Shift to a lower gear when going down steep or long hills.

⚠ WARNING

If you do not shift down, the brakes could get so hot that they would not work well. You would then have poor braking or even

(Continued)

WARNING (Continued)

none going down a hill. You could crash. Shift down to let the engine assist the brakes on a steep downhill slope.

⚠ WARNING

Coasting downhill in N (Neutral) or with the ignition off is dangerous. The brakes will have to do all the work of slowing down and they could get so hot that they would not work well. You would then have poor braking or even none going down a hill. Steering may also be affected when ignition is off. You could crash. Always have the engine running and the vehicle in gear when going downhill.

- Stay in your own lane. Do not swing wide or cut across the center of the road. Drive at speeds that let you stay in your own lane.
- Be alert on top of hills; something could be in your lane (stalled car, accident).
- Pay attention to special road signs (falling rocks area, winding roads, long grades, passing or no-passing zones) and take appropriate action.

Winter Driving

Driving on Snow or Ice

Drive carefully when there is snow or ice between the tires and the road, creating less traction or grip. Wet ice can occur at about 0°C (32°F) when freezing rain begins to fall, resulting in even less traction. Avoid driving on wet ice or in freezing rain until roads can be treated with salt or sand.

Drive with caution, whatever the condition. Accelerate gently so traction is not lost. Accelerating too quickly causes the wheels to spin and makes the surface under the tires slick, so there is even less traction.

Try not to break the fragile traction. If you accelerate too fast, the drive wheels will spin and polish the surface under the tires even more.

The Antilock Brake System (ABS) improves vehicle stability during hard stops on slippery roads, but apply the brakes sooner than when on dry pavement.

Allow greater following distance on any slippery road and watch for slippery spots. Icy patches can occur on otherwise clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering maneuvers and braking while on ice.

See *Antilock Brake System (ABS) on page 9-25*.

Turn off cruise control, on slippery surfaces.

Blizzard Conditions

Being stuck in snow can be a serious situation. Stay with the vehicle unless there is help nearby. If possible, use Roadside Service. See *Roadside Service on page 13-5*. To get help and keep everyone in the vehicle safe:

- Turn on the hazard warning flashers.
- Tie a red cloth to an outside mirror.

⚠ WARNING

Snow can trap engine exhaust under the vehicle. This may cause exhaust gases to get inside. Engine exhaust contains carbon monoxide (CO) which

(Continued)

WARNING (Continued)

cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle is stuck in the snow:

- Clear away snow from around the base of your vehicle, especially any that is blocking the exhaust pipe.
- Check again from time to time to be sure snow does not collect there.
- Open a window about 5 cm (2 in) on the side of the vehicle that is away from the wind to bring in fresh air.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to a setting that circulates the air inside the vehicle and set the fan speed

(Continued)

WARNING (Continued)

to the highest setting. See "Climate Control Systems" in the Index.

For more information about carbon monoxide, see *Engine Exhaust on page 9-21*.

Run the engine for short periods only as needed to keep warm, but be careful.

To save fuel, run the engine for only short periods as needed to warm the vehicle and then shut the engine off and close the window most of the way to save heat. Repeat this until help arrives but only when you feel really uncomfortable from the cold. Moving about to keep warm also helps.

If it takes some time for help to arrive, now and then when you run the engine, push the accelerator pedal slightly so the engine runs faster than the idle speed. This keeps the battery charged to restart the vehicle and to signal for help with the headlamps. Do this as little as possible to save fuel.

If the Vehicle Is Stuck

Slowly and cautiously spin the wheels to free the vehicle when stuck in sand, mud, ice, or snow.

If stuck too severely for the traction system to free the vehicle, turn the traction system off and use the rocking method. See *Traction Control System (TCS) on page 9-28*.

⚠ WARNING

If the vehicle's tires spin at high speed, they can explode, and you or others could be injured. The vehicle can overheat, causing an engine compartment fire or other damage. Spin the wheels as little as possible and avoid going above 56 km/h (35 mph).

Rocking the Vehicle to Get it Out

Turn the steering wheel left and right to clear the area around the front wheels. Turn off any traction system. Shift back and forth between R (Reverse) and a low forward gear, spinning the wheels as little as possible. To prevent transmission wear, wait until the wheels stop spinning before shifting gears. Release the accelerator pedal while shifting, and press lightly on the accelerator pedal when the transmission is in gear. Slowly spinning the wheels in the forward and reverse directions causes a rocking motion that could free the vehicle. If that does not get the vehicle out after a few tries, it might need to be towed out. If the vehicle does need to be towed out, see *Towing the Vehicle on page 10-73*.

Vehicle Load Limits

It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all nonfactory-installed options. Two labels on the vehicle show how much weight it may properly carry: the Tire and Loading Information label and the Certification label.

⚠ WARNING

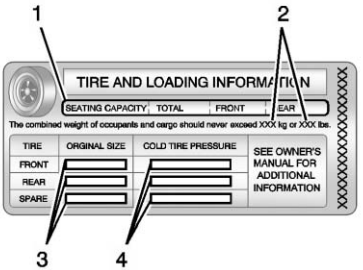
Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the

(Continued)

WARNING (Continued)

vehicle handles. This could cause loss of control and a crash. Overloading can also shorten the life of the vehicle.

Tire and Loading Information Label



Label Example

A vehicle-specific Tire and Loading Information label is attached to the vehicle center pillar (B-pillar). With the driver door open, you will find the label attached below the door lock post. The Tire and Loading Information label shows the number of occupant seating positions (1), and the maximum vehicle capacity weight (2) in kilograms and pounds.

If the vehicle is a Professional Vehicle, the vehicle-specific Certification label is provided by the final stage manufacturer. The coach-builder should be consulted if the final stage manufacturer's label is not present. The Gross Vehicle Weight Rating GVWR label should be on the driver's door edge.

The Tire and Loading Information label also shows the tire size of the original equipment tires (3) and the recommended cold tire inflation

pressures (4). For more information on tires and inflation see *Tires on page 10-34* and *Tire Pressure on page 10-41*.

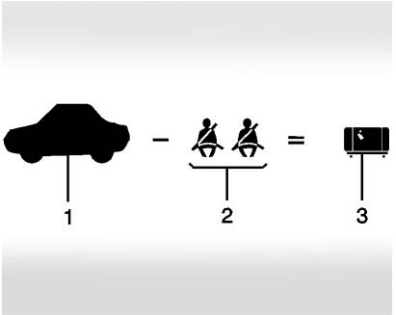
There is also important loading information on the Certification label. It tells you the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle; see “Certification Label” later in this section.

If this is a professional vehicle, a vehicle-specific Tire and Loading Information label will be provided and installed by the final body manufacturer. The Tire and Loading Information label should be attached to the B-pillar. See the final stage manufacturer's manual or contact them directly. The label shows the original tires installed on the professional vehicle, the recommended cold tire inflation pressures for those tires, and the vehicle's capacity weight.

Steps for Determining Correct Load Limit

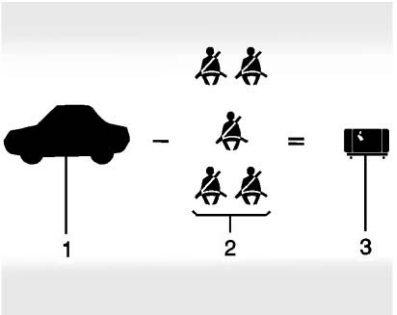
1. Locate the statement “The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs” on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the “XXX” amount equals 1400 lbs and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs (1400 − 750 (5 x 150) = 650 lbs).
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, the load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

See *Trailer Towing on page 9-62* for important information on towing a trailer, towing safety rules, and trailering tips.



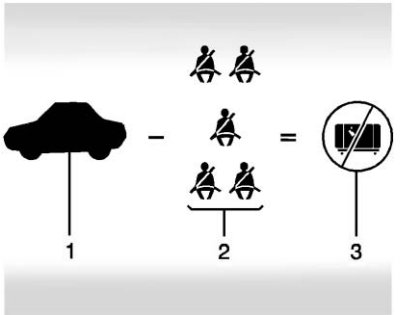
Example 1

1. Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 68 kg (150 lbs) × 2 = 136 kg (300 lbs).
3. Available Occupant and Cargo Weight = 317 kg (700 lbs).



Example 2

1. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 68 kg (150 lbs) × 5 = 340 kg (750 lbs).
3. Available Cargo Weight = 113 kg (250 lbs).



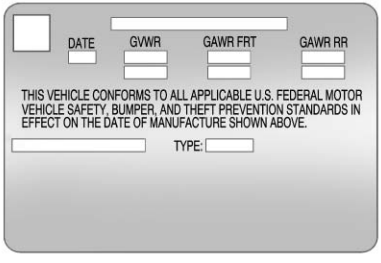
Example 3

1. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 91 kg (200 lbs) × 5 = 453 kg (1,000 lbs).
3. Available Cargo Weight = 0 kg (0 lbs).

Refer to the vehicle's Tire and Loading Information label for specific information about the vehicle's capacity weight and

seating positions. The combined weight of the driver, passengers, and cargo should never exceed the vehicle's capacity weight.

Certification Label



Label Example

A vehicle-specific Certification label, found on the vehicle center pillar (B-pillar), tells you the gross weight capacity of the vehicle, called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo. Never exceed the GVWR for the vehicle, or the Gross Axle Weight Rating (GAWR) for either the front or rear axle.

If the vehicle is a professional vehicle, the vehicle-specific certification label is provided by the final stage manufacturer. The coach-builder should be consulted if the final stage manufacturer's label is not present. The Gross Vehicle Weight Rating (GVWR) label should be on the driver door edge.

And, if you do have a heavy load, you should spread it out. See “Steps for Determining Correct Load Limit” earlier in this section.

⚠ WARNING

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also shorten the life of the vehicle.

If you put things inside the vehicle — like suitcases, tools, packages, or anything else — they will go as fast as the vehicle goes. If you have to stop or turn quickly, or if there is a crash, they will keep going.

⚠ WARNING

Things inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. In the cargo area, put them as far forward as possible. Try to spread the weight evenly.
- Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.

(Continued)

WARNING (Continued)

- Do not leave an unsecured child restraint in the vehicle.
- Secure loose items in the vehicle.
- Do not leave a seat folded down unless needed.

Starting and Operating

New Vehicle Break-In

Notice: **The vehicle does not need an elaborate break-in. But it will perform better in the long run if you follow these guidelines:**

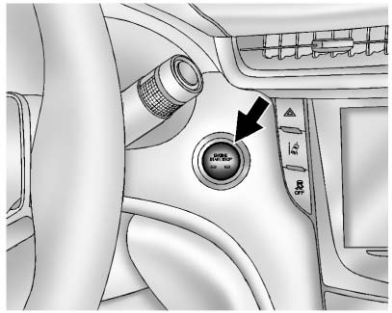
- **Do not drive at any one constant speed, fast or slow, for the first 805 km (500 mi). Do not make full-throttle starts. Avoid downshifting to brake or slow the vehicle.**
- **During the first 1 000 km (600 mi), avoid using more than moderate acceleration in lower gears and avoid vehicle speeds above 110 km/h (68 mph).**
- **Between the first 1 000 km (600 mi) and 5 000 km (3,000 mi), heavy acceleration in lower gears can be used. Vehicle speeds**

above 110 km/h (68 mph) should be limited to five minutes per use.

- **Avoid making hard stops for the first 322 km (200 mi) or so. During this time the new brake linings are not yet broken in. Hard stops with new linings can mean premature wear and earlier replacement. Follow this breaking-in guideline every time you get new brake linings.**
- **Do not tow a trailer during break-in. See *Driving Characteristics and Towing Tips on page 9-59* for the trailer towing capabilities of your vehicle and more information.**

Following break-in, engine speed and load can be gradually increased.

Ignition Positions



The vehicle has an electronic keyless ignition with pushbutton start.

Pressing the button cycles it through three modes: ACC/ACCESSORY, ON/RUN/START, and Stopping the Engine/OFF.

The transmitter must be in the vehicle for the system to operate. If the pushbutton start is not working, the vehicle may be near a strong radio antenna signal causing interference to the remote keyless access system. See *Remote Keyless Entry (RKE) System Operation on page 2-3*.

To shift out of P (Park), the vehicle must be in ON/RUN and the brake pedal must be applied.

Stopping the Engine/OFF (No Indicator Lights): When the vehicle is stopped, press the engine START/STOP button once to turn the engine off.

If the vehicle is in P (Park), the ignition will turn off, and Retained Accessory Power (RAP) will remain active. See *Retained Accessory Power (RAP) on page 9-19*.

If the vehicle is not in P (Park), the ignition will return to ACC/ACCESSORY and display the message SHIFT TO PARK in the Driver Information Center (DIC). See *Transmission Messages on page 5-44*. When the vehicle is shifted into P (Park), the ignition system will switch to OFF.

Do not turn the engine off when the vehicle is moving. This will cause a loss of power assist in the brake and steering systems and disable the airbags.

If the vehicle must be shut off in an emergency:

1. Brake using a firm and steady pressure. Do not pump the brakes repeatedly. This may deplete power assist, requiring increased brake pedal force.
2. Shift the vehicle to N (Neutral). This can be done while the vehicle is moving. After shifting to N (Neutral), firmly apply the brakes and steer the vehicle to a safe location.
3. Come to a complete stop, shift to P (Park), and turn the ignition OFF. On vehicles with an automatic transmission, the shift lever must be in P (Park) to turn the ignition to the OFF position.
4. Set the parking brake. See *Electric Parking Brake on page 9-26*.

⚠ WARNING

Turning off the vehicle while moving may cause loss of power assist in the brake and steering systems and disable the airbags. While driving, only shut the vehicle off in an emergency.

If the vehicle cannot be pulled over, and must be shut off while driving, press and hold the engine START/STOP button for longer than two seconds, or press twice in five seconds.

ACC/ACCESSORY (Amber Indicator Light): This mode allows the use of some electrical accessories when the engine is off.

With the ignition off, pressing the button one time without the brake pedal applied will place the ignition system in ACC/ACCESSORY.

The ignition will switch from ACC/ACCESSORY to OFF after five minutes to prevent battery rundown.

ON/RUN/START (Green Indicator Light): This mode is for driving and starting. With the ignition off, and the brake pedal applied, pressing the button once will place the ignition system in ON/RUN/START. Once engine cranking begins, release the button. Engine cranking will continue until the engine starts. See *Starting the Engine on page 9-17*. The ignition will then remain in ON/RUN.

Service Only Mode

This power mode is available for service and diagnostics, and to verify the proper operation of the malfunction indicator lamp as may be required for emission inspection purposes. With the vehicle off, and the brake pedal not applied, pressing and holding the button for more than five seconds will place the vehicle in Service Only Mode.

The instruments and audio systems will operate as they do in ON/RUN, but the vehicle will not be able to be driven. The engine will not start in Service Only Mode. Push the button again to turn the vehicle off.

Starting the Engine

Move the shift lever to P (Park) or N (Neutral). The engine will not start in any other position. To restart the engine when the vehicle is already moving, use N (Neutral) only.

Notice: **Do not try to shift to P (Park) if the vehicle is moving. If you do, you could damage the transmission. Shift to P (Park) only when the vehicle is stopped.**

Notice: **If you add electrical parts or accessories, you could change the way the engine operates. Any resulting damage would not be covered by the vehicle warranty. See *Add-On Electrical Equipment on page 9-64*.**

Starting Procedure

1. With the keyless access system, the transmitter must be in the vehicle. Put your foot on the brake pedal and push the START button. When the engine begins cranking, let go of the button.

   The idle speed will go down as the engine gets warm. Do not race the engine immediately after starting it. Operate the engine and transmission gently to allow the oil to warm up and lubricate all moving parts.

   If the transmitter is not in the vehicle or something is interfering with the transmitter, the Driver Information Center (DIC) will display a message. See *Key and Lock Messages on page 5-38*.

   If the battery in the Remote Keyless Entry (RKE) transmitter needs replacing, the DIC will display a message. The vehicle can still be driven. See “Starting the Vehicle with a Low Transmitter Battery” in *Remote Keyless Entry (RKE) System Operation on page 2-3*.

   The vehicle has a Computer-Controlled Cranking System. This feature assists in starting the engine and protects components. If the START button is pressed, and then released when the engine begins cranking, the engine will continue cranking for a few seconds or until the vehicle starts. If the engine does not start and the button is pressed for many seconds, cranking will be stopped after 15 seconds to prevent cranking motor damage. To prevent gear damage, this system also prevents cranking if the engine is already running. Engine cranking can be stopped by pressing the START button a second time.

Notice: **Cranking the engine for long periods of time, by pressing the START button immediately after cranking has ended, can overheat and damage the cranking motor, and drain the battery. Wait at least 15 seconds between each try, to let the cranking motor cool down.**

2. If the engine does not start after five to 10 seconds, especially in very cold weather (below −18°C or 0°F), it could be flooded with too much gasoline. Try pushing the accelerator pedal all the way to the floor and holding it there as you press the START button, for up to a maximum of 15 seconds. Wait at least 15 seconds between each try, to allow the cranking motor to cool down. When the engine starts, let go of the button and the accelerator. If the vehicle starts briefly but then stops again, do the same thing. This clears the extra gasoline from the engine.

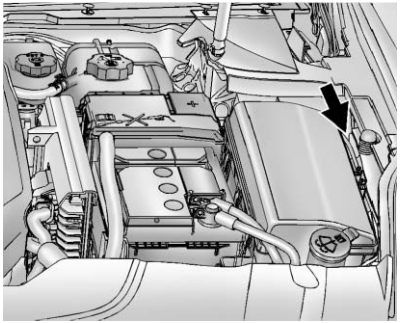
   Do not race the engine immediately after starting it. Operate the engine and transmission gently until the oil warms up and lubricates all moving parts.

Engine Heater

The engine coolant heater, if available, can help in cold weather conditions at or below −18°C (0°F) for easier starting and better fuel economy during engine warm-up. Plug in the coolant heater at least four hours before starting the vehicle. An internal thermostat in the plug end of the cord will prevent engine coolant heater operation at temperatures above −18°C (0°F).

To Use the Engine Coolant Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord.



   The electrical cord is on the driver side of the engine compartment, between the fender and the engine compartment fuse block.

3. Plug it into a normal, grounded 110-volt AC outlet.

⚠ WARNING

Plugging the cord into an ungrounded outlet could cause an electrical shock. Also, the wrong kind of extension cord could

(Continued)

WARNING (Continued)

overheat and cause a fire. You could be seriously injured. Plug the cord into a properly grounded three-prong 110-volt AC outlet. If the cord will not reach, use a heavy-duty three-prong extension cord rated for at least 15 amps.

4. Before starting the engine, be sure to unplug and store the cord as it was before to keep it away from moving engine parts.

The length of time the heater should remain plugged in depends on several factors. Ask a dealer in the area where you will be parking the vehicle for the best advice on this.

Retained Accessory Power (RAP)

These vehicle accessories can be used for up to 10 minutes after the engine is turned off:

- Infotainment System
- Power Windows
- Sunroof (If Equipped)
- Accessory Power Outlets

Power to the infotainment system will continue to operate for up to 10 minutes or until the driver door is opened.

Power to the power windows and sunroof will continue to operate for up to 10 minutes or until any door is opened.

All of these features will work when the ignition is in ON/RUN or ACC/ACCESSORY.

Shifting Into Park

1. Hold the brake pedal down and apply the parking brake. See *Electric Parking Brake on page 9-26*.
2. Move the shift lever into P (Park) by pushing the lever all the way toward the front of the vehicle.
3. Turn the ignition off.

Leaving the Vehicle with the Engine Running

⚠ WARNING

It can be dangerous to leave the vehicle with the engine running. It could overheat and catch fire.

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll.

(Continued)

WARNING (Continued)

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park on page 9-19*. If you are towing a trailer, see *Driving Characteristics and Towing Tips on page 9-59*.

If you have to leave the vehicle with the engine running, be sure the vehicle is in P (Park) and the parking brake is firmly set before you leave it. After you have moved the shift lever into P (Park), hold down the regular brake pedal. See if you can move the shift lever away from P (Park) without first pulling it toward you. If you can, it means that the shift lever was not fully locked into P (Park).

Torque Lock

Torque lock is when the weight of the vehicle puts too much force on the parking pawl in the transmission. This happens when parking on a hill and shifting the transmission into P (Park) is not done properly and then it is difficult to shift out of P (Park). To prevent torque lock, set the parking brake and then shift into P (Park). To find out how, see "Shifting Into P (Park)" listed previously.

If torque lock does occur, your vehicle may need to be pushed uphill by another vehicle to relieve the parking pawl pressure, so you can shift out of P (Park).

If you are towing a trailer and parking on a hill, see *Driving Characteristics and Towing Tips on page 9-59*.

Shifting out of Park

This vehicle is equipped with an automatic transmission shift lock control system. The shift lock control is designed to prevent movement of the shift lever out of P (Park), unless the ignition is in ON/RUN and the brake pedal is applied.

The shift lock control is always functional except in the case of an uncharged or low voltage (less than 9-volt) battery.

If the vehicle has an uncharged battery or a battery with low voltage, try charging or jump starting the battery. See *Jump Starting on page 10-71*.

To shift out of P (Park):

1. Turn the ignition to ON/RUN.
2. Apply the brake pedal.
3. Press the shift lever button.
4. Move the shift lever to the desired position.

If you still are unable to shift out of P (Park):

1. Fully release the shift lever button.
2. Hold the brake pedal down and press the shift lever button again.
3. Move the shift lever to the desired position.

If you still cannot move the shift lever from P (Park), consult your dealer or a professional towing service.

Parking over Things That Burn

⚠ WARNING

Things that can burn could touch hot exhaust parts under the vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

Engine Exhaust

⚠ WARNING

Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. Exposure to CO can cause unconsciousness and even death.

Exhaust may enter the vehicle if:

- The vehicle idles in areas with poor ventilation (parking garages, tunnels, deep snow that may block underbody airflow or tail pipes).
- The exhaust smells or sounds strange or different.
- The exhaust system leaks due to corrosion or damage.
- The vehicle exhaust system has been modified, damaged, or improperly repaired.

(Continued)

WARNING (Continued)

- There are holes or openings in the vehicle body from damage or aftermarket modifications that are not completely sealed.

If unusual fumes are detected or if it is suspected that exhaust is coming into the vehicle:

- Drive it only with the windows completely down.
- Have the vehicle repaired immediately.

Never park the vehicle with the engine running in an enclosed area such as a garage or a building that has no fresh air ventilation.

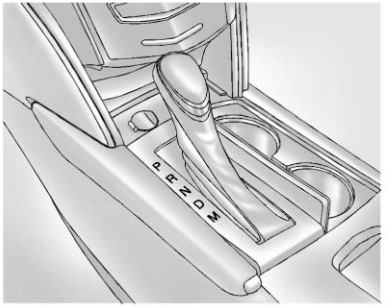
Running the Vehicle While Parked

It is better not to park with the engine running.

If the vehicle is left with the engine running, follow the proper steps to be sure the vehicle will not move. See *Shifting Into Park on page 9-19* and *Engine Exhaust on page 9-21*.

If parking on a hill and pulling a trailer, see *Driving Characteristics and Towing Tips on page 9-59*.

Automatic Transmission



P (Park): This position locks the wheels. It is the best position to use when starting the engine because the vehicle cannot move easily.

⚠ WARNING

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll.

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park on page 9-19* and *Driving Characteristics and Towing Tips on page 9-59*.

Make sure the shift lever is fully in P (Park) before starting the engine. The vehicle has an automatic transmission shift lock control system. The regular brake must be fully applied first and then the shift

lever button pressed before shifting from P (Park) when the ignition is in ON/RUN. If you cannot shift out of P (Park), ease pressure on the shift lever, then push the shift lever all the way into P (Park) as you maintain brake application. Then press the shift lever button and move the shift lever into another gear. See *Shifting out of Park on page 9-20*.

R (Reverse): Use this gear to back up.

Notice: **Shifting to R (Reverse) while the vehicle is moving forward could damage the transmission. The repairs would not be covered by the vehicle warranty. Shift to R (Reverse) only after the vehicle is stopped.**

To rock the vehicle back and forth to get out of snow, ice, or sand without damaging the transmission, see *If the Vehicle Is Stuck on page 9-9*.

N (Neutral): In this position, the engine does not connect with the wheels. To restart the engine when the vehicle is already moving, use N (Neutral) only. Also, use N (Neutral) when the vehicle is being towed.

⚠ WARNING

Shifting into a drive gear while the engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, the vehicle could move very rapidly. You could lose control and hit people or objects. Do not shift into a drive gear while the engine is running at high speed.

Notice: **Shifting out of P (Park) or N (Neutral) with the engine running at high speed may damage the transmission. The repairs would not be covered by the vehicle warranty. Be sure the engine is not running at high speed when shifting the vehicle.**

D (Drive): This position is for normal driving. It provides the best fuel economy. If more power is needed for passing, and the vehicle is:

- Going less than 56 km/h (35 mph), push the accelerator pedal about halfway down.
- Going about 56 km/h (35 mph) or more, push the accelerator all the way down.

Notice: **If the vehicle seems to accelerate slowly or not shift gears when you go faster, and you continue to drive the vehicle that way, you could damage the transmission. Have the vehicle serviced right away.**

M (Manual Mode): This position allows the driver to select the range of gears appropriate for current driving conditions.

In M (Manual Mode) the transmission will shift as an automatic until the Tap Shift controls are used. Tap Shift activates driver manual gear selection.

See *Manual Mode on page 9-24* for more information.

Manual Mode

Tap Shift

Tap Shift allows the driver to manually control the automatic transmission. To use Tap Shift, the shift lever must be in M (Manual Mode). Vehicles with this feature have indicators on the steering wheel. The controls are on the back of the steering wheel. Tap the left control to downshift, and the right control to upshift. A Driver Information Center (DIC) message indicates the gear the vehicle is in.

When accelerating the vehicle from a stop in snowy and icy conditions, you may want to shift into 2 (Second) gear. A higher gear ratio allows you to gain more traction on slippery surfaces.

Drive Systems

All-Wheel Drive

Vehicles with this feature always send engine power to all four wheels. It is fully automatic, and adjusts itself as needed for road conditions.

When using a compact spare tire on an AWD vehicle, the system automatically detects the compact spare and disables AWD. To restore AWD operation and prevent excessive wear on the system, replace the compact spare with a full-size tire as soon as possible. See *Compact Spare Tire on page 10-69*.

Brakes

Antilock Brake System (ABS)

This vehicle has the Antilock Brake System (ABS), an advanced electronic braking system that helps prevent a braking skid.

When the engine is started and the vehicle begins to drive away, ABS checks itself. A momentary motor or clicking noise might be heard while this test is going on, and it might even be noticed that the brake pedal moves a little. This is normal.

If there is a problem with ABS, this warning light stays on. See *Antilock Brake System (ABS) Warning Light on page 5-22*.

If driving safely on a wet road and it becomes necessary to slam on the brakes and continue braking to avoid a sudden obstacle, a computer senses that the wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each wheel.

ABS can change the brake pressure to each wheel, as required, faster than any driver could. This can help the driver steer around the obstacle while braking hard.

As the brakes are applied, the computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: ABS does not change the time needed to get a foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, there will not be enough time to apply the brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even with ABS.

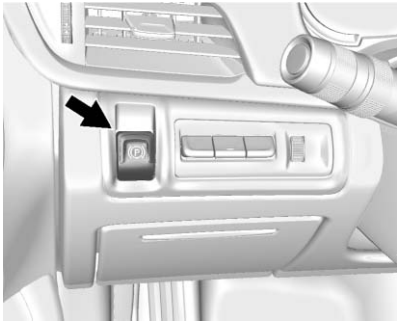
Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let ABS work. You might hear the ABS pump or motor operating and feel the brake pedal pulsate, but this is normal.

Braking in Emergencies

ABS allows the driver to steer and brake at the same time. In many emergencies, steering can help more than even the very best braking.

Electric Parking Brake



The vehicle has an Electric Parking Brake (EPB). The switch for the EPB is on the left side of the instrument panel. The EPB can always be activated, even if the ignition is off. To prevent draining the battery, avoid repeated cycles of the EPB system when the engine is not running.

The system has a parking brake status light and a parking brake warning light. See *Electric Parking Brake Light on page 5-21*. There are also Driver Information Center (DIC) messages. See *Brake System Messages on page 5-35*. In case of insufficient electrical power, the EPB cannot be applied or released.

Before leaving the vehicle, check the parking brake status light to ensure that the parking brake is applied.

EPB Apply

The EPB can be applied any time the vehicle is stopped. The EPB is applied by momentarily lifting up on the EPB switch. Once fully applied, the parking brake status light will be on. While the brake is being applied, the status light will flash until full apply is reached. If the light does not come on, or remains flashing, have the vehicle serviced. Do not drive the vehicle if the parking brake status light is flashing. See your dealer. See *Electric Parking Brake Light on page 5-21*.

If the EPB is applied while the vehicle is in motion, a chime will sound, and a DIC message will be displayed. See *Brake System Messages on page 5-35*. The vehicle will decelerate as long as the switch is held in the up position. Releasing the EPB switch during deceleration will release the parking brake. If the switch is held in the up position until the vehicle comes to a stop, the EPB will remain applied.

If the parking brake status light flashes continuously, the EPB is only partially applied or released, or there is a problem with the EPB. A DIC message will be displayed. See *Brake System Messages on page 5-35*. If this light flashes continuously, release the EPB, and attempt to apply it again. If this light continues to flash, do not drive the vehicle. See your dealer.

If the parking brake warning light is on, the EPB has detected an error in the EPB system or another system and is operating with reduced functionality. To apply the EPB when this light is on, lift up on the EPB switch and hold it in the up position. Full application of the

parking brake by the EPB system may take longer than normal when this light is on. Continue to hold the switch until the parking brake status light remains on. If the parking brake warning light is on, see your dealer.

Adaptive Cruise Control (if equipped) may automatically apply the EPB in some situations when the vehicle is not moving. This is normal, and is done to periodically check the correct operation of the EPB system. See *Adaptive Cruise Control on page 9-34*.

If the EPB fails to apply, the rear wheels should be blocked to prevent vehicle movement.

EPB Release

To release the EPB, place the ignition in the ACC/ACCESSORY or ON/RUN position, apply and hold the brake pedal, and push down momentarily on the EPB switch. If you attempt to release the EPB without the brake pedal applied, a chime will sound, and a DIC message will be displayed. See *Brake System Messages on page 5-35*. The EPB is released when the parking brake status light is off.

If the parking brake warning light is on, the EPB has detected an error in another system and is operating with reduced functionality. To release the EPB when this light is on, push down on the EPB switch and hold it in the down position. EPB release may take longer than normal when this light is on. Continue to hold the switch until the parking brake status light is off. If the light is on, see your dealer.

Notice: **Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Make sure that the parking brake is fully released and the brake warning light is off before driving.**

Automatic EPB Release

The EPB will automatically release if the vehicle is running, placed into gear, and an attempt is made to drive away. Avoid rapid acceleration when the EPB is applied, to preserve parking brake lining life.

For maximum EPB force when towing a trailer or parking on a hill, pull the EPB switch twice. If you are towing a trailer and parking on a hill, see *Driving Characteristics and Towing Tips on page 9-59*.

Brake Assist

This vehicle has a brake assist feature designed to assist the driver in stopping or decreasing vehicle speed in emergency driving conditions. This feature uses the stability system hydraulic brake control module to supplement the power brake system under conditions where the driver has quickly and forcefully applied the brake pedal in an attempt to quickly stop or slow down the vehicle. The

stability system hydraulic brake control module increases brake pressure at each corner of the vehicle until the ABS activates. Minor brake pedal pulsation or pedal movement during this time is normal and the driver should continue to apply the brake pedal as the driving situation dictates. The brake assist feature will automatically disengage when the brake pedal is released or brake pedal pressure is quickly decreased.

Hill Start Assist (HSA)

This vehicle has a Hill Start Assist (HSA) feature, which may be useful when the vehicle is stopped on a grade. This feature is designed to prevent the vehicle from rolling, either forward or rearward, during vehicle drive off. After the driver completely stops and holds the vehicle in a complete standstill on a grade, HSA will be automatically activated. During the transition period between when the driver releases the brake pedal and starts to accelerate to drive off on a grade, HSA holds the braking pressure to ensure that there is no rolling. The brakes will automatically release when the accelerator pedal is applied within the two-second window. It will not activate if the vehicle is in a drive gear and facing downhill, or if the vehicle is facing uphill and in R (Reverse).

Ride Control Systems

Traction Control System (TCS)

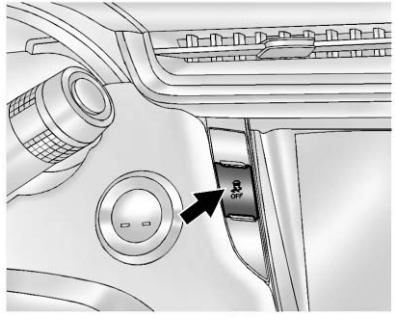
The vehicle has a TCS that limits wheel spin. This is especially useful in slippery road conditions. The system operates if it senses that one or both of the front wheels are spinning or beginning to lose traction. On an All-Wheel-Drive (AWD) vehicle, the system will operate if it senses that any of the wheels are spinning or beginning to lose traction. When this happens, the system brakes the spinning wheel(s) and/or reduces engine power to limit wheel spin.

The system may be heard or felt while it is working, but this is normal.

The TCS/StabiliTrak light flashes when the traction control system is limiting wheel spin.

The TCS/StabiliTrak light comes on and the appropriate message will be displayed in the DIC if there is a problem with the traction control system. When the TCS/StabiliTrak light is on, the system will not limit wheel spin. Adjust your driving accordingly. See *Traction Control System (TCS)/StabiliTrak® Light on page 5-24*.

TCS automatically comes on whenever the vehicle is started. To limit wheel spin, especially in slippery road conditions, the system should always be left on, but it may be necessary to turn the system off if the vehicle is stuck in sand, mud, or snow and rocking the vehicle is required. See *If the Vehicle Is Stuck on page 9-9*. See *Winter Driving on page 9-7* for information on using TCS when driving in snowy or icy conditions.



TCS/StabiliTrak Button

Press and release the TCS/StabiliTrak button to turn the traction control system off. The traction off light will come on in the instrument cluster and the appropriate message will be displayed in the DIC. Press the button again to turn the system back on. For information on turning StabiliTrak off and on, see *StabiliTrak® System on page 9-29*.

Adding non-dealer accessories can affect your vehicle's performance. See *Accessories and Modifications on page 10-3*.

StabiliTrak® System

The vehicle has an electronic stability control system called StabiliTrak. It is an advanced computer controlled system that assists with directional control of the vehicle in difficult driving conditions.

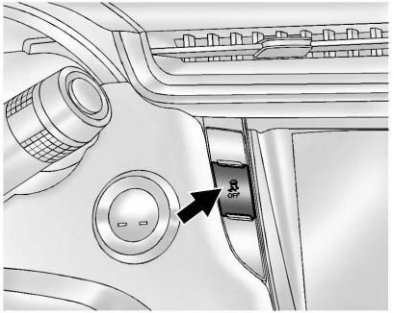
StabiliTrak activates when the system senses a discrepancy between the intended path and the direction the vehicle is actually

traveling. StabiliTrak selectively applies braking pressure at any one of the vehicle's brakes to help steer the vehicle in the direction which you are steering.

When the system activates, this warning light flashes in the instrument cluster. A noise may be heard or a vibration may be felt in the brake pedal. This is normal. Continue to steer the vehicle in the intended direction.

If there is a problem detected with StabiliTrak, the appropriate message displays on the Driver Information Center (DIC) and the TCS/StabiliTrak warning light comes on in the instrument cluster. When this message and light display, the system is not operational. Driving should be adjusted accordingly.

See *Driver Information Center (DIC) on page 5-28* and *Traction Control System (TCS)/StabiliTrak® Light on page 5-24*.



TCS/StabiliTrak Button

StabiliTrak comes on automatically whenever the vehicle is started. The system should be left on to help assist with directional control of the vehicle.

If StabiliTrak needs to be turned off, press and hold the TCS/StabiliTrak button until the traction off light and StabiliTrak OFF light come on in the instrument cluster. TCS will also be turned off. The appropriate message will be displayed in the DIC. Press the TCS/StabiliTrak button again to turn both systems back on.

If cruise control is being used when StabiliTrak activates, the cruise control will automatically disengage. When road conditions allow, reengage the cruise control. See *Cruise Control on page 9-32*.

Magnetic Ride Control

The Magnetic Ride Control monitors the suspension system.

Based on road conditions, steering wheel angle, and vehicle speed, the system automatically adjusts to provide the best handling while providing a smooth ride. The Tour and Sport Modes will feel similar on a smooth road.

Tour: Use for normal city and highway driving. This setting provides a smooth, soft ride.

Sport: Use where road conditions or personal preference demand more control. This setting provides more “feel,” or response to road conditions.

The vehicle is normally in Tour Mode. Sport Mode is engaged when the shift lever is placed in M (Manual). When the shift lever is placed in D (Drive) the system will revert back to Tour Mode.

The Driver Information Center (DIC) briefly displays the appropriate message on vehicle startup or when a new mode is selected. See *Ride Control System Messages on page 5-42*.

Limited-Slip Rear Axle

Vehicles with a limited-slip rear axle can give more traction on snow, mud, ice, sand or gravel. When traction is low, this feature allows the drive wheel with the most traction to move the vehicle. The limited-slip rear axle also gives the driver enhanced control when cornering hard or completing a maneuver, such as a lane change.

Automatic Level Control

The automatic level control rear suspension is available on some vehicles.

This type of level control is fully automatic and will provide a better leveled riding position as well as better handling under a variety of passenger and loading conditions. An air compressor connected to the rear shocks will raise or lower the rear of the vehicle to maintain proper vehicle height. The system is activated when the engine is running and will automatically adjust vehicle height thereafter. The system may exhaust (lower vehicle height) for up to 10 minutes after the engine has been turned off. You may hear the air compressor operating when the height is being adjusted; this is normal.

If the compressor runs often for longer than one minute within the same trip and the vehicle remains low in the rear, see your dealer for service.

If the vehicle is not used for several weeks, the rear of the vehicle may look low. When the engine is started, the vehicle will return to the proper height.

If a weight-distributing hitch is being used, it is recommended to allow the shocks to inflate, thereby leveling the vehicle prior to adjusting the hitch.

Cruise Control

⚠ WARNING

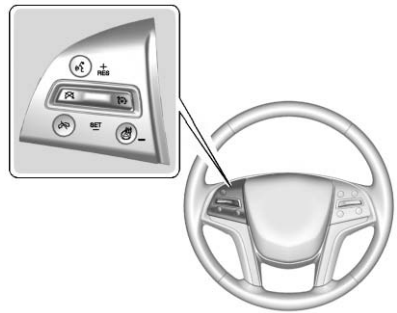
Cruise control can be dangerous where you cannot drive safely at a steady speed. So, do not use the cruise control on winding roads or in heavy traffic.

Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

With cruise control, a speed of about 40 km/h (25 mph) or more can be maintained without keeping your foot on the accelerator. Cruise control does not work at speeds below about 40 km/h (25 mph).

If the brakes are applied, the cruise control disengages.

If the StabiliTrak® system begins to limit wheel spin while using cruise control, the cruise control automatically disengages. See *StabiliTrak® System on page 9-29* or *Traction Control System (TCS) on page 9-28*. When road conditions allow the cruise control to be safely used, you can apply the cruise control again.



(On/Off): Press to turn the system on and off. A white indicator appears in the instrument cluster when cruise is turned on.

+RES (Resume/Accelerate): Press the control up briefly to resume to a previously set speed or to increase vehicle speed if the cruise control is already activated. To increase speed by 1 km/h (1 mph), press +RES up to the first detent. To increase speed by 5 km/h (5 mph) increments, press +RES up to the second detent.

SET− (Set/Coast): Press the control down briefly to set the speed and activate cruise control or to decrease vehicle speed if the cruise control is already activated. To decrease speed by 1 km/h (1 mph), press SET− down to the first detent. To decrease speed by 5 km/h (5 mph) increments, press SET− down to the second detent.

(Cancel): Press to disengage cruise control without erasing the set speed from memory.

Setting Cruise Control

If the cruise button is on when not in use, it could get pressed and go into cruise when not desired. Keep the cruise control button off when cruise is not being used.

1. Press .
2. Get up to the desired speed.
3. Press and release the SET− control on the steering wheel.
4. Remove foot from the accelerator.

When the cruise control has been set to the desired speed, a green cruise control indicator appears on the instrument cluster and a cruise set speed message appears on the Head-Up Display (HUD), if equipped.

Resuming a Set Speed

If the cruise control is set at a desired speed and then the brakes are applied, the cruise control is disengaged without erasing the set speed from memory.

Once the vehicle speed reaches about 40 km/h (25 mph) or more, press the +RES control to the first detent briefly on the steering wheel. The vehicle returns to the previous set speed.

Increasing Speed While Cruise Control is at a Set Speed

If the cruise control system is already activated:

- Press and hold +RES up until the desired speed is reached, then release it.
- To increase vehicle speed in small increments, press +RES up to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) faster.
- To increase vehicle speed in larger increments, press +RES up to the second detent. For each press, the vehicle goes about 5 km/h (5 mph) faster.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster on page 5-9*. The increment value used depends on the units displayed.

Reducing Speed While Cruise Control is at a Set Speed

If the cruise control system is already activated:

- Press and hold SET− down until the desired lower speed is reached, then release it.
- To decrease the vehicle speed in small increments, press SET− down to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) slower.
- To decrease the vehicle speed in larger increments, press SET− down to the second detent. For each press, the vehicle goes about 5 km/h (5 mph) slower.

The cruise control system may automatically brake to slow the vehicle down.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster on page 5-9*. The increment value used depends on the units displayed.

Passing Another Vehicle While Using Cruise Control

Use the accelerator pedal to increase the vehicle speed. When you take your foot off the pedal, the vehicle will slow down to the previous set cruise speed.

Using Cruise Control on Hills

How well the cruise control will work on hills depends upon the vehicle speed, load, and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain the vehicle speed. When going downhill, you might have to brake or shift to a lower gear to keep the vehicle speed down. If the brake is applied, the cruise control disengages.

Ending Cruise Control

There are three ways to end cruise control:

- Step lightly on the brake pedal.
- Press .
- Press .

Erasing Speed Memory

The cruise control set speed is erased from memory if is pressed or if the ignition is turned off.

Adaptive Cruise Control

For vehicles with Adaptive Cruise Control (ACC), it allows the driver to select the cruise control set speed and following gap. Read this entire section before using this system. The following gap is the following time between your vehicle and a vehicle detected directly ahead in your path, moving in the same direction. If no vehicle is detected in your path, ACC works like regular

cruise control. ACC uses camera and radar sensors. See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

If a vehicle is detected in your path, ACC can apply acceleration or limited, moderate braking to maintain the selected following gap. To disengage ACC, apply the brake. If ACC is controlling your vehicle speed when the traction control system (TCS) activates, the ACC will automatically disengage. See *Traction Control System (TCS) on page 9-28*. When road conditions allow ACC to be safely used, the ACC can be turned back on.

⚠ WARNING

ACC has limited braking ability and may not have time to slow the vehicle down enough to avoid a collision with another vehicle you are following. This can occur when vehicles suddenly slow or stop ahead, or enter your lane. Also see “Alerting the Driver” in this section. Complete attention is always required while driving and you should be ready to take action and apply the brakes. See *Defensive Driving on page 9-3*.

⚠ WARNING

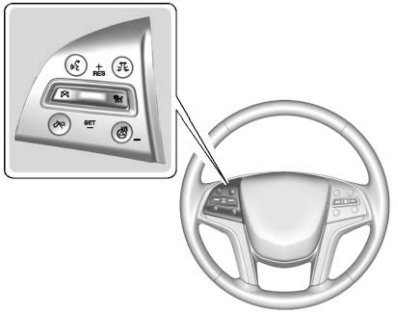
Adaptive Cruise Control will not detect or brake for children, pedestrians, animals, or other objects.

(Continued)

WARNING (Continued)

Do not use Adaptive Cruise Control when:

- On winding and hilly roads or when the sensors are blocked by snow, ice, or dirt. The system may not detect a vehicle ahead. Keep the entire front of the vehicle clean.
- Visibility is low, such as in fog, rain, or snow conditions. Adaptive Cruise Control performance is limited under these conditions.
- On slippery roads where fast changes in tire traction can cause excessive wheel slip.



(On/Off): Press to turn the system on or off.

+RES (Resume/Accelerate): Press the control up briefly to resume the previous set speed or to increase vehicle speed if ACC is already activated. To increase speed by 1 km/h (1 mph), press +RES up to the first detent. To increase speed by 5 km/h (5 mph) increments, press +RES up to the second detent.

SET– (Set/Coast): Press the control down briefly to set the speed and activate ACC or to decrease vehicle speed if ACC is already activated. To decrease speed by 1 km/h (1 mph), press SET− down to the first detent. To decrease speed by 5 km/h (5 mph) increments, press SET− down to the second detent.

(Cancel): Press to disengage ACC without erasing the selected set speed.

(Follow Distance Gap): Press to select a following gap time (or distance) setting for ACC. Select a gap setting: Far, Medium, or Near.

Setting Adaptive Cruise Control

If the cruise button is on when not in use, it could get pressed and go into cruise when not desired. Keep the cruise control button off when cruise is not being used.

Select the set speed desired for cruise. This is the vehicle speed when no vehicle is detected in its path.

ACC will not set at a speed less than 40 km/h (25 mph), although it can be resumed when driving at lower speeds.

To set ACC:

1. Press .
2. Get up to the desired speed.
3. Press and release the SET– control on the steering wheel.
4. Remove foot from the accelerator.

After ACC is set, it may immediately apply the brakes if a vehicle ahead is closer than the selected following gap.

The ACC indicator displays on the instrument cluster and Head-Up Display (HUD). When ACC is active, the indicator will be lit.

Be mindful of speed limits, surrounding traffic speeds, and weather conditions when selecting the set speed.

Resuming a Set Speed

If the ACC is set at a desired speed and then the brakes are applied, ACC is disengaged without erasing the set speed from memory.

To begin using ACC again, press +RES up briefly on the steering wheel. The vehicle returns to the previous set speed.

Increasing Speed While ACC is at a Set Speed

If ACC is already activated, do one of the following:

- Use the accelerator to get to the higher speed. Press SET– down. Release the control and the accelerator pedal. The vehicle will now cruise at the higher speed.

  When the accelerator pedal is pressed, ACC will not brake because it is overridden. A warning message will appear on the Driver Information Center (DIC). See *Cruise Control Messages on page 5-36*.
- Press and hold +RES up until the desired set speed appears on the display, then release it.
- To increase vehicle speed in small increments, press +RES up to the first detent. For each press, the vehicle goes 1 km/h (1 mph) faster.
- To increase vehicle speed in larger increments, press +RES up to the second detent. For each press, the vehicle goes 5 km/h (5 mph) faster.

When it is determined that there is no vehicle ahead or the vehicle is beyond the selected following gap, then the vehicle speed will increase to the set speed.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster on page 5-9*. The increment value used depends on the units displayed.

Reducing Speed While ACC is at a Set Speed

If ACC is already activated, do one of the following:

- Use the brake to get to the desired lower speed. Press SET– down and release the accelerator pedal. The vehicle will now cruise at the lower speed.

- Press and hold SET– down until the desired lower speed is reached, then release it.
- To decrease the vehicle speed in smaller increments, press SET– down to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) slower.
- To decrease the vehicle speed in larger increments, press SET– down to the second detent. For each press, the vehicle goes about 5 km/h (5 mph) slower.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster on page 5-9*. The increment value used depends on the units displayed.

Selecting the Follow Distance Gap

When a slower moving vehicle is detected ahead, ACC will adjust the vehicle's speed and attempt to maintain the follow distance gap selected.

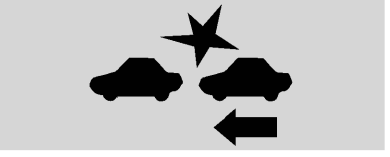
Press on the steering wheel to adjust the following gap. Each press cycles the gap button through three settings: Far, Medium, or Near.

When pressed, the current gap setting displays briefly on the instrument cluster and HUD (if equipped). The gap setting will be maintained until it is changed.

Since each gap setting corresponds to a following time (Far, Medium, or Near), the following distance will vary based on vehicle speed. The faster the vehicle speed, the further back your vehicle will follow a vehicle detected ahead. Consider traffic and weather conditions when selecting the following gap. The range of selectable gaps may not be appropriate for all drivers and driving conditions.

Changing the gap setting automatically changes the alert timing sensitivity (Far, Medium, or Near) for the Forward Collision Alert (FCA) feature. See *Forward Collision Alert (FCA) System on page 9-47*.

Alerting the Driver



If ACC is engaged, driver action may be required when:

- ACC cannot apply sufficient braking because of approaching a vehicle too rapidly.
- A temporary condition prohibits ACC from operating. See *Vehicle Messages on page 5-34*.
- A malfunction is detected in the system. See *Vehicle Messages on page 5-34*.

When any of these conditions occur, the collision alert symbol on the HUD (if equipped) will flash on the windshield. Either eight beeps will

sound from the front, or both sides of the Safety Alert Seat will pulse five times. See “Collision/Detection Systems” under *Vehicle Personalization on page 5-45*.

See *Defensive Driving on page 9-3*.

Approaching and Following a Vehicle

The vehicle ahead symbol is in the instrument cluster and HUD display (if equipped).

The vehicle ahead symbol only displays when a vehicle is detected in your vehicle’s path.

If this symbol is not displaying, ACC will not respond to or brake to vehicles ahead.

ACC automatically slows the vehicle down and adjusts vehicle speed to follow the vehicle in front at the selected follow gap. The vehicle speed increases or decreases to follow the vehicle in front of you, but will not exceed the set speed. It may apply limited braking, if necessary. When braking is active, the brake lights will come on. The automatic braking may feel or sound different than if the brakes were applied manually. This is normal.

Stationary or Very Slow-Moving Objects

⚠ WARNING

Adaptive Cruise Control (ACC) may not detect and react to stopped or slow-moving vehicles ahead of you. For example, the system will not brake for a vehicle that it has never detected moving. This can occur in stop-and-go traffic or when a vehicle suddenly

(Continued)

WARNING (Continued)

appears due to a vehicle ahead changing lanes. Your vehicle may not stop and could cause a crash. Use caution when using ACC. Your complete attention is always required while driving and you should be ready to take action and apply the brakes.

ACC Automatically Disengages

ACC may automatically disengage and the driver will need to manually apply the brakes to slow the vehicle when:

- The sensors are blocked.
- There is no traffic or other objects to detect.
- There is a fault in the system.

The ACC active symbol will not be displayed when ACC is no longer active.

Notification to Resume ACC

ACC will maintain a follow gap behind a detected vehicle and slow your vehicle to a stop behind that vehicle.

If the vehicle ahead has driven away and ACC has not resumed, the vehicle ahead symbol will flash as a reminder. In addition, the left and right sides of the Safety Alert Seat will pulse three times, or three beeps will sound. See ”Alert Type” and “Go Notifier” in “Collision/ Detection Systems” under *Vehicle Personalization on page 5-45*.

When the vehicle ahead drives away, press RES+ or the accelerator pedal to resume cruise control. If stopped for more than two minutes or if the driver door is opened and the driver safety belt is unbuckled, the ACC automatically applies the electric parking brake to hold the vehicle. The electric parking brake status light will turn on. See *Electric Parking Brake on page 9-26*. To resume ACC and release the electric parking brake, press the accelerator pedal and then RES+.

⚠ WARNING

If ACC has stopped the vehicle, and if ACC is disengaged, turned off, or canceled, the vehicle will no longer be held at a stop. The vehicle can move. When ACC is holding the vehicle at a stop, always be prepared to manually apply the brakes.

⚠ WARNING

Leaving the vehicle without placing it in P (Park) can be dangerous. Do not leave the vehicle while it is being held at a stop by ACC. Always place the vehicle in P (Park) and turn off the ignition before leaving the vehicle.

ACC Override

If using the accelerator pedal while ACC is active, a DIC warning message will indicate that automatic braking will not occur. See *Vehicle Messages on page 5-34*. ACC will resume operation when the accelerator pedal is not being pressed.

⚠ WARNING

The ACC will not automatically apply the brakes if your foot is resting on the accelerator pedal. You could crash into a vehicle ahead of you.

Curves in the Road

⚠ WARNING

On curves, ACC may not detect a vehicle ahead in your lane. You could be startled if the vehicle

(Continued)

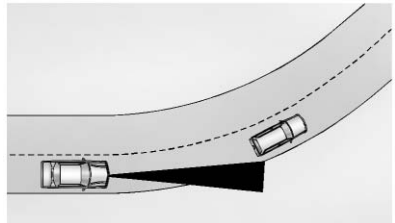
WARNING (Continued)

accelerates up to the set speed, especially when following a vehicle exiting or entering exit ramps. You could lose control of the vehicle or crash. Do not use ACC while driving on an entrance or exit ramp. Always be ready to use the brakes if necessary.

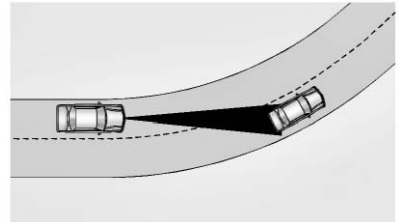
⚠ WARNING

On curves, ACC may respond to a vehicle in another lane, or may not have time to react to a vehicle in your lane. You could crash into a vehicle ahead of you, or lose control of your vehicle. Give extra attention in curves and be ready to use the brakes if necessary. Select an appropriate speed while driving in curves.

ACC may operate differently in a sharp curve. It may reduce the vehicle speed if the curve is too sharp.



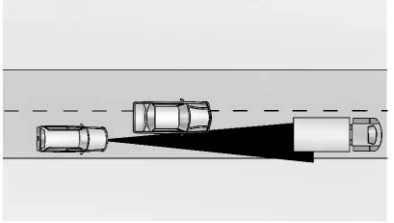
When following a vehicle and entering a curve, ACC may not detect the vehicle ahead and accelerate to the set speed. When this happens, the vehicle ahead symbol will not appear.



ACC may detect a vehicle that is not in your lane and apply the brakes.

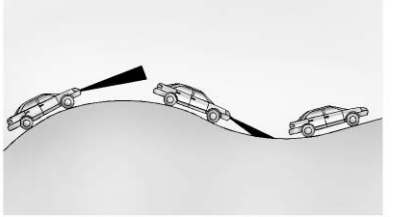
ACC may occasionally provide an alert and/or braking that is considered unnecessary. It could respond to vehicles in different lanes, signs, guardrails, and other stationary objects when entering or exiting a curve. This is normal operation. The vehicle does not need service.

Other Vehicle Lane Changes



ACC will not detect a vehicle ahead until it is completely in the lane. The brakes may need to be manually applied.

Do Not Use ACC on Hills and When Towing a Trailer



Do not use ACC when driving on steep hills or when towing a trailer. ACC will not detect a vehicle in the lane while driving on steep hills. The driver will often need to take over acceleration and braking on steep hills, especially when towing a trailer. If the brakes are applied, the ACC disengages.

Disengaging ACC

There are three ways to disengage ACC:

- Step lightly on the brake pedal.
- Press .
- Press .

Erasing Speed Memory

The cruise control set speed is erased from memory if is pressed or if the ignition is turned off.

Cleaning the Sensing System

The camera sensor on the back of the rearview mirror and the radar sensors on the front of the vehicle can become blocked by snow, ice, dirt, or mud. These areas need to be cleaned for ACC to operate properly.

For cleaning instructions, see “Washing the Vehicle” under *Exterior Care on page 10-76*.

System operation may also be limited under snow, heavy rain, or road spray conditions.

Driver Assistance Systems

This vehicle may have features that work together to help avoid crashes or reduce crash damage while driving, backing, and parking. Read this entire section before using these systems.

⚠ WARNING

Do not rely on the Driver Assistance Systems. These systems do not replace the need for paying attention and driving safely. You may not hear or feel alerts or warnings provided by these systems. Failure to use proper care when driving may result in injury, death, or vehicle damage. See *Defensive Driving on page 9-3*.

Under many conditions, these systems will not:

(Continued)

WARNING (Continued)

- Detect children, pedestrians, bicyclists, or animals.
- Detect vehicles or objects outside the area monitored by the system.
- Work at all driving speeds.
- Warn you or provide you with enough time to avoid a crash.
- Work under poor visibility or bad weather conditions.
- Work if the detection sensor is not cleaned or is covered by ice, snow, mud, or dirt.

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

Audible or Safety Alert Seat

Some driver assistance features alert the driver of obstacles by beeping. To change the volume of the warning chime, see “Comfort and Convenience” under *Vehicle Personalization on page 5-45*.

If equipped with the Safety Alert Seat, the driver seat cushion may provide a vibrating pulse alert instead of beeping. To change this, see “Collision/Detection Systems” under *Vehicle Personalization on page 5-45*.

Assistance Systems for Parking or Backing

When the vehicle is in R (Reverse), the Rear Vision Camera (RVC) and Rear Parking Assist may help the driver to avoid a crash or to reduce crash damage. Some models may also have the Rear Automatic Braking and Backing Warning System, Rear Cross Traffic Alert (RCTA), and/or Front Parking Assist.

When the vehicle is shifted into R (Reverse), the RVC displays an image of the area behind the vehicle in the center stack display. The previous screen displays when the vehicle is shifted out of R (Reverse) after a short delay. To cancel the delay, press a button on the infotainment system, shift into P (Park), or reach a vehicle speed of 8 km/h (5 mph).

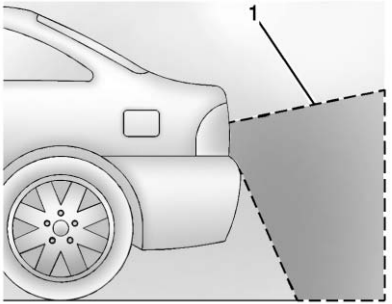
⚠ WARNING

The RVC system does not display children, pedestrians, bicyclists, animals, or any other object located outside the camera's field of view, below the bumper, or under the vehicle. Perceived distances may be different from actual distances. Do not back the vehicle using only the RVC screen, during longer, higher speed backing maneuvers, or where there could be cross

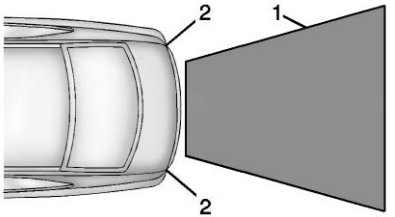
(Continued)

WARNING (Continued)

traffic. Failure to use proper care before backing may result in injury, death, or vehicle damage. Always check behind and around the vehicle before backing.



1. View Displayed by the Camera



1. View Displayed by the Camera
2. Corners of the Rear Bumper

Displayed images may be farther or closer than they appear. The area displayed is limited and objects that are close to either corner of the bumper or under the bumper do not display.

A warning triangle may display on the RVC screen to show where the Ultrasonic Rear Parking Assist (URPA) has detected an object. This triangle changes from amber to red and increases in size the closer the object.

On vehicles with the Rear Cross Traffic Alert (RCTA), a red warning triangle with an arrow may also

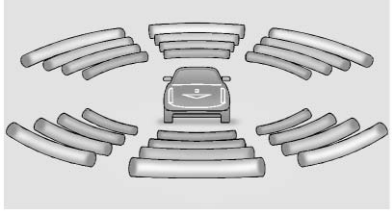
display on the RVC screen to warn of traffic coming from either direction. This system detects objects coming from up to 30 m (98 ft) from the left or right side of the vehicle. When an object is detected, either three beeps sound from the left or right or three Safety Alert Seat pulses occur on the left or right side, depending on the direction of the detected vehicle.

Use caution while changing lanes when towing a trailer, as the RCTA detection zones that extend out from the back of the vehicle do not move further back when a trailer is towed.

With URPA, as the vehicle backs up at speeds of less than 8 km/h (5 mph), the sensors on the rear bumper detect objects up to 2.5 m (8 ft) behind the vehicle that are within a zone 25 cm (10 in) high off the ground and below bumper level.

⚠ WARNING

The parking assist system does not detect children, pedestrians, bicyclists, animals, or objects located below the bumper or that are too close or too far from the vehicle. It is not available at speeds greater than 8 km/h (5 mph). To prevent injury, death, or vehicle damage, even with parking assist, always check the area around the vehicle and check all mirrors before moving forward or backing.



The instrument cluster parking assist display has bars that show “distance to object” and object location information for URPA, and on some vehicles, for the Front Parking Assist system. As the object gets closer, more bars light up. When an object is first detected in the rear, one beep will be heard from the rear, or both sides of the Safety Alert Seat will pulse two times. When an object is very close (<0.6 m (2 ft) in the vehicle rear, or <0.3 m (1 ft) in the vehicle front), five beeps will sound from the front or rear, or both sides of the Safety Alert Seat will pulse five times. Beeps for Front Parking Assist are higher pitched than for Rear Parking Assist.

Vehicles with Adaptive Cruise Control (ACC) have the Backing Warning System, which is designed to help avoid backing crashes. The system can warn of rear objects when backing up at speeds greater than 8 km/h (5 mph).

The Backing Warning System will beep once from the rear when an object is first detected, or pulse twice on both sides of the Safety Alert Seat. When the system detects a potential crash, beeps will be heard from the rear, or five pulses will be felt on both sides of the Safety Alert Seat. There may also be a brief, sharp application of the brakes.

⚠ WARNING

The Backing Warning System only operates at speeds greater than 8 km/h (5 mph). It does not detect children, pedestrians, bicyclists, animals, or objects below the bumper or that are too close or too far from the vehicle. In some situations, such as at higher backing speeds, there may not be enough time for the short, sharp application of the vehicle brake system to occur. To prevent

(Continued)

WARNING (Continued)

injury, death, or vehicle damage, even with the Backing Warning System, always check the area around the vehicle and check all mirrors before backing.

Vehicles with Adaptive Cruise Control (ACC) also have the Rear Automatic Braking system, which is designed to help avoid or reduce the harm caused by backing crashes. If the system detects the vehicle is backing too fast to avoid a crash with a detected object, it may automatically brake hard to a stop.

⚠ WARNING

Rear Automatic Braking may not avoid many types of backing crashes. Do not wait for the automatic braking to apply. This system is not designed to replace

(Continued)

WARNING (Continued)

driver braking, but only acts when the vehicle may not stop in time. The system, in some situations or environments, may not brake or may not brake in time to avoid a crash. It does not detect children, pedestrians, bicyclists, animals, or objects below the bumper or that are too close or too far from the vehicle. To prevent injury, death, or vehicle damage, even with Rear Automatic Braking, always check the area around the vehicle before and while backing.

Pressing the brake pedal after the vehicle comes to a stop will release the Rear Automatic Braking. If the brake pedal is not pressed within two seconds after the stop, the electric parking brake is set. When it is safe, pressing the accelerator pedal firmly at any time will override the Rear Automatic Braking.

⚠ WARNING

There may be instances where unexpected or undesired automatic braking occurs. If this happens, either press the brake pedal or firmly press the accelerator pedal to release the brakes from the Rear Automatic Braking system. Check the RVC screen and check the area around the vehicle before proceeding.

Turning the Features On or Off

The P button on the center stack is used to turn on or off the Front and Rear Parking Assist, Rear Automatic Braking, and Backing Warning System at the same time. The indicator light next to the button comes on when the features are on and turns off when the features have been disabled.

The Rear Vision Camera (RVC) can be turned on or off through the Settings menu on the infotainment system. The parking assist symbols, guidance lines, and Rear Cross Traffic Alert (RCTA) can also be turned off. To turn the RVC system, symbols, guidance lines, or RCTA on or off:

1. On the infotainment system, press the Settings screen button, or turn the MENU knob to highlight Settings and press MENU.
2. Select Rear Camera.
3. Press Rear Camera Display, Park Assist Symbols, Guidance Lines, or Rear Cross Traffic Alert and then select OFF or ON.

Assistance Systems for Driving

If equipped, when driving the vehicle, Forward Collision Alert (FCA), Lane Departure Warning (LDW), Side Blind Zone Alert (SBZA), and/or the Active Emergency Braking System can help to avoid a crash or reduce crash damage.

Forward Collision Alert (FCA) System

The FCA system may help to avoid or reduce the harm caused by front-end crashes. FCA provides a flashing alert on the windshield, and beeps or pulses the Safety Alert Seat when approaching a vehicle directly ahead too quickly. FCA also provides a visual alert if following another vehicle much too closely.

FCA detects vehicles within a distance of approximately 60 m (197 ft) and operates at speeds above 40 km/h (25 mph). If the

vehicle has Adaptive Cruise Control (ACC), it can detect vehicles to distances of approximately 110 m (360 ft) and operates at all speeds. See *Adaptive Cruise Control on page 9-34*.

⚠ WARNING

FCA is a warning system and does not apply the brakes. When approaching a slower-moving or stopped vehicle ahead too rapidly, or when following a vehicle too closely, FCA may not provide a warning with enough time to help avoid a crash. FCA does not warn of pedestrians, animals, signs, guardrails, bridges, construction barrels, or other objects. Be ready to take action and apply the brakes. For more information, see *Defensive Driving on page 9-3*.

FCA can be disabled through vehicle personalization. See the "Auto Collision Preparation" portion of "Collision/Detection Systems" under *Vehicle Personalization on page 5-45*.

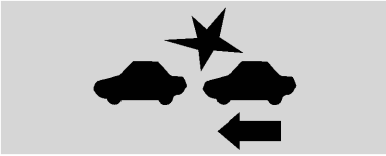
Detecting the Vehicle Ahead

FCA warnings will not occur unless the FCA system detects a vehicle ahead. The vehicle-ahead indicator will display green when a vehicle is detected in front. Vehicles may not be detected on curves, highway exit ramps, or hills; or due to poor visibility. FCA will not detect another vehicle ahead until it is completely in the driving lane.

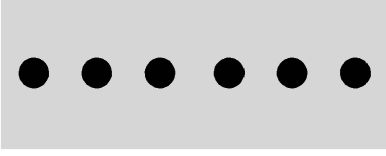
⚠ WARNING

FCA does not provide a warning to help avoid a crash, unless it detects a vehicle. FCA may not detect a vehicle ahead if the FCA sensor is blocked by dirt, snow, or ice, or if the windshield is damaged. It may also not detect a vehicle on winding or hilly roads, or in conditions that can limit visibility such as fog, rain, or snow, or if the headlamps or windshield are not cleaned or in proper condition. Keep the windshield, headlamps, and FCA sensors clean and in good repair.

Collision Alert



With Head-Up Display



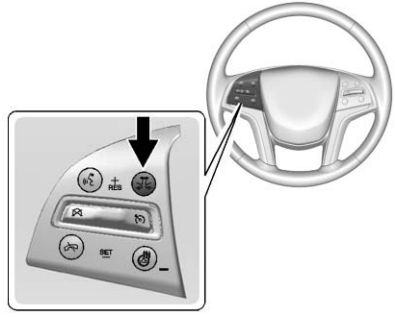
Without Head-Up Display

When your vehicle approaches another vehicle too rapidly, the red lights, or the collision alert symbol on the HUD, will flash on the windshield. Either eight beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times.

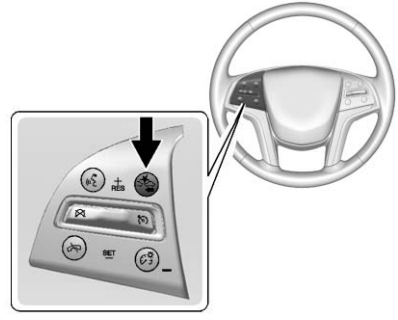
Tailgating Alert

The vehicle-ahead indicator will display amber when you are following a vehicle ahead much too closely.

Selecting the Alert Timing



With Adaptive Cruise Control



Without Adaptive Cruise Control

Press the collision alert/following gap button on the steering wheel to set the FCA timing to Far, Medium, Near, or on some vehicles, Off. The first button press shows the current setting on the DIC. Additional button presses will change this setting. The chosen setting will remain until it is changed and will affect the timing of both the Collision Alert and the Tailgating Alert features. The timing of both alerts will vary based on vehicle speed. The faster the vehicle speed, the farther away the alert will occur. Consider traffic and

weather conditions when selecting the alert timing. The range of selectable alert timing may not be appropriate for all drivers and driving conditions.

Changing the FCA timing setting automatically changes the following gap setting (Far, Medium, or Near) for the Adaptive Cruise Control (ACC) feature.

Unnecessary Alerts

FCA may provide unnecessary alerts for turning vehicles, vehicles in other lanes, objects that are not vehicles, or shadows. These alerts are normal operation and the vehicle does not need service.

Cleaning the System

If the FCA system does not seem to operate properly, cleaning the outside of the windshield in front of the camera sensor and the front of the vehicle may correct the issue.

Active Emergency Braking System

If the vehicle has Adaptive Cruise Control (ACC) it also has the Active Emergency Braking System, which includes Intelligent Brake Assist (IBA) and the Automatic Collision Preparation (ACP) System.

Intelligent Brake Assist (IBA)

IBA may activate when the brake pedal is applied quickly by providing a boost to braking based on the speed of approach and distance to a vehicle ahead.

Minor brake pedal pulsations or pedal movement during this time is normal and the brake pedal should continue to be applied as needed. IBA will automatically disengage when the brake pedal is released or brake pedal pressure is quickly decreased.

⚠ WARNING

IBA may increase vehicle braking in situations when it may not be necessary. You could block the flow of traffic. If this occurs, take your foot off the brake pedal and then apply the brakes as needed.

Automatic Collision Preparation (ACP) System

ACP may help reduce crash damage by applying the vehicle's brake system and has a detection range of approximately 60 m (197 ft). Braking can only occur if a vehicle is detected ahead. This is shown by the FCA vehicle-ahead indicator being lit. See *Forward Collision Alert (FCA) System on page 9-47*.

⚠ WARNING

ACP is an emergency crash preparation feature and is not designed to avoid crashes. Do not rely on ACP to brake the vehicle.

ACP may not:

- Respond to stopped vehicles, pedestrians, or animals.
- Detect a vehicle ahead on winding or hilly roads.
- Detect a stopped or slow-moving vehicle or other object ahead.
- Detect a vehicle when weather limits visibility, such as in fog, rain, or snow. In these situations, ACP sensor performance is limited.

(Continued)

WARNING (Continued)

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

Brake Preparation

When quickly approaching a vehicle ahead, Brake Preparation reduces brake response time by having the brake system prepared for driver braking to occur more rapidly.

Automatic Braking

Automatic Braking applies the brakes, even if the driver has not applied the brakes, in many imminent front-end crash situations to help reduce crash damage. It may even help avoid some crashes at very low speeds.

Automatic Braking may slow the vehicle to a complete stop to try to avoid a potential crash. If this happens, Automatic Braking will hold the vehicle at a stop until the brake pedal is pressed. A firm press of the accelerator pedal will also release Automatic Braking.

⚠ WARNING

Automatic Braking may automatically brake the vehicle in situations where it may be unnecessary. It could respond to a turning vehicle ahead, guardrails, signs, and other non-moving objects. This could be uncomfortable and startling. To override Automatic Braking, firmly press the accelerator pedal, if it is safe to do so.

Automatic Braking can be disabled or reduced through vehicle personalization. See the “Auto Collision Preparation” portion of “Collision/Detection Systems” under *Vehicle Personalization on page 5-45*.

⚠ WARNING

Using the Automatic Collision Preparation System while towing a trailer could cause you to lose control of the vehicle and crash. Turn the system off when towing a trailer.

Side Blind Zone Alert (SBZA)

If available, the Side Blind Zone Alert system is a lane-changing aid that assists drivers with avoiding crashes that occur with vehicles in the side blind zone (or spot) areas.

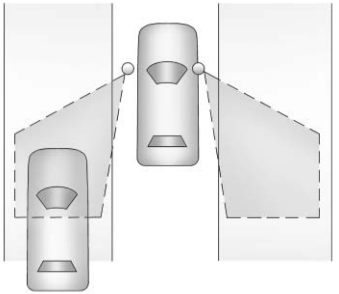
⚠ WARNING

SBZA does not detect vehicles rapidly approaching outside of the side blind zones, pedestrians, bicyclists, or animals. Failure to use proper care when changing

(Continued)

WARNING (Continued)

lanes may result in injury, death, or vehicle damage. Before making a lane change, always check mirrors, glance over your shoulder, and use the turn signals.



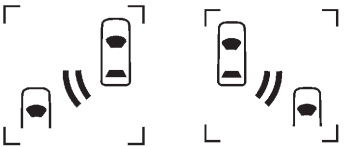
SBZA Detection Zones

The SBZA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). This zone starts at each side mirror and goes back approximately 5 m (16 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2 m (6 ft) off the ground.

Use caution while changing lanes when towing a trailer, as the SBZA detection zones that extend back from the side of the vehicle do not move further back when a trailer is towed.

How the System Works

The SBZA symbol lights up in the side mirrors when the system detects a vehicle in the side blind zone, indicating it may be unsafe to change lanes. Before making a lane change, check the SBZA display, check mirrors, glance over your shoulder, and use the turn signals.



Left Side Mirror Display **Right Side Mirror Display**

When the vehicle is started, both outside mirror SBZA displays will briefly come on to indicate the system is operating. When the vehicle is moving forward, the left- or right-side mirror display will light up if a vehicle is detected in that blind zone. If the turn signal is activated and a vehicle is also detected on the same side, the display will flash as an extra warning not to change lanes.

SBZA displays may come on when a passed vehicle remains in or drops back into the detection zone.

SBZA can be disabled through vehicle personalization. See “Collision/Detection Systems” under *Vehicle Personalization on page 5-45*. If SBZA is disabled by the driver, the SBZA mirror displays will not light up.

When the System Does Not Seem to Work Properly

SBZA may not always alert the driver to vehicles in the blind zone, especially in wet conditions. The system does not need to be serviced. The system may light up due to guardrails, signs, trees, shrubs, and other non-moving objects. This is normal system operation; the vehicle does not need service.

SBZA may not operate when the SBZA sensors in the left or right corners of the rear bumper are covered with mud, dirt, snow, ice, or slush, or in heavy rainstorms. For cleaning instructions, see "Washing the Vehicle" under *Exterior Care on page 10-76*. If the DIC still displays the SIDE DETECTION SYSTEM UNAVAILABLE message after cleaning the rear bumper corners, see your dealer.

If the SBZA displays do not light up when vehicles are in the blind zone and the system is clean, the system may need service. Take the vehicle to your dealer.

The SBZA displays may remain on if a trailer is attached to the vehicle, or if a bicycle or object is extending out to either side of the vehicle.

When SBZA is disabled for any reason other than the driver turning it off, the Side Blind Zone Alert On option will not be available on the personalization menu.

FCC Information

See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

Lane Departure Warning (LDW)

LDW may help avoid crashes due to unintentional lane departures. It may provide a warning if the vehicle is crossing a lane without using a turn signal. LDW uses a camera sensor

to detect the lane markings. It only operates at speeds of 56 km/h (35 mph) or greater.

When the vehicle crosses a detected lane marking, the LDW indicator will flash and either three beeps will be sounded from the left or right side, or three Safety Alert Seat pulses will occur on the left or right side of the seat, depending on the lane departure direction. LDW will not warn if the turn signal is on or if a sharp maneuver is made.

⚠ WARNING

The LDW system is an aid to help the vehicle stay in the driving lane. It does not steer the vehicle. The LDW system may not:

- Provide enough time to avoid a crash.
- Detect lane markings under bad weather conditions or if the windshield is dirty.

(Continued)

WARNING (Continued)

- Detect lane markings and will not detect road edges.
- Warn that the vehicle is crossing a lane marking if the system does not detect the lane marking.

If LDW only detects lane markings on one side of the road, it will only warn you when departing the lane on the side where it has detected a lane marker. Even with LDW, always keep your attention on the road and maintain proper vehicle position within the lane, or vehicle damage, injury, or death could occur. Always keep the windshield clean and do not use LDW in bad weather conditions.

How the System Works

The LDW camera sensor is on the windshield ahead of the rearview mirror.

To turn LDW on and off, press on the center stack to the left of the infotainment screen. The control indicator will light when LDW is on.

When the vehicle is started, the LDW indicator on the instrument cluster will come on briefly.

If LDW is on, the LDW indicator will appear green if the system detects a left or right lane marking while the vehicle is traveling at 56 km/h (35 mph) or greater. If the vehicle crosses a detected lane marking without using the turn signal, this indicator will change to amber and flash. In addition, three beeps will

be sounded from the left or right side or the Safety Alert Seat will pulse three times on either the left or right side of the seat, depending on the lane departure direction.

When the System Does Not Seem to Work Properly

If the LDW symbol does not appear when the system is on and the vehicle is traveling at least 56 km/h (35 mph):

- The lane markings on the road may not be seen.
- The camera sensor may be blocked by dirt, snow, or ice.
- The windshield may be damaged.
- The weather may be limiting visibility.

This is normal operation; the vehicle does not need service. Clean the windshield.

Lane markings may not be detected on curves, highway exit ramps, or hills; or due to poor visibility.

If the LDW camera system does not seem to operate properly, cleaning the outside of the windshield in front of the camera sensor may correct the issue.

⚠ WARNING

If the LDW camera sensor is blocked by dirt, snow, or ice, or if the headlamps are not cleaned or properly aimed, or if the windshield is dirty or damaged, it may not detect the lanes ahead. LDW may not help avoid a crash under these conditions. Keep the headlamps cleaned and properly aimed and the windshield clean.

LDW warnings may occur due to tar marks, shadows, cracks in the road, or other road imperfections. This is normal system operation; the vehicle does not need service.

Fuel

Use of the recommended fuel is an important part of the proper maintenance of this vehicle. To help keep the engine clean and maintain optimum vehicle performance, we recommend the use of gasoline advertised as TOP TIER Detergent Gasoline.

Look for the TOP TIER label on the fuel pump to ensure gasoline meets enhanced detergency standards developed by auto companies. A list of marketers providing TOP TIER Detergent Gasoline can be found at www.toptiergas.com. TOP TIER gasoline is only available in the U.S. and Canada.

Recommended Fuel

Use regular unleaded gasoline with a posted octane rating of 87 or higher. If the octane rating is less than 87, an audible knocking noise, commonly referred to as spark knock, might be heard when driving. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. If heavy knocking is heard when using gasoline rated at 87 octane or higher, the engine needs service.

Gasoline Specifications

At a minimum, gasoline should meet ASTM specification D 4814. Some gasolines contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). We recommend against the use of gasolines containing MMT. See *Fuel Additives on page 9-56*.

California Fuel Requirements

If the vehicle is certified to meet California Emissions Standards, it is designed to operate on fuels that meet California specifications. See the underhood emission control label. If this fuel is not available in states adopting California Emissions Standards, the vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance might be affected. The malfunction indicator lamp could turn on and the vehicle might fail a smog-check test. See *Malfunction Indicator Lamp on page 5-18*. If this occurs, return to your authorized dealer for diagnosis. If it is determined that the condition is caused by the type of fuel used, repairs might not be covered by the vehicle warranty.

Fuels in Foreign Countries

Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel would not be covered by the vehicle warranty.

To check the fuel availability, ask an auto club, or contact a major oil company that does business in the country where you will be driving.

Fuel Additives

To provide cleaner air, all gasolines in the United States are now required to contain additives that help prevent engine and fuel system deposits from forming, allowing the

emission control system to work properly. In most cases, nothing should have to be added to the fuel. However, some gasolines contain only the minimum amount of additive required to meet U.S. Environmental Protection Agency regulations. To help keep fuel injectors and intake valves clean and avoid problems due to dirty injectors or valves, look for gasoline that is advertised as TOP TIER Detergent Gasoline. Look for the TOP TIER label on the fuel pump to ensure gasoline meets enhanced detergency standards developed by the auto companies. A list of marketers providing TOP TIER Detergent Gasoline can be found at www.toptiergas.com.

For customers who do not use TOP TIER Detergent Gasoline regularly, one bottle of GM Fuel System Treatment PLUS, added to the fuel tank at every engine oil change, can help clean deposits from fuel injectors and intake valves. GM Fuel System Treatment PLUS is the only gasoline additive recommended by General Motors. It is available at your dealer.

Gasolines containing oxygenates, such as ethers and ethanol, and reformulated gasolines might be available in your area. We recommend that you use these gasolines, if they comply with the specifications described earlier. However, E85 (85% ethanol) and other fuels containing more than 15% ethanol must not be used in vehicles that were not designed for those fuels.

Notice: **This vehicle was not designed for fuel that contains methanol. Do not use fuel containing methanol. It can corrode metal parts in the fuel system and also damage plastic and rubber parts. That damage would not be covered under the vehicle warranty.**

Some gasolines that are not reformulated for low emissions can contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT); ask the attendant where you buy gasoline whether the fuel contains MMT. We recommend against the use of such gasolines. Fuels containing MMT can reduce spark plug life and affect emission control system performance. The malfunction indicator lamp might turn on. If this occurs, return to your dealer for service.

Filling the Tank

⚠ WARNING

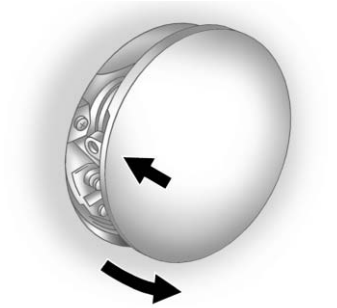
Fuel vapors and fuel fires burn violently and can cause injury or death.

- To help avoid injuries to you and others, read and follow all the instructions on the fuel pump island.
- Turn off the engine when refueling.

(Continued)

WARNING (Continued)

- Keep sparks, flames, and smoking materials away from fuel.
- Do not leave the fuel pump unattended.
- Do not reenter the vehicle while pumping fuel.
- Keep children away from the fuel pump and never let children pump fuel.
- Fuel can spray out if the refueling nozzle is inserted too quickly. This spray can happen if the tank is nearly full, and is more likely in hot weather. Insert the refueling nozzle slowly and wait for any hiss noise to stop prior to beginning to flow fuel



Locate the fuel door. The fuel gauge has an arrow to indicate the side of the vehicle the fuel door is on. To open the fuel door, push the rearward center edge in and release and it will open.

The vehicle has a capless refueling system and does not have a fuel cap. The filling nozzle must be fully inserted and latched prior to starting fuel flow.

Be careful not to spill fuel. Do not top off or overfill the tank and wait a few seconds before removing the nozzle. After initial shutoff, do not partially remove the nozzle to add more fuel as this will result in fuel spillage. Clean fuel from painted surfaces as soon as possible. See *Exterior Care on page 10-76*.

⚠ WARNING

If a fire starts while you are refueling, do not remove the nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.

Filling the Tank With a Portable Gas Can

If the vehicle runs out of fuel and must be filled from a portable gas can:

1. Locate the capless funnel adapter from under the carpet in the trunk.
2. Insert and latch the funnel into the capless fuel system.

⚠ WARNING

Attempting to refuel without using the funnel adapter may cause fuel spillage and damage the capless fuel system. This could cause a fire and you or others could be badly burned and the vehicle could be damaged.

3. Remove and clean the funnel adapter and return to the storage location.

Filling a Portable Fuel Container

⚠ WARNING

Filling a portable fuel container while it is in the vehicle can cause fuel vapors that can ignite either by static electricity or other

(Continued)

WARNING (Continued)

means. You or others could be badly burned and the vehicle could be damaged. Always:

- Use approved fuel containers.
- Remove container from vehicle, trunk, or pickup bed before filling.
- Place container on the ground.
- Place the nozzle inside the fill opening of the container before dispensing fuel, and keep it in contact with the fill opening until filling is complete.
- Do not smoke while pumping fuel.

Towing

General Towing Information

Only use towing equipment that has been designed for the vehicle. Contact your dealer or trailering dealer for assistance with preparing the vehicle for towing a trailer. Read the entire section before towing a trailer.

For towing a disabled vehicle, see *Towing the Vehicle on page 10-73*. For towing the vehicle behind another vehicle such as a motor home, see *Recreational Vehicle Towing on page 10-74*.

Driving Characteristics and Towing Tips

Driving with a Trailer

When towing a trailer:

- Become familiar with the state and local laws that apply to trailer towing.

- Do not tow a trailer during the first 800 km (500 mi) to prevent damage to the engine, axle, or other parts.
- Then during the first 800 km (500 mi) of trailer towing, do not drive over 80 km/h (50 mph) and do not make starts at full throttle.
- Vehicles can tow in D (Drive). Shift the transmission to a lower gear if the transmission shifts too often under heavy loads and/or hilly conditions.
- Do not use Adaptive Cruise Control when towing.
- The Automatic Collision Preparation System should be set to Off when towing. See *Active Emergency Braking System on page 9-50*.

⚠ WARNING

When towing a trailer, exhaust gases may collect at the rear of the vehicle and enter if the liftgate, trunk/hatch, or rear-most window is open.

When towing a trailer:

- Do not drive with the liftgate, trunk/hatch, or rear-most window open.
- Fully open the air outlets on or under the instrument panel.
- Also adjust the climate control system to a setting that brings in only outside air. See “Climate Control System” in the Index.

For more information about Carbon Monoxide, see *Engine Exhaust on page 9-21*.

Towing a trailer requires a certain amount of experience. The combination you are driving is longer and not as responsive as the vehicle itself. Get acquainted with the handling and braking of the rig before setting out for the open road.

Before starting, check all trailer hitch parts and attachments, safety chains, electrical connectors, lamps, tires, and mirrors. If the trailer has electric brakes, start the combination moving and then apply the trailer brake controller by hand to be sure the brakes work.

During the trip, check occasionally to be sure that the load is secure and the lamps and any trailer brakes still work.

Following Distance

Stay at least twice as far behind the vehicle ahead as you would when driving the vehicle without a trailer. This can help to avoid heavy braking and sudden turns.

Passing

More passing distance is needed when towing a trailer. The combination will not accelerate as quickly and is longer so it is necessary to go much farther beyond the passed vehicle before returning to the lane.

Backing Up

Hold the bottom of the steering wheel with one hand. To move the trailer to the left, move that hand to the left. To move the trailer to the right, move your hand to the right. Always back up slowly and, if possible, have someone guide you.

Making Turns

Notice: **Making very sharp turns while trailering could cause the trailer to come in contact with the vehicle. The vehicle could be damaged. Avoid making very sharp turns while trailering.**

When turning with a trailer, make wider turns than normal. Do this so the trailer will not strike soft shoulders, curbs, road signs, trees, or other objects. Avoid jerky or sudden maneuvers. Signal well in advance.

If the trailer turn signal bulbs burn out, the arrows on the instrument cluster will still flash for turns. It is important to check occasionally to be sure the trailer bulbs are still working.

Driving on Grades

Reduce speed and shift to a lower gear *before* starting down a long or steep downgrade. If the transmission is not shifted down, the brakes might get hot and no longer work well.

Vehicles can tow in D (Drive). Shift the transmission to a lower gear if the transmission shifts too often under heavy loads and/or hilly conditions.

When towing at high altitude on steep uphill grades, consider the following: Engine coolant will boil at a lower temperature than at normal altitudes. If the engine is turned off immediately after towing at high altitude on steep uphill grades, the vehicle may show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground, with the automatic transmission in P (Park) for a few minutes before turning the engine off. If the overheat warning comes on, see *Engine Overheating on page 10-14*.

Parking on Hills

⚠ WARNING

Parking the vehicle on a hill with the trailer attached can be dangerous. If something goes wrong, the rig could start to move.

(Continued)

WARNING (Continued)

People can be injured, and both the vehicle and the trailer can be damaged. When possible, always park the rig on a flat surface.

If parking the rig on a hill:

1. Press the brake pedal, but do not shift into P (Park) yet. Turn the wheels into the curb if facing downhill or into traffic if facing uphill.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the brake pedal. Then apply the parking brake and shift into P (Park).
5. Release the brake pedal.

Leaving After Parking on a Hill

1. Apply and hold the brake pedal.
2. Start the engine.
3. Shift into a gear.
4. Release the parking brake.
5. Let up on the brake pedal.
6. Drive slowly until the trailer is clear of the chocks.
7. Stop and have someone pick up and store the chocks.

Maintenance when Trailer Towing

The vehicle needs service more often when pulling a trailer. See *Maintenance Schedule on page 11-3*. Things that are especially important in trailer operation are automatic transmission fluid, engine oil, axle lubricant, belts, cooling system, and brake system. It is a good idea to inspect these before and during the trip.

Check periodically to see that all hitch nuts and bolts are tight.

Trailer Towing

Before pulling a trailer, there are three important considerations that have to do with weight:

- The weight of the trailer.
- The weight of the trailer tongue.
- The total weight on your vehicle's tires.

Weight of the Trailer

How heavy can a trailer safely be?

It should never weigh more than 454 kg (1,000 lbs). But even that can be too heavy.

It depends on how the rig is used. For example, speed, altitude, road grades, outside temperature, and how much the vehicle is used to pull a trailer are all important. It can depend on any special equipment on the vehicle, and the amount of

tongue weight the vehicle can carry. See “Weight of the Trailer Tongue” later in this section.

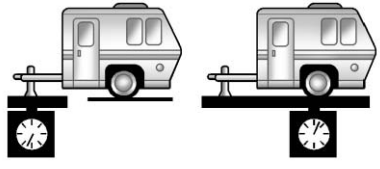
Maximum trailer weight is calculated assuming only the driver is in the tow vehicle and it has all the required trailering equipment. The weight of additional optional equipment, passengers, and cargo in the tow vehicle must be subtracted from the maximum trailer weight.

Ask your dealer for trailering information or advice, or write us at our Customer Assistance Offices. See *Customer Assistance Offices on page 13-3*.

Weight of the Trailer Tongue

The tongue load (1) of any trailer is an important weight to measure because it affects the total gross weight of the vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo carried in it, and the people who will be riding in the vehicle.

If there are a lot of options, equipment, passengers, or cargo in the vehicle, it will reduce the tongue weight the vehicle can carry, which will also reduce the trailer weight the vehicle can tow. If towing a trailer, the tongue load must be added to the GVW because the vehicle will be carrying that weight, too. See *Vehicle Load Limits on page 9-10*.



1 2

The trailer tongue (1) should weigh 10 to 15 percent of the total loaded trailer weight (2).

After loading the trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, adjustments might be made by moving some items around in the trailer.

Total Weight on Your Vehicle's Tires

Be sure the vehicle's tires are inflated to the upper limit for cold tires. These numbers can be found on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-10*. Make sure not to go over the GVW limit for the vehicle, including the weight of the trailer tongue.

Towing Equipment

Hitches

Use the correct hitch equipment. See your dealer or a hitch dealer for assistance.

- The rear bumper on the vehicle is not intended for hitches. Do not attach rental hitches or other bumper-type hitches to it. Use only a frame-mounted hitch that does not attach to the bumper.
- Will any holes be made in the body of the vehicle when the trailer hitch is installed? If so, seal the holes when the hitch is removed. If the holes are not sealed, dirt, water, and deadly carbon monoxide (CO) from the exhaust can get into the vehicle. See *Engine Exhaust on page 9-21*.

Safety Chains

Always attach chains between the vehicle and the trailer. Cross the safety chains under the tongue of the trailer to help prevent the tongue from contacting the road if it becomes separated from the hitch. Leave enough slack so the rig can turn. Never allow safety chains to drag on the ground.

Trailer Brakes

Does the trailer have its own brakes? Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted, and maintained properly.

Because the vehicle has antilock brakes, do not tap into the vehicle's brake system. If this is done, both brake systems will not work well, or at all.

Conversions and Add-Ons

Add-On Electrical Equipment

Notice: **Some electrical equipment can damage the vehicle or cause components to not work and would not be covered by the warranty. Always check with your dealer before adding electrical equipment.**

Add-on equipment can drain the vehicle's 12-volt battery, even if the vehicle is not operating.

The vehicle has an airbag system. Before attempting to add anything electrical to the vehicle, see *Servicing the Airbag-Equipped Vehicle on page 3-34* and *Adding Equipment to the Airbag-Equipped Vehicle on page 3-34*.

Vehicle Care

General Information

General Information 10-2
California Proposition 65 Warning 10-2
California Perchlorate Materials Requirements 10-3
Accessories and Modifications 10-3

Vehicle Checks

Doing Your Own Service Work 10-3
Hood 10-4
Engine Compartment Overview 10-5
Engine Cover 10-6
Engine Oil 10-6
Engine Oil Life System 10-9
Automatic Transmission Fluid 10-10
Engine Air Cleaner/Filter 10-10
Cooling System 10-11
Engine Coolant 10-12
Engine Overheating 10-14
Overheated Engine Protection Operating Mode 10-16
Power Steering Fluid 10-16
Washer Fluid 10-17
Brakes 10-17
Brake Fluid 10-18
Battery 10-20
All-Wheel Drive 10-20
Starter Switch Check 10-20
Automatic Transmission Shift Lock Control Function Check 10-21
Park Brake and P (Park) Mechanism Check 10-21
Wiper Blade Replacement 10-22
Windshield Replacement ... 10-22

Headlamp Aiming

Headlamp Aiming 10-23

Bulb Replacement

Bulb Replacement 10-23
High Intensity Discharge (HID) Lighting 10-23
LED Lighting 10-23
Back-Up Lamps 10-23
License Plate Lamp 10-24
Replacement Bulbs 10-25

Electrical System

Electrical System Overload 10-25
Fuses and Circuit Breakers 10-26
Engine Compartment Fuse Block 10-26
Instrument Panel Fuse Block 10-30
Rear Compartment Fuse Block 10-32

Wheels and Tires

Tires 10-34
All-Season Tires 10-35
Winter Tires 10-35
Summer Tires 10-35
Tire Sidewall Labeling 10-36
Tire Designations 10-38
Tire Terminology and Definitions 10-38
Tire Pressure 10-41
Tire Pressure for High-Speed Operation 10-43

Tire Pressure Monitor System 10-43
Tire Pressure Monitor Operation 10-44
Tire Inspection 10-48
Tire Rotation 10-48
When It Is Time for New Tires 10-49
Buying New Tires 10-50
Different Size Tires and Wheels 10-51
Uniform Tire Quality Grading 10-52
Wheel Alignment and Tire Balance 10-53
Wheel Replacement 10-54
Tire Chains 10-54
If a Tire Goes Flat 10-55
Tire Sealant and Compressor Kit 10-57
Storing the Tire Sealant and Compressor Kit 10-64
Tire Changing 10-65
Compact Spare Tire 10-69
Full-Size Spare Tire 10-70

Jump Starting
Jump Starting 10-71

Towing
Towing the Vehicle 10-73
Recreational Vehicle Towing 10-74

Appearance Care
Exterior Care 10-76
Interior Care 10-79
Floor Mats 10-82

General Information

For service and parts needs, visit your dealer. You will receive genuine GM parts and GM-trained and supported service people.

Genuine GM parts have one of these marks:

California Proposition 65 Warning

Most motor vehicles, including this one, contain and/or emit chemicals known to the State of California to

cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems, many fluids, and some component wear by-products contain and/or emit these chemicals.

California Perchlorate Materials Requirements

Certain types of automotive applications, such as airbag initiators, safety belt pretensioners, and lithium batteries contained in Remote Keyless Entry transmitters, may contain perchlorate materials. Special handling may be necessary. For additional information, see www.dtsc.ca.gov/hazardouswaste/perchlorate.

Accessories and Modifications

Adding non-dealer accessories or making modifications to the vehicle can affect vehicle performance and safety, including such things as airbags, braking, stability, ride and handling, emissions systems, aerodynamics, durability, and electronic systems like antilock brakes, traction control, and stability control. These accessories or modifications could even cause malfunction or damage not covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorize the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see *Adding Equipment to the Airbag-Equipped Vehicle on page 3-34*.

Vehicle Checks

Doing Your Own Service Work

⚠ WARNING

It can be dangerous to work on your vehicle if you do not have the proper knowledge, service manual, tools, or parts. Always follow owner manual procedures and consult the service manual for your vehicle before doing any service work.

If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can. To order the proper service manual, see *Service Publications Ordering Information on page 13-11*.

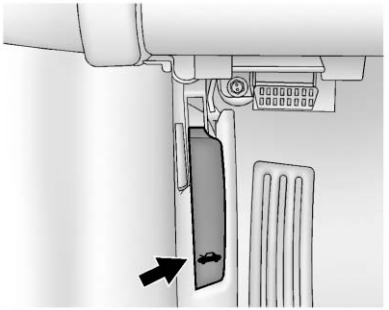
This vehicle has an airbag system. Before attempting to do your own service work, see *Servicing the Airbag-Equipped Vehicle on page 3-34*.

Keep a record with all parts receipts and list the mileage and the date of any service work performed. See *Maintenance Records on page 11-15*.

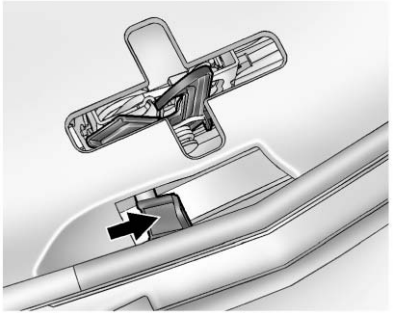
Notice: **Even small amounts of contamination can cause damage to vehicle systems. Do not allow contaminants to contact the fluids, reservoir caps, or dipsticks.**

Hood

To open the hood:



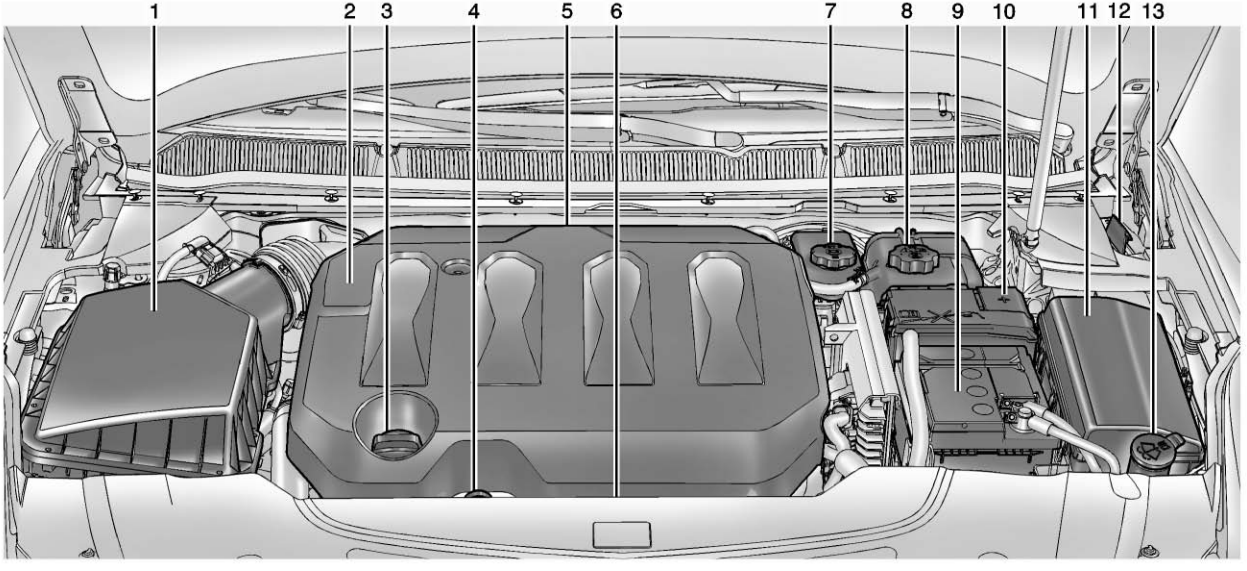
1. Pull the hood release lever with this symbol on it. It is inside the vehicle on the lower side of the instrument panel.



2. Go to the front of the vehicle to find the secondary hood release handle. The handle is under the front edge of the hood near the center. Push the handle to the right and at the same time raise the hood.

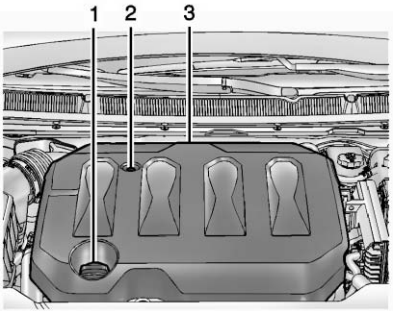
Before closing the hood, be sure all the filler caps are on properly. Then bring the hood from full open to within 152 mm (6 in) from the closed position, pause, then push the front center of the hood with a swift, firm motion to fully close the hood.

Engine Compartment Overview



1. *Engine Air Cleaner/Filter on page 10-10*.
2. Power Steering Fluid Reservoir (Under Engine Cover). See *Power Steering Fluid on page 10-16*.
3. Engine Oil Fill Cap. See *Engine Oil on page 10-6*.
4. Engine Oil Dipstick (Out of View). See *Engine Oil on page 10-6*.
5. Engine Cover.
6. Engine Cooling Fans (Out of View). See *Cooling System on page 10-11*.
7. Brake Fluid Reservoir. See *Brakes on page 10-17*.
8. Engine Coolant Surge Tank and Pressure Cap. See *Engine Coolant on page 10-12*.
9. *Battery on page 10-20*.
10. Remote Positive (+) Terminal. See *Jump Starting on page 10-71*.
11. *Engine Compartment Fuse Block on page 10-26*.
12. Remote Negative (−) Terminal. See *Jump Starting on page 10-71*.
13. Windshield Washer Fluid Reservoir. See *Washer Fluid on page 10-17*.

Engine Cover



1. Engine Oil Fill Cap
2. Engine Cover Bolt
3. Engine Cover

To remove:

1. Remove the oil fill cap (1).
2. Remove the engine cover bolt (2).
3. Raise the engine cover (3) to release it from the retainers.
4. Lift and remove the engine cover.
5. Reverse Steps 1–4 to reinstall the engine cover.

Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Always use engine oil approved to the proper specification and of the proper viscosity grade. See “Selecting the Right Engine Oil” in this section.

- Check the engine oil level regularly and maintain the proper oil level. See “Checking Engine Oil” and “When to Add Engine Oil” in this section.
- Change the engine oil at the appropriate time. See *Engine Oil Life System on page 10-9*.
- Always dispose of engine oil properly. See “What to Do with Used Oil” in this section.

Checking Engine Oil

It is a good idea to check the engine oil level at each fuel fill. In order to get an accurate reading, the vehicle must be on level ground. The engine oil dipstick handle is a loop. See *Engine Compartment Overview on page 10-5* for the location of the engine oil dipstick.

1. If the engine has been running recently, turn off the engine and allow several minutes for the oil to drain back into the oil pan. Checking the oil level too soon after engine shutoff will not provide an accurate oil level reading.

⚠ WARNING

The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

2. Pull out the dipstick and clean it with a paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.

When to Add Engine Oil

If the oil is below the cross-hatched area at the tip of the dipstick, add 1 L (1 qt) of the recommended oil and then recheck the level. See “Selecting the Right Engine Oil” in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications on page 12-2*.

Notice: **Do not add too much oil. Oil levels above or below the acceptable operating range shown on the dipstick are harmful to the engine. If you find that you have an oil level above the operating range, i.e., the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range, the engine could be damaged. You should drain out the excess oil or limit driving of the vehicle and seek a service professional to remove the excess amount of oil.**

See *Engine Compartment Overview on page 10-5* for the location of the engine oil fill cap.

Add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when through.

Selecting the Right Engine Oil

Selecting the right engine oil depends on both the proper oil specification and viscosity grade. See *Recommended Fluids and Lubricants on page 11-13*.

Specification

Use and ask for licensed engine oils with the dexos1® approved certification mark. Engine oils meeting the requirements for the vehicle should have the dexos1 approved certification mark. This certification mark indicates that the oil has been approved to the dexos1 specification.

Notice: **Failure to use the recommended engine oil or equivalent can result in engine damage not covered by the vehicle warranty. Check with your dealer or service provider on whether the oil is approved to the dexos1 specification.**

Viscosity Grade

SAE 5W-30 is the best viscosity grade for the vehicle. Do not use other viscosity grade oils such as SAE 10W-30, 10W-40, or 20W-50.

Cold Temperature Operation: In an area of extreme cold, where the temperature falls below −29°C (−20°F), an SAE 0W-30 oil may be used. An oil of this viscosity grade will provide easier cold starting for the engine at extremely low temperatures. When selecting an oil of the appropriate viscosity grade, always select an oil of the correct specification. See “Specification” earlier in this section.

Engine Oil Additives/Engine Oil Flushes

Do not add anything to the oil. The recommended oils with the dexos specification and displaying the dexos certification mark are all that is needed for good performance and engine protection.

Engine oil system flushes are not recommended and could cause engine damage not covered by the vehicle warranty.

What to Do with Used Oil

Used engine oil contains certain elements that can be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the trash or pouring it on the ground,

into sewers, or into streams or bodies of water. Recycle it by taking it to a place that collects used oil.

Engine Oil Life System

When to Change Engine Oil

This vehicle has a computer system that indicates when to change the engine oil and filter. This is based on a combination of factors which include engine revolutions, engine temperature, and miles driven. Based on driving conditions, the mileage at which an oil change is indicated can vary considerably. For the oil life system to work properly, the system must be reset every time the oil is changed.

When the system has calculated that oil life has been diminished, it indicates that an oil change is necessary. A CHANGE ENGINE OIL SOON message comes on. See *Engine Oil Messages on page 5-37*.

Change the oil as soon as possible within the next 1 000 km (600 mi). It is possible that, if driving under the best conditions, the oil life system might indicate that an oil change is not necessary for up to a year. The engine oil and filter must be changed at least once a year and at this time the system must be reset. Your dealer has trained service people who will perform this work and reset the system. It is also important to check the oil regularly over the course of an oil drain interval and keep it at the proper level.

If the system is ever reset accidentally, the oil must be changed at 5 000 km (3,000 mi) since the last oil change. Remember to reset the oil life system whenever the oil is changed.

How to Reset the Engine Oil Life System

Reset the system whenever the engine oil is changed so that the system can calculate the next engine oil change. To reset the system:

1. Using the DIC controls on the right side of the steering wheel, display REMAINING OIL LIFE on the DIC. See *Driver Information Center (DIC) on page 5-28*. When remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. See *Engine Oil Messages on page 5-37*.
2. Press SEL on the DIC controls and hold SEL down for a few seconds to clear the CHANGE ENGINE OIL SOON message and reset the oil life at 100%.

Be careful not to reset the oil life display accidentally at any time other than after the oil is changed. It cannot be reset accurately until the next oil change.

The oil life system can also be reset as follows:

1. Turn the ignition on with the engine off.
2. Fully press and release the accelerator pedal three times within five seconds.

   If the CHANGE ENGINE OIL SOON message is not on, the system is reset.

The system is reset when the CHANGE ENGINE OIL SOON message is off.

If the CHANGE ENGINE OIL SOON message comes back on when the vehicle is started, the engine oil life system has not been reset. Repeat the procedure.

Automatic Transmission Fluid

A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to the dealer and have it repaired as soon as possible.

See your dealer to have the fluid and filter changed at the intervals listed in the *Maintenance Schedule on page 11-3*.

Engine Air Cleaner/Filter

The engine air cleaner/filter is in the engine compartment on the passenger side of the vehicle. See *Engine Compartment Overview on page 10-5*.

When to Inspect the Engine Air Cleaner/Filter

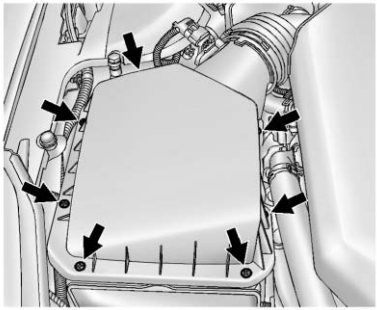
Inspect the air cleaner/filter at the scheduled maintenance intervals. See *Maintenance Schedule on page 11-3*. If you are driving in dusty/dirty conditions, inspect the filter at each engine oil change.

How to Inspect the Engine Air Cleaner/Filter

To inspect the air cleaner/filter, remove the filter from the vehicle and lightly shake it to release loose dust and dirt. If the filter remains covered with dirt, a new filter is required.

To inspect or replace the engine air cleaner/filter:

1. Open the hood. See *Hood on page 10-4*.



2. Remove the seven screws on top of the engine air cleaner/filter housing.
3. Lift the filter cover housing away from the engine.
4. Pull out the filter.
5. Inspect or replace the engine air cleaner/filter.
6. Reverse Steps 2–4 to reinstall the filter cover housing.

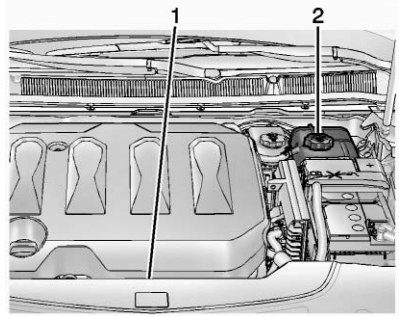
⚠ WARNING

Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air; it helps to stop flames if the engine backfires. Use caution when working on the engine and do not drive with the air cleaner/filter off.

Notice: **If the air cleaner/filter is off, dirt can easily get into the engine, which could damage it. Always have the air cleaner/filter in place when you are driving.**

Cooling System

The cooling system allows the engine to maintain the correct working temperature.



1. Electric Engine Cooling Fans (Out of View)
2. Coolant Surge Tank and Pressure Cap

⚠ WARNING

An electric engine cooling fan under the hood can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underhood electric fan.

⚠ WARNING

Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned.

Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.

Notice: **Using coolant other than DEX-COOL® can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner, at 50 000 km (30,000 mi) or 24 months, whichever occurs first. Any repairs would not be covered by the vehicle warranty. Always use DEX-COOL (silicate-free) coolant in the vehicle.**

Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL® engine coolant mixture. See *Recommended Fluids and Lubricants on page 11-13* and *Maintenance Schedule on page 11-3*.

The following explains the cooling system and how to check and add coolant when it is low. If there is a problem with engine overheating, see *Engine Overheating on page 10-14*.

What to Use

⚠ WARNING

Adding only plain water or some other liquid to the cooling system can be dangerous. Plain water and other liquids, can boil before the proper coolant mixture will. The coolant warning system is set for the proper coolant mixture.

(Continued)

WARNING (Continued)

With plain water or the wrong mixture, the engine could get too hot but you would not get the overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant.

Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant. If using this mixture, nothing else needs to be added. This mixture:

- Gives freezing protection down to −37°C (−34°F), outside temperature.
- Gives boiling protection up to 129°C (265°F), engine temperature.
- Protects against rust and corrosion.
- Will not damage aluminum parts.

- Helps keep the proper engine temperature.

Notice: **If improper coolant mixture, inhibitors, or additives are used in the vehicle cooling system, the engine could overheat and be damaged. Too much water in the mixture can freeze and crack engine cooling parts. The repairs would not be covered by the warranty. Use only the proper mixture of engine coolant for the cooling system. See *Recommended Fluids and Lubricants on page 11-13*.**

Never dispose of engine coolant by putting it in the trash, pouring it on the ground, or pouring into sewers, streams, or bodies of water. Have the coolant changed by an authorized service center, familiar with legal requirements regarding used coolant disposal. This will help protect the environment and your health.

Checking Coolant

The vehicle must be on a level surface when checking the coolant level.

The engine coolant surge tank is in the engine compartment on the driver side of the vehicle. See *Engine Compartment Overview on page 10-5*.

Check to see if coolant is visible in the surge tank. If the coolant inside the surge tank is boiling, do not do anything else until it cools down. If coolant is visible but the coolant level is not at or above the mark pointed to, add a 50/50 mixture of clean, drinkable water and DEX-COOL coolant.

Be sure the cooling system is cool before this is done.

If no coolant is visible in the coolant surge tank, add coolant as follows:

How to Add Coolant to the Surge Tank

⚠ WARNING

You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.

Notice: **This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause the engine to overheat and be severely damaged.**

⚠ WARNING

Steam and scalding liquids from a hot cooling system can blow out and burn you badly. Never turn the cap when the cooling system, including the surge tank pressure cap, is hot. Wait for the cooling system and surge tank pressure cap to cool.

The coolant surge tank pressure cap can be removed when the cooling system, including the surge tank pressure cap and upper radiator hose, is no longer hot.

1. Turn the pressure cap slowly counterclockwise. If a hiss is heard, wait for that to stop. A hiss means there is still some pressure left.
2. Keep turning the pressure cap slowly and remove it.
3. Fill the coolant surge tank with the proper mixture to the mark pointed to on the front of the coolant surge tank.
4. With the coolant surge tank pressure cap off, start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fans. By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper mixture to the coolant surge tank until the level reaches the mark pointed to on the front of the coolant surge tank.
5. Replace the pressure cap tightly.

Notice: **If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.**

Engine Overheating

The vehicle has an engine coolant temperature gauge and an engine temperature light to warn of engine overheating.

There are also engine hot messages that may be displayed in the Driver Information Center (DIC). See *Engine Cooling System Messages on page 5-37*.

If the decision is made not to lift the hood when one of these warnings appears, but get service help right away. See *Roadside Service on page 13-5*.

If the decision is made to lift the hood, make sure the vehicle is parked on a level surface.

Then check to see if the engine cooling fans are running. If the engine is overheating, the fans should be running. If they are not, do not continue to run the engine and have the vehicle serviced.

Notice: **Running the engine without coolant may cause damage or a fire. Vehicle damage would not be covered by the warranty. See *Overheated Engine Protection Operating Mode on page 10-16* for information on driving to a safe place in an emergency.**

If Steam Is Coming from the Engine Compartment

⚠ WARNING

Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Just turn it

(Continued)

WARNING (Continued)

off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.

If you keep driving when the engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop the engine if it overheats, and get out of the vehicle until the engine is cool.

If No Steam Is Coming from the Engine Compartment

If an engine overheat warning is displayed but no steam can be seen or heard, the problem may not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day.
- Stops after high-speed driving.
- Idles for long periods in traffic.
- Tows a trailer.

If the overheat warning is displayed with no sign of steam:

1. Turn the air conditioning off.
2. Turn the heater on to the highest temperature and to the highest fan speed. Open the windows as necessary.
3. In heavy traffic, let the engine idle in N (Neutral) while stopped. If it is safe to do so, pull off the road, shift to P (Park) or N (Neutral), and let the engine idle.

If the temperature overheat gauge is no longer in the overheat zone or an overheat warning no longer displays, the vehicle can be driven. Continue to drive the vehicle slow for about 10 minutes. Keep a safe vehicle distance from the car in front of you. If the warning does not come back on, continue to drive normally.

If the warning continues, pull over, stop, and park the vehicle right away.

If there is no sign of steam, idle the engine for three minutes while parked. If the warning is still displayed, turn off the engine until it cools down. Also, see “Overheated Engine Protection Operating Mode” next in this section.

Overheated Engine Protection Operating Mode

This emergency operating mode allows the vehicle to be driven to a safe place in an emergency situation. If an overheated engine condition exists, an overheat protection mode, which alternates firing groups of cylinders, helps prevent engine damage. In this mode, there is significant loss in power and engine performance.

The engine coolant temperature warning light comes on in the instrument cluster, to indicate the vehicle has entered overheated engine protection operating mode. The temperature gauge also indicates an overheat condition exists. Driving extended distances and/or towing a trailer in the overheat protection mode should be avoided.

Power Steering Fluid

The power steering fluid reservoir is under the engine cover on the passenger side toward the rear of the engine compartment. See *Engine Compartment Overview on page 10-5*.

When to Check Power Steering Fluid

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or an unusual noise is heard. A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

How to Check Power Steering Fluid

Check the level when the engine is cool.

To check the power steering fluid:

1. Remove the engine cover. Refer to *Engine Cover on page 10-6*.
2. Wipe the cap and the top of the reservoir clean.
3. Turn the cap counterclockwise and pull it straight up.
4. Wipe the dipstick with a clean rag.
5. Replace the cap and completely tighten it.

6. Remove the cap again and look at the fluid level on the dipstick.

The fluid level should be between MIN and MAX on the dipstick.

What to Use

To determine what kind of fluid to use, see *Recommended Fluids and Lubricants on page 11-13*. Always use the proper fluid.

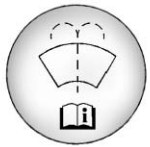
Washer Fluid

What to Use

When adding windshield washer fluid to the vehicle, be sure to read the manufacturer instructions before use. If you will be operating your vehicle in an area where the temperature may fall below freezing, use a fluid that has sufficient protection against freezing.

Adding Washer Fluid

The appropriate message will appear on the Driver Information Center (DIC) when the fluid level is low. See *Washer Fluid Messages on page 5-45*.



Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview on page 10-5* for reservoir location.

Notice

- **When using concentrated washer fluid, follow the manufacturer instructions for adding water.**
- **Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage the washer fluid tank and other parts of the washer system.**
- **Fill the washer fluid tank only three-quarters full when it is very cold. This allows for fluid expansion if freezing occurs, which could damage the tank if it is completely full.**
- **Do not use engine coolant (antifreeze) in the windshield washer. It can damage the windshield washer system and paint.**

Brakes

This vehicle has disc brakes. Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed.

The sound can come and go or be heard all the time the vehicle is moving, except when applying the brake pedal firmly.

⚠ WARNING

The brake wear warning sound means that soon the brakes will not work well. That could lead to a crash. When the brake wear warning sound is heard, have the vehicle serviced.

Notice: **Continuing to drive with worn-out brake pads could result in costly brake repair.**

Some driving conditions or climates can cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with the brakes.

Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tires are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to torque specifications in *Capacities and Specifications on page 12-2*.

Brake linings should always be replaced as complete axle sets.

Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign that brake service might be required.

Brake Adjustment

Every time the brakes are applied, with or without the vehicle moving, the brakes adjust for wear.

Replacing Brake System Parts

The braking system on a vehicle is complex. Its many parts have to be of top quality and work well together if the vehicle is to have really good braking. The vehicle was designed and tested with top-quality brake parts. When parts of the braking system are replaced, be sure to get new, approved replacement parts. If this is not done, the brakes might not work properly. For example, installing disc brake pads that are wrong for the vehicle, can change the balance between the front and rear brakes — for the worse. The braking performance expected can change in many other ways if the wrong replacement brake parts are installed.

Brake Fluid

The brake master cylinder reservoir is filled with DOT 3 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview on page 10-5* for the location of the reservoir.

There are only two reasons why the brake fluid level in the reservoir might go down:

- The brake fluid level goes down because of normal brake lining wear. When new linings are installed, the fluid level goes back up.
- A fluid leak in the brake hydraulic system can also cause a low fluid level. Have the brake hydraulic system fixed, since a leak means that sooner or later the brakes will not work well.

Do not top off the brake fluid. Adding fluid does not correct a leak. If fluid is added when the linings are worn, there will be too much fluid when new brake linings are installed. Add or remove brake fluid, as necessary, only when work is done on the brake hydraulic system.

⚠ WARNING

If too much brake fluid is added, it can spill on the engine and burn, if the engine is hot enough. You or others could be burned, and the vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system.

When the brake fluid falls to a low level, the brake warning light comes on. See *Brake System Warning Light on page 5-21*.

What to Add

Use only new DOT 3 brake fluid from a sealed container. See *Recommended Fluids and Lubricants on page 11-13*.

Always clean the brake fluid reservoir cap and the area around the cap before removing it. This helps keep dirt from entering the reservoir.

⚠ WARNING

With the wrong kind of fluid in the brake hydraulic system, the brakes might not work well. This could cause a crash. Always use the proper brake fluid.

Notice

- **Using the wrong fluid can badly damage brake hydraulic system parts. For example, just a few drops of mineral-based oil, such as engine oil, in the brake hydraulic system can damage brake hydraulic system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.**
- **If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Be careful not to**

spill brake fluid on the vehicle. If you do, wash it off immediately.

Battery

Refer to the replacement number shown on the original battery label when a new battery is needed. See *Engine Compartment Overview on page 10-5* for battery location.

⚠ WARNING

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

Vehicle Storage

⚠ WARNING

Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you are not careful. See *Jump Starting on page 10-71* for tips on working around a battery without getting hurt.

Infrequent Usage: Remove the black, negative (−) cable from the battery to keep the battery from running down.

Extended Storage: Remove the black, negative (−) cable from the battery or use a battery trickle charger.

All-Wheel Drive

Transfer Case

Under normal driving conditions, transfer case fluid does not require changing or checking unless there is a fluid leak or unusual noise. If required, have the transfer case serviced by your dealer.

Starter Switch Check

⚠ WARNING

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle.
2. Firmly apply both the parking brake and the regular brake. See *Electric Parking Brake on page 9-26*.

   Do not use the accelerator pedal, and be ready to turn off the engine immediately if it starts.

3. Try to start the engine in each gear. The vehicle should start only in P (Park) or N (Neutral). If the vehicle starts in any other position, contact your dealer for service.

Automatic Transmission Shift Lock Control Function Check

⚠ WARNING

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle. It should be parked on a level surface.
2. Firmly apply the parking brake. See *Electric Parking Brake on page 9-26*.

   Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the ignition on, but do not start the engine. Without applying the regular brake, try to move the shift lever out of P (Park) with normal effort. If the shift lever moves out of P (Park), contact your dealer for service.

Park Brake and P (Park) Mechanism Check

⚠ WARNING

When you are doing this check, the vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front

(Continued)

WARNING (Continued)

of the vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and the transmission in N (Neutral), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the P (Park) mechanism's holding ability: With the engine running, shift to P (Park). Then release the parking brake followed by the regular brake.

Contact your dealer if service is required.

Wiper Blade Replacement

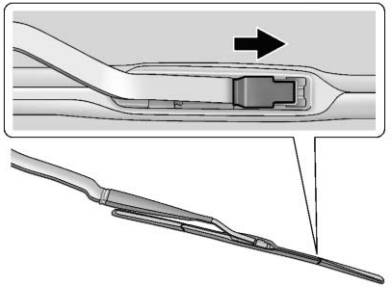
Windshield wiper blades should be inspected for wear or cracking. See *Maintenance Schedule on page 11-3*.

It is a good idea to clean the wiper blade assembly on a regular basis. When worn, or cleaning is ineffective, replace the wiper blade. For proper windshield wiper blade length and type, see *Maintenance Replacement Parts on page 11-14*.

Notice: **Allowing the wiper arm to touch the windshield when no wiper blade is installed could damage the windshield. Any damage that occurs would not be covered by your warranty. Do not allow the wiper arm to touch the windshield.**

To replace the wiper blade:

1. Pull the wiper assembly away from the windshield.



2. Lift up on the latch in the middle of the wiper blade where the wiper arm attaches.
3. With the latch open, pull the wiper blade down toward the windshield far enough to release it from the J-hooked end of the wiper arm.
4. Remove the wiper blade.
5. Reverse Steps 1–3 for wiper blade replacement.

Windshield Replacement

The windshield is part of the HUD system. If the vehicle has to have the windshield replaced, get one that is designed for HUD or the HUD image may look out of focus.

Headlamp Aiming

Headlamp aim has been preset and should need no further adjustment.

If the vehicle is damaged in a crash, the headlamp aim may be affected. If adjustment to the headlamps is necessary, see your dealer.

Bulb Replacement

For the proper type of replacement bulbs, see *Replacement Bulbs on page 10-25*.

For any bulb-changing procedure not listed in this section, contact your dealer.

High Intensity Discharge (HID) Lighting

⚠ WARNING

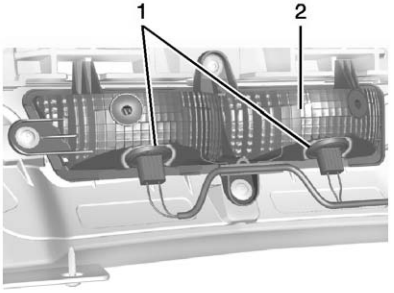
The high intensity discharge lighting system operates at a very high voltage. If you try to service any of the system components, you could be seriously injured. Have your dealer or a qualified technician service them.

After an HID headlamp bulb has been replaced, the beam might be a slightly different shade than it was originally. This is normal.

LED Lighting

This vehicle has several LED lamps. For replacement of any LED lighting assembly, contact your dealer.

Back-Up Lamps



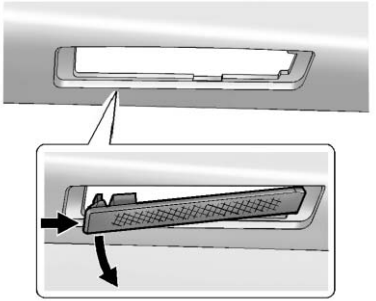
1. Back-Up Bulb Socket
2. Back-Up Lamp Assembly

To replace one of these bulbs:

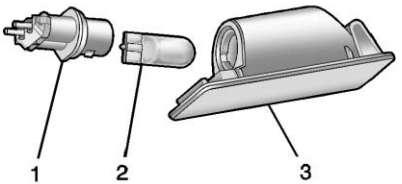
1. Reach under the rear fascia and locate the back-up lamp assembly.

2. Remove the bulb socket (1) by turning counterclockwise and pulling straight out of the lamp assembly (2).
3. Pull the bulb out of the socket.
4. Install the new bulb in the bulb socket.
5. Install the bulb socket by turning clockwise.

License Plate Lamp



Lamp Assembly



Bulb Assembly

1. Bulb Socket
2. Bulb
3. Lamp Assembly

To replace one of these bulbs:

1. Push the lamp assembly (3) toward the right.
2. Pull the lamp assembly down to remove.
3. Turn the bulb socket (1) counterclockwise to remove it from the lamp assembly (3).
4. Pull the bulb (2) straight out of the bulb socket (1).
5. Push the replacement bulb straight into the bulb socket and turn the bulb socket clockwise to install it into the lamp assembly.
6. Push the lamp assembly back into position until the release tab locks into place.

Replacement Bulbs

Exterior Lamp	Bulb Number
Back-Up Lamp	921 (W16W)
License Plate Lamp	W5W LL

For replacement bulbs not listed here, contact your dealer.

Electrical System

Electrical System Overload

The vehicle has fuses and circuit breakers to protect against an electrical system overload.

When the current electrical load is too heavy, the circuit breaker opens and closes, protecting the circuit until the current load returns to normal or the problem is fixed. This greatly reduces the chance of circuit overload and fire caused by electrical problems.

Fuses and circuit breakers protect power devices in the vehicle.

Replace a bad fuse with a new one of the identical size and rating.

If there is a problem on the road and a fuse needs to be replaced, the same amperage fuse can be borrowed. Choose some feature of the vehicle that is not needed to use and replace it as soon as possible.

Headlamp Wiring

An electrical overload may cause the lamps to go on and off, or in some cases to remain off. Have the headlamp wiring checked right away if the lamps go on and off or remain off.

Windshield Wipers

If the wiper motor overheats due to heavy snow or ice, the windshield wipers will stop until the motor cools and will then restart.

Although the circuit is protected from electrical overload, overload due to heavy snow or ice may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using the windshield wipers.

If the overload is caused by an electrical problem and not snow or ice, be sure to get it fixed.

Fuses and Circuit Breakers

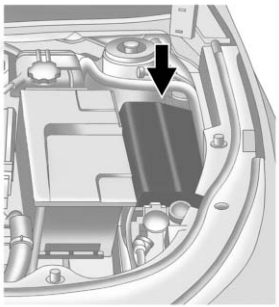
The wiring circuits in the vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of damage caused by electrical problems.

To check a fuse, look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure to replace a bad fuse with a new one of the identical size and rating.

Fuses of the same amperage can be temporarily borrowed from another fuse location, if a fuse goes out. Replace the fuse as soon as possible.

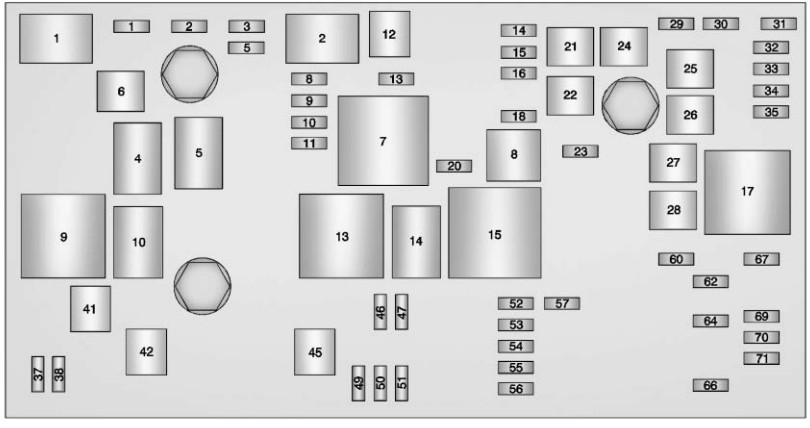
To identify and check fuses, circuit breakers, and relays, see *Engine Compartment Fuse Block on page 10-26*, *Instrument Panel Fuse Block on page 10-30*, and *Rear Compartment Fuse Block on page 10-32*.

Engine Compartment Fuse Block



To remove the fuse block cover, squeeze the three retaining clips on the cover and lift it straight up.

Notice: **Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.**



The vehicle may not be equipped with all of the fuses, relays, and features shown.

J-Case Fuses	Usage
6	Wiper
12	Starter

J-Case Fuses	Usage
21	Rear Power Windows
22	Sunroof
24	Front Power Windows

J-Case Fuses	Usage
25	Retained Accessory Power
26	Antilock Brake System Pump
27	Electric Parking Brake
28	Rear Window Defogger
41	Brake Vacuum Assist Pump
42	Cooling Fan K2
44	Headlamp Washer
45	Cooling Fan K1

Mini Fuses	Usage
1	Transmission Control Module — Battery
2	Engine Control Module Battery

Mini Fuses	Usage
3	Air Conditioning Compressor Clutch
5	Engine Control Module Run/Crank
8	Ignition Coils — Even (Six Cylinder Engine)
9	Ignition Coils — Odd (Six Cylinder Engine)
10	Engine Control Module — Switched Battery (from Engine Control Module Relay)
11	Six Cylinder Engine: Post Catalytic Converter Oxygen Sensor Heater, Mass Air Flow Sensor, Flex Fuel Sensor

Mini Fuses	Usage
13	Run/Crank for Transmission Control Module and Fuel System Control Module
14	Right Rear Heated Seat
15	Left Rear Heated Seat
16	Vented Seats Run/ Crank
18	Autonet Run/Crank (Aftermarket)
20	Heated Steering Wheel
23	Variable Effort Steering (if equipped)
29	Passive Entry/ Passive Start Module – Battery
30	All-Wheel Drive Module

Mini Fuses	Usage
31	Left Front Heated Seat
32	Body Control Module 6
33	Right Front Heated Seat
34	Antilock Brake System Valves
35	Amplifier
37	Right High Beam
38	Left High Beam
46	Cooling Fan Relay
47	Six Cylinder Engine: Pre Catalytic Converter Oxygen Sensor Heater, Canister Purge Solenoid
49	Right High Intensity Discharge Headlamp

Mini Fuses	Usage
50	Left High Intensity Discharge Headlamp
51	Horn
52	Cluster Run/Crank
53	Run/Crank for Inside Rearview Mirror, Rear Vision Camera
54	Run/Crank for Heating, Ventilation, and Air Conditioning
55	Outside Rearview Mirror, Universal Garage Door Opener, Front Window Switches
56	Windshield Washer
57	Steering Column Lock
60	Heated Mirror

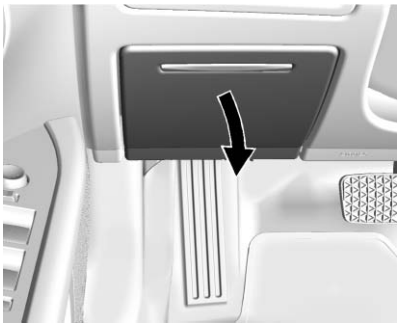
Mini Fuses	Usage
62	Ultrasonic Rear Parking Assist/ Front Camera Module – Battery
64	Adaptive Forward Lighting (AFL) Module — Battery
66	Trunk Release
67	Fuel System Control Module
69	Regulated Voltage Control Sensor
70	Vent Canister Solenoid
71	Memory Module

Mini Relays	Usage
7	Engine Control Module
9	Cooling Fan
13	Cooling Fan

Mini Relays	Usage
15	Run/Crank
17	Rear Window Defogger

Micro Relays	Usage
1	Air Conditioning Compressor Clutch
2	Starter
4	Wiper Speed
5	Wiper Control
8	Run
10	Cooling Fan
14	Headlamp Low Beam

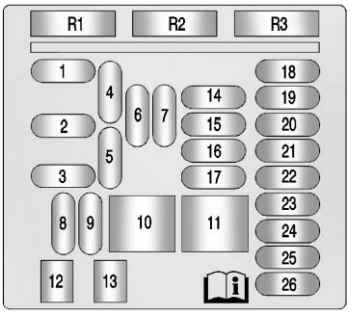
Instrument Panel Fuse Block



The instrument panel fuse block is in the instrument panel, on the driver side of the vehicle. To access the fuses, open the fuse panel door by pulling down at the top.

Press in on the sides of the door to release it from the instrument panel.

Pull the door toward you to release it from the hinge.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

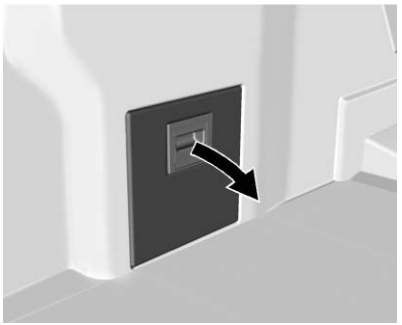
Fuses	Usage
1	OnStar
2	Body Control Module 7
3	Body Control Module 5
4	Radio
5	Infotainment and Center Stack Displays, Head-up Display, Instrument Cluster, Rear Seat Entertainment
6	Power Outlet 1
7	Power Outlet 2
8	Body Control Module 1
9	Body Control Module 4
10	Body Control Module 8 (J-Case Fuse)
11	Front Heater Ventilation Air Conditioning/Blower (J-Case Fuse)
12	Passenger Seat (Circuit Breaker)
13	Driver Seat (Circuit Breaker)

Fuses	Usage
14	Diagnostic Link Connector
15	Airbag
16	Glove Box
17	Heater Ventilation Air Conditioning Controller
18	Pre-Fuse for Fuses 1, 4, and 5
19	Electronic Steering Column Lock
20	Automatic Occupant Sensing
21	Spare
22	Steering Wheel Controls/Backlight

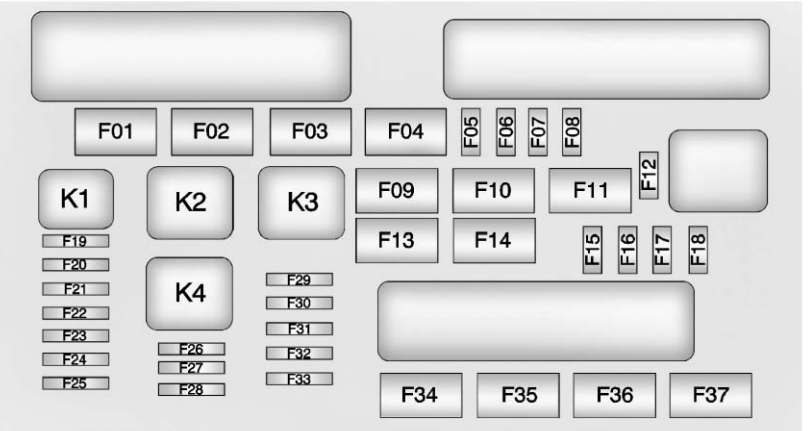
Fuses	Usage
23	Body Control Module 3
24	Body Control Module 2
25	Column Lock Module
26	AC/DC Inverter

Relays	Usage
R1	Glove Box Relay
R2	Not Used
R3	Retained Accessory Power/Accessory Relay

Rear Compartment Fuse Block



The rear compartment fuse block is on the left side of the trunk behind a cover.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

Fuse Number	Usage
F01	Not Used
F02	Not Used
F03	Not Used

Fuse Number	Usage
F04	Leveling Compressor
F05	Not Used
F06	Not Used
F07	Not Used

Fuse Number	Usage
F08	Front Courtesy Lamps
F09	Not Used
F10	Not Used
F11	Not Used
F12	Not Used
F13	Not Used
F14	Not Used
F15	Not Used
F16	Not Used
F17	Not Used
F18	Semi-active Damping System
F19	Universal Garage Door Opener/Rain, Light and Humidity Sensor
F20	Shunt

Fuse Number	Usage
F21	Side Blind Zone
F22	Not Used
F23	All-Wheel Drive
F24	Not Used
F25	Not Used
F26	Not Used
F27	Not Used
F28	Not Used
F29	Not Used
F30	Front Camera
F31	Ultrasonic Rear Parking Assist/Lane Departure
F32	Not Used
F33	Not Used
F34	Not Used
F35	Not Used

Fuse Number	Usage
F36	Not Used
F37	Not Used

Relays	Usage
K1	Not Used
K2	Front Courtesy Lamps Relay
K3	Leveling Compressor Relay
K4	Not Used

Wheels and Tires

Tires

Every new GM vehicle has high-quality tires made by a leading tire manufacturer. See the warranty manual for information regarding the tire warranty and where to get service. For additional information refer to the tire manufacturer.

⚠ WARNING

- Poorly maintained and improperly used tires are dangerous.
- Overloading the tires can cause overheating as a result of too much flexing.

(Continued)

WARNING (Continued)

There could be a blowout and a serious crash. See *Vehicle Load Limits on page 9-10*.

- Underinflated tires pose the same danger as overloaded tires. The resulting crash could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when the tires are cold.
- Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when hitting a pothole. Keep tires at the recommended pressure.

(Continued)

WARNING (Continued)

- Worn or old tires can cause a crash. If the tread is badly worn, replace them.
- Replace any tires that have been damaged by impacts with potholes, curbs, etc.
- Improperly repaired tires can cause a crash. Only the dealer or an authorized tire service center should repair, replace, dismount, and mount the tires.
- Do not spin the tires in excess of 56 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tires to explode.

See *Tire Pressure for High-Speed Operation on page 10-43* for inflation pressure adjustment for high-speed driving.

All-Season Tires

This vehicle may come with all-season tires. These tires are designed to provide good overall performance on most road surfaces and weather conditions. Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. Original equipment all-season tires can be identified by the last two characters of this TPC code, which will be “MS.”

Consider installing winter tires on the vehicle if frequent driving on snow or ice-covered roads is expected. All-season tires provide adequate performance for most winter driving conditions, but they may not offer the same level of traction or performance as winter tires on snow or ice-covered roads. See *Winter Tires on page 10-35*.

Winter Tires

This vehicle was not, originally, equipped with winter tires. Winter tires are designed for increased traction on snow and ice-covered roads. Consider installing winter tires on the vehicle if frequent driving on snow or ice-covered roads is expected. See your dealer for details regarding winter tire availability and proper tire selection. Also, see *Buying New Tires on page 10-50*.

With winter tires, there may be decreased dry road traction, increased road noise, and shorter tread life. After changing to winter tires, be alert for changes in vehicle handling and braking.

If using winter tires:

- Use tires of the same brand and tread type on all four wheel positions.
- Use only radial ply tires of the same size, load range, and speed rating as the original equipment tires.

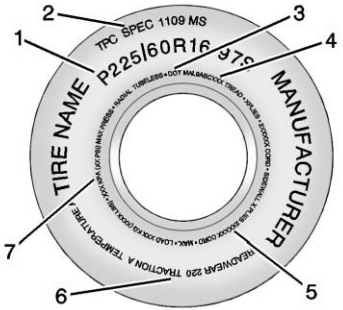
Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y, and ZR speed rated tires. If winter tires with a lower speed rating are chosen, never exceed the tire's maximum speed capability.

Summer Tires

This vehicle may come with high performance summer tires. These tires have a special tread and compound that are optimized for maximum dry and wet road performance. This special tread and compound will decrease performance in cold climates, and on ice and snow. We recommend installing winter tires on the vehicle if frequent driving in cold temperatures or on snow or ice covered roads is expected. See *Winter Tires on page 10-35*.

Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall. The examples show a typical passenger vehicle tire and a compact spare tire sidewall.



Passenger (P-Metric) Tire Example

(1) Tire Size: The tire size is a combination of letters and numbers used to define a particular tire's width, height, aspect ratio, construction type, and service description. See the "Tire Size" illustration later in this section.

(2) TPC Spec (Tire Performance Criteria Specification): Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

(3) DOT (Department of Transportation): The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

DOT Tire Date of Manufacture: The last four digits of the TIN indicate the tire manufactured date. The first two digits represent the week (01–52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

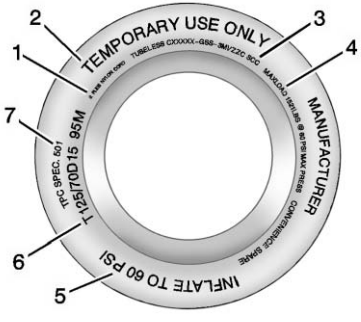
(4) Tire Identification Number (TIN): The letters and numbers following the DOT (Department of Transportation) code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

(5) Tire Ply Material: The type of cord and number of plies in the sidewall and under the tread.

(6) Uniform Tire Quality Grading (UTQG): Tire manufacturers are required to grade tires based on three

performance factors: treadwear, traction, and temperature resistance. For more information see *Uniform Tire Quality Grading on page 10-52*.

(7) Maximum Cold Inflation Load Limit: Maximum load that can be carried and the maximum pressure needed to support that load.



Compact Spare Tire Example

(1) Tire Ply Material: The type of cord and number of plies in the sidewall and under the tread.

(2) Temporary Use Only: The compact spare tire or temporary use tire should not be driven at speeds over 80 km/h (50 mph). The compact spare tire is for emergency use when a regular road tire has lost air and gone flat. If the vehicle has a compact spare tire, see *Compact Spare Tire on page 10-69* and *If a Tire Goes Flat on page 10-55*.

(3) Tire Identification Number (TIN): The letters and numbers following the DOT (Department of Transportation) code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

(4) Maximum Cold Inflation Load Limit: Maximum load that can be carried and the maximum pressure needed to support that load.

(5) Tire Inflation: The temporary use tire or compact spare tire should be inflated to 420 kPa (60 psi). For more information on tire pressure and inflation see *Tire Pressure on page 10-41*.

(6) Tire Size: A combination of letters and numbers define a tire's width, height, aspect ratio, construction type, and service description. The letter T as the first character in the tire size means the tire is for temporary use only.

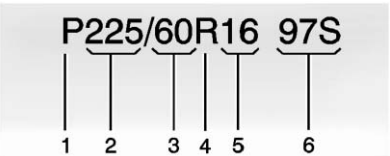
(7) TPC Spec (Tire Performance Criteria Specification): Original equipment tires designed to GM's specific tire performance

criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

Tire Designations

Tire Size

The following is an example of a typical passenger vehicle tire size.



(1) Passenger (P-Metric) Tire: The United States version of a metric tire sizing system. The letter P as the first character in the tire size means a passenger vehicle tire engineered to standards set by the U.S. Tire and Rim Association.

(2) Tire Width: The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

(3) Aspect Ratio: A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is 60, as shown in item 3 of the illustration, it would mean that the tire's sidewall is 60 percent as high as it is wide.

(4) Construction Code: A letter code is used to indicate the type of ply construction in the tire. The letter R means radial ply construction; the letter D means diagonal or bias ply construction; and the letter B means belted-bias ply construction.

(5) Rim Diameter: Diameter of the wheel in inches.

(6) Service Description: These characters represent the load index and speed rating of the tire. The load index represents the load carrying capacity a tire is certified to carry. The speed rating is the maximum speed a tire is certified to carry a load.

Tire Terminology and Definitions

Air Pressure: The amount of air inside the tire pressing outward on each square inch of the tire. Air pressure is expressed in kPa (kilopascal) or psi (pounds per square inch).

Accessory Weight: The combined weight of optional accessories. Some examples of optional accessories are automatic transmission, power

steering, power brakes, power windows, power seats, and air conditioning.

Aspect Ratio: The relationship of a tire's height to its width.

Belt: A rubber coated layer of cords between the plies and the tread. Cords may be made from steel or other reinforcing materials.

Bead: The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

Bias Ply Tire: A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

Cold Tire Pressure: The amount of air pressure in a tire, measured in kPa (kilopascal) or psi (pounds per square inch) before a tire has built up heat from driving. See *Tire Pressure on page 10-41*.

Curb Weight: The weight of a motor vehicle with standard and optional equipment including the maximum capacity of fuel, oil, and coolant, but without passengers and cargo.

DOT Markings: A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation (DOT) Motor Vehicle Safety Standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand, and date of production.

GVWR: Gross Vehicle Weight Rating. See *Vehicle Load Limits on page 9-10*.

GAWR FRT: Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits on page 9-10*.

GAWR RR: Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits on page 9-10*.

Intended Outboard Sidewall: The side of an asymmetrical tire, that must always face outward when mounted on a vehicle.

Kilopascal (kPa): The metric unit for air pressure.

Light Truck (LT-Metric) Tire: A tire used on light duty trucks and some multipurpose passenger vehicles.

Load Index: An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

Maximum Inflation Pressure: The maximum air pressure to which a cold tire can be inflated. The maximum air pressure is molded onto the sidewall.

Maximum Load Rating: The load rating for a tire at the maximum permissible inflation pressure for that tire.

Maximum Loaded Vehicle Weight: The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

Normal Occupant Weight: The number of occupants a vehicle is designed to seat multiplied by 68 kg (150 lbs). See *Vehicle Load Limits on page 9-10*.

Occupant Distribution: Designated seating positions.

Outward Facing Sidewall: The side of an asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.

Passenger (P-Metric) Tire: A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

Recommended Inflation Pressure: Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard. See *Tire Pressure on page 10-41* and *Vehicle Load Limits on page 9-10*.

Radial Ply Tire: A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

Rim: A metal support for a tire and upon which the tire beads are seated.

Sidewall: The portion of a tire between the tread and the bead.

Speed Rating: An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

Traction: The friction between the tire and the road surface. The amount of grip provided.

Tread: The portion of a tire that comes into contact with the road.

Treadwear Indicators: Narrow bands, sometimes called wear bars, that show across the tread

of a tire when only 1.6 mm (1/16 in) of tread remains. See *When It Is Time for New Tires on page 10-49*.

UTQGS (Uniform Tire Quality Grading Standards): A tire information system that provides consumers with ratings for a tire's traction, temperature, and treadwear. Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire. See *Uniform Tire Quality Grading on page 10-52*.

Vehicle Capacity Weight: The number of designated seating positions multiplied by 68 kg (150 lbs) plus the rated cargo load. See *Vehicle Load Limits on page 9-10*.

Vehicle Maximum Load on the Tire: Load on an individual tire due to curb weight, accessory weight, occupant weight, and cargo weight.

Vehicle Placard: A label permanently attached to a vehicle showing the vehicle capacity weight and the original equipment tire size and recommended inflation pressure. See “Tire and Loading Information Label” under *Vehicle Load Limits on page 9-10*.

Tire Pressure

Tires need the correct amount of air pressure to operate effectively.

Notice: **Neither tire underinflation nor overinflation is good. Underinflated tires, or tires that do not have enough air, can result in:**

- **Tire overloading and overheating which could lead to a blowout.**
- **Premature or irregular wear.**
- **Poor handling.**
- **Reduced fuel economy.**

Overinflated tires, or tires that have too much air, can result in:

- **Unusual wear.**
- **Poor handling.**
- **Rough ride.**
- **Needless damage from road hazards.**

The Tire and Loading Information label on the vehicle indicates the original equipment tires and the correct cold tire inflation pressures. The recommended pressure is the minimum air pressure needed to support the vehicle's maximum

load carrying capacity. See *Vehicle Load Limits on page 9-10*.

How the vehicle is loaded affects vehicle handling and ride comfort. Never load the vehicle with more weight than it was designed to carry.

When to Check

Check your tires once a month or more. Do not forget to check the spare tire. If the vehicle has a compact spare tire, it should be at 420 kPa (60 psi). See *Compact Spare Tire on page 10-69* and *Full-Size Spare Tire on page 10-70*.

How to Check

Use a good quality pocket-type gauge to check tire pressure. Proper tire inflation cannot be determined by looking at the tire.

Check the tire inflation pressure when the tires are cold, meaning the vehicle has not been driven for at least three hours or no more than 1.6 km (1 mi).

Remove the valve cap from the tire valve stem. Press the tire gauge firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the Tire and Loading Information label, no further adjustment is necessary. If the inflation pressure is low, add air until the recommended pressure is reached. If the inflation pressure is high, press on the metal stem in the center of the tire valve to release air.

Recheck the tire pressure with the tire gauge.

Return the valve caps on the valve stems to prevent leaks and keep out dirt and moisture.

Professional Vehicle

If the vehicle has P245/45R19 size tires, the cold inflation pressure is 35 psi (241 kPa).

If the vehicle has 235/55R18 size tires, the cold inflation pressure depends on the vehicle mass and should be determined by the vehicle coach-builder. A Tire and Loading Information label provided by the final stage manufacturer should be attached to the B-pillar on the driver side of the vehicle. If the final stage manufacturer's label is not present, contact the coach-builder. Do not use the tire pressures indicated on the General Motors label. These tire pressures are for the incomplete vehicle and are not the correct tire pressures for the completed professional vehicle.

Tire Pressure for High-Speed Operation

⚠ WARNING

Driving at high speeds, 160 km/h (100 mph) or higher, puts an additional strain on tires. Sustained high-speed driving causes excessive heat buildup and can cause sudden tire failure. You could have a crash and you or others could be killed. Some high-speed rated tires require inflation pressure adjustment for high-speed operation. When speed limits and road conditions are such that a vehicle can be driven at high speeds, make sure the tires are rated for high-speed operation, in excellent condition, and set to the correct cold tire inflation pressure for the vehicle load.

Vehicles with P245/45R19 98V size tires require inflation pressure adjustment when driving the vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold inflation pressure to 260 kPa (38 psi).

Vehicles with P245/40R20 95V size tires require inflation pressure adjustment when driving the vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold inflation pressure to 270 kPa (39 psi).

Professional vehicles with 235/55R18 104H size tires require inflation pressure adjustment when driving the vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold inflation pressure to 40 kPa (6 psi) above the recommended cold tire pressure shown on the Tire and Loading Information label for the 235/55R18 104H size tires.

Return the tires to the recommended cold tire inflation pressure when high-speed driving has ended. See *Vehicle Load Limits on page 9-10* and *Tire Pressure on page 10-41*.

Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. The TPMS sensors monitor the air pressure in your tires and transmit tire pressure readings to a receiver located in the vehicle.

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly. The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

See *Tire Pressure Monitor Operation on page 10-44*.

Federal Communications Commission (FCC) Rules and with Industry Canada Standards

See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) Rules and with Industry Canada Standards RSS-GEN/210/220/310.

Tire Pressure Monitor Operation

This vehicle may have a Tire Pressure Monitor System (TPMS). The TPMS is designed to warn the driver when a low tire pressure condition exists. TPMS sensors are mounted onto each tire and wheel assembly, excluding the spare tire and wheel assembly. The TPMS

sensors monitor the air pressure in the tires and transmits the tire pressure readings to a receiver located in the vehicle.

When a low tire pressure condition is detected, the TPMS illuminates the low tire pressure warning light on the instrument cluster. If the warning light comes on, stop as soon as possible and inflate the tires to the recommended pressure shown on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-10*.

A message to check the pressure in a specific tire displays in the Driver Information Center (DIC). The low tire pressure warning light and the DIC warning message come on at each ignition cycle until the tires are inflated to the correct inflation pressure. Using the DIC, tire pressure levels can be viewed. For additional information and details about the DIC operation and displays see *Driver Information Center (DIC) on page 5-28*.

The low tire pressure warning light may come on in cool weather when the vehicle is first started, and then turn off as the vehicle is driven. This could be an early indicator that the air pressure is getting low and needs to be inflated to the proper pressure.

A Tire and Loading Information label, attached to your vehicle, shows the size of the original equipment tires and the correct inflation pressure for the tires when they are cold. See *Vehicle Load Limits on page 9-10*, for an example of the Tire and Loading Information label and its location. Also see *Tire Pressure on page 10-41*.

The TPMS can warn about a low tire pressure condition but it does not replace normal tire maintenance. See *Tire Inspection on page 10-48*, *Tire Rotation on page 10-48* and *Tires on page 10-34*.

Notice: **Tire sealant materials are not all the same. A non-approved tire sealant could damage the TPMS sensors. TPMS sensor damage caused by using an incorrect tire sealant is not covered by the vehicle warranty. Always use only the GM-approved tire sealant available through your dealer or included in the vehicle.**

Factory-installed Tire Inflator Kits use a GM approved liquid tire sealant. Using non-approved tire sealants could damage the TPMS sensors. See *Tire Sealant and Compressor Kit on page 10-57* for information regarding the inflator kit materials and instructions.

TPMS Malfunction Light and Message

The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. When the system detects a malfunction, the low tire warning light flashes for about one minute and then stays on for the remainder of the ignition cycle. A DIC warning message also displays. The malfunction light and DIC warning message come on at each ignition cycle until the problem is corrected. Some of the conditions that can cause these to come on are:

- One of the road tires has been replaced with the spare tire. The spare tire does not have a TPMS sensor. The malfunction light and DIC message should go off after the road tire is replaced and the sensor matching process is performed successfully. See “TPMS Sensor Matching Process” later in this section.
- The TPMS sensor matching process was not done or not completed successfully after rotating the tires. The malfunction light and the DIC message should go off after successfully completing the sensor matching process. See "TPMS Sensor Matching Process" later in this section.
- One or more TPMS sensors are missing or damaged. The malfunction light and the DIC message should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.
- Replacement tires or wheels do not match the original equipment tires or wheels. Tires and wheels other than those recommended could prevent the TPMS from functioning properly. See *Buying New Tires on page 10-50*.
- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

If the TPMS is not functioning properly it cannot detect or signal a low tire condition. See your dealer for service if the TPMS malfunction light and DIC message comes on and stays on.

TPMS Sensor Matching Process

Each TPMS sensor has a unique identification code. The identification code needs to be matched to a new tire/wheel position after rotating the vehicle’s tires or replacing one or more of the TPMS sensors. The TPMS sensor matching process should also be performed after replacing a spare tire with a road tire containing the TPMS sensor. The malfunction light and the DIC message should go off at the next ignition cycle. The sensors are matched to the tire/wheel positions,

using a TPMS relearn tool, in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear. See your dealer for service or to purchase a relearn tool.

There are two minutes to match the first tire/wheel position, and five minutes overall to match all four tire/wheel positions. If it takes longer, the matching process stops and must be restarted.

The TPMS sensor matching process is:

1. Set the parking brake.
2. Place the vehicle power mode in ON/RUN/START. See *Ignition Positions on page 9-15*.
3. Make sure the Tire Pressure info display option is turned on. The info displays on the DIC can be turned on and off through the Settings menu. See *Driver Information Center (DIC) on page 5-28*.
4. Under the Settings menu select Tire Pressure using the five-way DIC control on the right side of the steering wheel. See *Driver Information Center (DIC) on page 5-28*.
5. Press and hold the SEL button located in the center of the five-way DIC control.

   The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARNING ACTIVE message displays on the DIC screen.
6. Start with the driver side front tire.
7. Place the relearn tool against the tire sidewall, near the valve stem. Then press the button to activate the TPMS sensor. A horn chirp confirms that the sensor identification code has been matched to this tire and wheel position.
8. Proceed to the passenger side front tire, and repeat the procedure in Step 7.
9. Proceed to the passenger side rear tire, and repeat the procedure in Step 7.
10. Proceed to the driver side rear tire, and repeat the procedure in Step 7. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tire, and the TPMS sensor matching process is no longer active. The TIRE LEARNING ACTIVE message on the DIC display screen goes off.
11. Press STOP to turn the ignition off.
12. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.

Tire Inspection

We recommend that the tires, including the spare tire, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tire if:

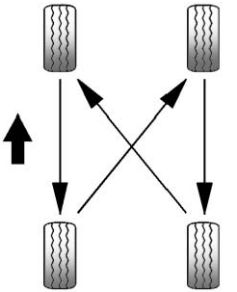
- The indicators at three or more places around the tire can be seen.
- There is cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.
- The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

Tire Rotation

Tires should be rotated every 12 000 km (7,500 mi). See *Maintenance Schedule on page 11-3*.

Tires are rotated to achieve a uniform wear for all tires. The first rotation is the most important.

Anytime unusual wear is noticed, rotate the tires as soon as possible, check for proper tire inflation pressure, and check for damaged tires or wheels. If the unusual wear continues after the rotation, check the wheel alignment. See *When It Is Time for New Tires on page 10-54* and *Wheel Replacement on page 10-54*.



Use this rotation pattern when rotating the tires.

Do not include the spare tire in the tire rotation.

Adjust the front and rear tires to the recommended inflation pressure on the Tire and Loading Information label after the tires have been rotated. See

Tire Pressure on page 9-10 and *Vehicle Load Limits on page 9-10*.

Reset the Tire Pressure Monitor System. See *Tire Pressure Monitor Operation on page 10-44*.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications on page 12-2*.

⚠ WARNING

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper

(Continued)

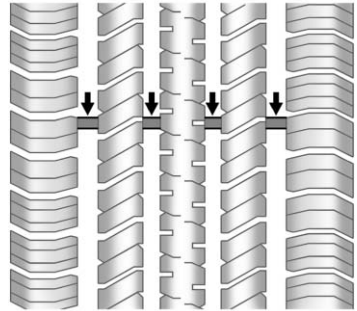
WARNING (Continued)

towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

Lightly coat the center of the wheel hub with wheel bearing grease after a wheel change or tire rotation to prevent corrosion or rust build-up. Do not get grease on the flat wheel mounting surface or on the wheel nuts or bolts.

When It Is Time for New Tires

Factors such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions affect the wear rate of the tires.



Treadwear indicators are one way to tell when it is time for new tires. Treadwear indicators appear when the tires have only 1.6 mm (1/16 in) or less of tread remaining. See *Tire Inspection on page 10-48* and *Tire Rotation on page 10-48*.

The rubber in tires ages over time. This also applies to the spare tire, if the vehicle has one, even if it is never used. Multiple factors including temperatures, loading conditions, and inflation pressure maintenance affect how fast aging takes place. GM recommends that tires, including the spare if

equipped, be replaced after six years, regardless of tread wear. The tire manufacturer date is the last four digits of the DOT Tire Identification Number (TIN) which is molded into one side of the tire sidewall. The first two digits represent the week (01–52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

Vehicle Storage

Tires age when stored normally mounted on a parked vehicle. Park a vehicle that will be stored for at least a month in a cool, dry, clean area away from direct sunlight to slow aging. This area should be free of grease, gasoline, or other substances that can deteriorate rubber.

Parking for an extended period can cause flat spots on the tires that may result in vibrations while driving. When storing a vehicle for at least a month, remove the tires or raise the vehicle to reduce the weight from the tires.

Buying New Tires

GM has developed and matched specific tires for the vehicle. The original equipment tires installed were designed to meet General Motors Tire Performance Criteria Specification (TPC Spec) system rating. When replacement tires are needed, GM strongly recommends buying tires with the same TPC Spec rating.

GM's exclusive TPC Spec system considers over a dozen critical specifications that impact the overall performance of the vehicle, including brake system performance, ride and handling, traction control, and tire pressure monitoring performance. GM's TPC Spec number is molded onto the tire's sidewall near the tire size. If the tires have an all-season tread design, the TPC Spec number will be followed by MS for mud and snow. See *Tire Sidewall Labeling on page 10-36*.

GM recommends replacing worn tires in complete sets of four. Uniform tread depth on all tires will help to maintain the performance of the vehicle. Braking and handling performance may be adversely affected if all the tires are not replaced at the same time. If proper rotation and maintenance have been done, all four tires should wear out at about the same time. See *Tire Rotation on page 10-48* for information on proper tire rotation. However, if it is necessary to replace only one axle set of worn tires, place the new tires on the rear axle.

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y and ZR speed rated tires. Never exceed the winter tire's maximum speed capability when using winter tires with a lower speed rating.

⚠ WARNING

Tires could explode during improper service. Attempting to mount or dismount a tire could cause injury or death. Only your dealer or authorized tire service center should mount or dismount the tires.

⚠ WARNING

Mixing tires of different sizes, brands, or types may cause loss of control of the vehicle, resulting in a crash or other vehicle damage. Use the correct size, brand, and type of tires on all wheels.

⚠ WARNING

Using bias-ply tires on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving. A tire and/or wheel could fail suddenly and cause a crash. Use only radial-ply tires with the wheels on the vehicle.

If the vehicle tires must be replaced with a tire that does not have a TPC Spec number, make sure they are the same size, load range, speed rating, and construction (radial) as the original tires.

Vehicles that have a tire pressure monitoring system could give an inaccurate low-pressure warning if non-TPC Spec rated tires are installed. See *Tire Pressure Monitor System on page 10-43*.

The Tire and Loading Information label indicates the original equipment tires on the vehicle. See *Vehicle Load Limits on page 9-10*.

Different Size Tires and Wheels

If wheels or tires are installed that are a different size than the original equipment wheels and tires, vehicle performance, including its braking, ride and handling characteristics, stability, and resistance to rollover

may be affected. If the vehicle has electronic systems such as antilock brakes, rollover airbags, traction control, electronic stability control, or All-Wheel Drive, the performance of these systems can also be affected.

⚠ WARNING

If different sized wheels are used, there may not be an acceptable level of performance and safety if tires not recommended for those wheels are selected. This increases the chance of a crash and serious injury. Only use GM specific wheel and tire systems developed for the vehicle, and have them properly installed by a GM certified technician.

See *Buying New Tires on page 10-50* and *Accessories and Modifications on page 10-3*.

Uniform Tire Quality Grading

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

Treadwear 200 Traction AA Temperature A

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter tires, compact spare tires, tires with nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal safety requirements and additional General Motors Tire Performance Criteria (TPC) standards.

All Passenger Car Tires Must Conform to Federal Safety Requirements In Addition To These Grades.

Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire

graded 150 would wear one and one-half (1½) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

Traction – AA, A, B, C

The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. Warning: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

Temperature – A, B, C

The temperature grades are A (the highest), B, and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law. Warning: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Wheel Alignment and Tire Balance

The tires and wheels were aligned and balanced at the factory to provide the longest tire life and best overall performance. Adjustments to wheel alignment and tire balancing will not be necessary on a regular basis. However, check the alignment if there is unusual tire wear or if the vehicle is pulling to one side or the other. If the vehicle vibrates when driving on a smooth

road, the tires and wheels might need to be rebalanced. See your dealer for proper diagnosis.

Wheel Replacement

Replace any wheel that is bent, cracked, or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts, and wheel nuts should be replaced. If the wheel leaks air, replace it. Some aluminum wheels can be repaired. See your dealer if any of these conditions exist.

Your dealer will know the kind of wheel that is needed.

Each new wheel should have the same load-carrying capacity, diameter, width, offset, and be mounted the same way as the one it replaces.

Replace wheels, wheel bolts, wheel nuts, or Tire Pressure Monitor System (TPMS) sensors with new GM original equipment parts.

⚠ WARNING

Using the wrong replacement wheels, wheel bolts, or wheel nuts can be dangerous. It could affect the braking and handling of the vehicle. Tires can lose air, and cause loss of control, causing a crash. Always use the correct wheel, wheel bolts, and wheel nuts for replacement.

Notice: **The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.**

Professional vehicle wheels have a unique offset and bolt hole diameter. Professional vehicle wheels have six wheel nuts. Non-professional vehicle wheels have five wheel nuts. See *Tire Changing on page 10-65*.

Used Replacement Wheels

⚠ WARNING

Replacing a wheel with a used one is dangerous. How it has been used or how far it has been driven may be unknown. It could fail suddenly and cause a crash. When replacing wheels, use a new GM original equipment wheel.

Tire Chains

⚠ WARNING

Do not use tire chains. There is not enough clearance. Tire chains used on a vehicle without the proper amount of clearance can cause damage to the brakes, suspension, or other vehicle

(Continued)

WARNING (Continued)

parts. The area damaged by the tire chains could cause loss of control and a crash.

Use another type of traction device only if its manufacturer recommends it for the vehicle's tire size combination and road conditions. Follow that manufacturer's instructions. To avoid vehicle damage, drive slow and readjust or remove the traction device if it contacts the vehicle. Do not spin the wheels. If traction devices are used, install them on the front tires.

If a Tire Goes Flat

It is unusual for a tire to blow out while driving, especially if the tires are maintained properly. See *Tires on page 10-34*. If air goes out of a tire, it is much more likely to leak out slowly. But if there is ever a blowout, here are a few tips about what to expect and what to do:

If a front tire fails, the flat tire creates a drag that pulls the vehicle toward that side. Take your foot off the accelerator pedal and grip the steering wheel firmly. Steer to maintain lane position, and then gently brake to a stop, well off the road, if possible.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction as used in a skid. Stop pressing the accelerator pedal and steer to straighten the vehicle. It may be very bumpy and noisy. Gently brake to a stop, well off the road, if possible.

⚠ WARNING

Driving on a flat tire will cause permanent damage to the tire. Re-inflating a tire after it has been driven on while severely underinflated or flat may cause a blowout and a serious crash. Never attempt to re-inflate a tire that has been driven on while severely underinflated or flat. Have your dealer or an authorized tire service center repair or replace the flat tire as soon as possible.

⚠ WARNING

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for

(Continued)

WARNING (Continued)

changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place, well off the road, if possible. Turn on the hazard warning flashers. See *Hazard Warning Flashers on page 6-5*.

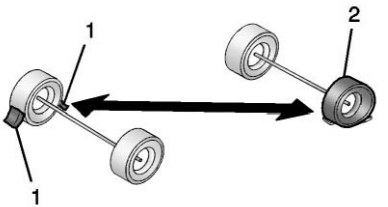
⚠ WARNING

Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall causing injury or death. Find a level place to change the tire. To help prevent the vehicle from moving:

1. Set the parking brake firmly.
2. Put an automatic transmission in P (Park) or a manual transmission in 1 (First) or R (Reverse).
3. Turn off the engine and do not restart while the vehicle is raised.
4. Do not allow passengers to remain in the vehicle.
5. Place wheel blocks on both sides of the tire at the opposite corner of the tire being changed.

This vehicle may come with a jack and spare tire or a tire sealant and compressor kit. To use the jacking equipment to change a spare tire safely, follow the instructions below. Then see *Tire Changing on page 10-65*. To use the tire sealant and compressor kit, see *Tire Sealant and Compressor Kit on page 10-57*.

When the vehicle has a flat tire (2), use the following example as a guide to assist you in the placement of wheel blocks (1).



1. Wheel Block
2. Flat Tire

The following information explains how to repair or change a tire.

Tire Sealant and Compressor Kit

⚠ WARNING

Idling a vehicle in an enclosed area with poor ventilation is dangerous. Engine exhaust may enter the vehicle. Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. It can cause unconsciousness and even death. Never run the engine in an enclosed area that has no fresh air ventilation. For more information, see *Engine Exhaust on page 9-21*.

⚠ WARNING

Overinflating a tire could cause the tire to rupture and you or others could be injured. Be sure to read and follow the tire sealant and compressor kit instructions and inflate the tire to its recommended pressure. Do not exceed the recommended pressure.

⚠ WARNING

Storing the tire sealant and compressor kit or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store the tire sealant and compressor kit in its original location.

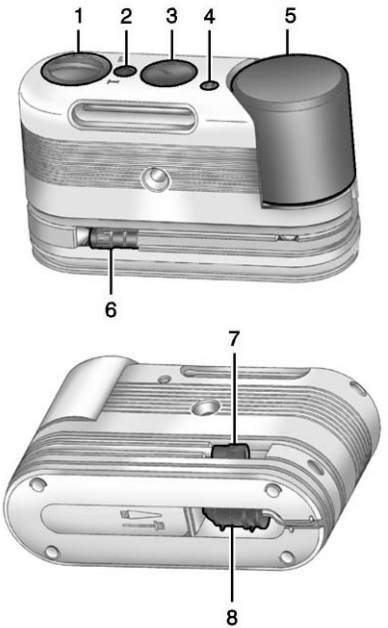
If this vehicle has a tire sealant and compressor kit, there may not be a spare tire or tire changing equipment, and on some vehicles there may not be a place to store a tire.

The tire sealant and compressor can be used to temporarily seal punctures up to 6 mm (0.25 in) in the tread area of the tire. It can also be used to inflate an underinflated tire.

If the tire has been separated from the wheel, has damaged sidewalls, or has a large puncture, the tire is too severely damaged for the tire sealant and compressor kit to be effective. See *Roadside Service on page 13-5*.

Read and follow all of the tire sealant and compressor kit instructions.

The kit includes:



1. Selector Switch (Sealant/Air or Air Only)
2. On/Off Button
3. Pressure Gauge
4. Pressure Deflation Button
5. Tire Sealant Canister
6. Sealant/Air Hose (Clear)
7. Air Only Hose (Black)
8. Power Plug

Tire Sealant

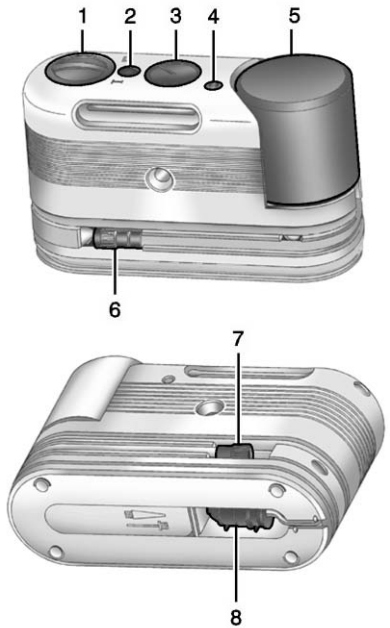
Read and follow the safe handling instructions on the label adhered to the sealant canister.

Check the tire sealant expiration date on the sealant canister. The sealant canister should be replaced before its expiration date. Replacement sealant canisters are available at your local dealer. See “Removal and Installation of the Sealant Canister” following.

There is only enough sealant to seal one tire. After usage, the sealant canister and sealant/air hose assembly must be replaced. See “Removal and Installation of the Sealant Canister” following.

Using the Tire Sealant and Compressor Kit to Temporarily Seal and Inflate a Punctured Tire

Follow the directions closely for correct sealant usage.



1. Selector Switch (Sealant/Air or Air Only)
2. On/Off Button
3. Pressure Gauge
4. Pressure Deflation Button
5. Tire Sealant Canister
6. Sealant/Air Hose (Clear)
7. Air Only Hose (Black)
8. Power Plug

When using the tire sealant and compressor kit during cold temperatures, warm the kit in a heated environment for five minutes. This will help to inflate the tire faster.

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers on page 6-5*.

See *If a Tire Goes Flat on page 10-55* for other important safety warnings.

Do not remove any objects that have penetrated the tire.

1. Remove the tire sealant and compressor kit from its storage location. See *Storing the Tire Sealant and Compressor Kit on page 10-64*.
2. Unwrap the sealant/air hose (6) and the power plug (8).
3. Place the kit on the ground.

   Make sure the tire valve stem is positioned close to the ground so the hose will reach it.
4. Remove the valve stem cap from the flat tire by turning it counterclockwise.
5. Attach the sealant/air hose (6) onto the tire valve stem. Turn it clockwise until it is tight.
6. Plug the power plug (8) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets on page 5-6*.

   If the vehicle has an accessory power outlet, do not use the cigarette lighter.

   If the vehicle only has a cigarette lighter, use the cigarette lighter.

   Do not pinch the power plug cord in the door or window.
7. Start the vehicle. The vehicle must be running while using the air compressor.
8. Press and turn the selector switch (1) counterclockwise to the Sealant + Air position.
9. Press the on/off button (2) to turn the tire sealant and compressor kit on.

   The compressor will inject sealant and air into the tire.

   The pressure gauge (3) will initially show a high pressure while the compressor pushes the sealant into the tire. Once the sealant is completely dispersed into the tire, the pressure will quickly drop and start to rise again as the tire inflates with air only.
10. Inflate the tire to the recommended inflation pressure using the pressure gauge (3). The recommended inflation pressure can be found on the Tire and Loading Information label. See *Tire Pressure on page 10-41*.

    The pressure gauge (3) may read higher than the actual tire pressure while the compressor is on. Turn the compressor off to get an accurate pressure reading. The compressor may be turned on/off until the correct pressure is reached.

Notice: **If the recommended pressure cannot be reached after approximately 25 minutes, the vehicle should not be driven farther. The tire is too severely damaged and the tire sealant and compressor kit cannot inflate the tire. Remove the power plug from**

the accessory power outlet and unscrew the inflating hose from the tire valve. See *Roadside Service on page 13-5*.

11. Press the on/off button (2) to turn the tire sealant and compressor kit off.

    The tire is not sealed and will continue to leak air until the vehicle is driven and the sealant is distributed in the tire, therefore, Steps 12–18 must be done immediately after Step 11.

    Be careful while handling the tire sealant and compressor kit as it could be warm after usage.

12. Unplug the power plug (8) from the accessory power outlet in the vehicle.

13. Turn the sealant/air hose (6) counterclockwise to remove it from the tire valve stem.

14. Replace the tire valve stem cap.

15. Replace the sealant/air hose (6), and the power plug (8) back in their original location.

16. If the flat tire was able to inflate to the recommended inflation pressure, remove the maximum speed label from the sealant canister (5) and place it in a highly visible location. Do not exceed the speed on this label until the damaged tire is repaired or replaced.

17. Return the equipment to its original storage location in the vehicle.

18. Immediately drive the vehicle 8 km (5 mi) to distribute the sealant in the tire.

19. Stop at a safe location and check the tire pressure. Refer to Steps 1–11 under “Using the Tire Sealant and Compressor Kit without Sealant to Inflate a Tire (Not Punctured).”

    If the tire pressure has fallen more than 68 kPa (10 psi) below the recommended inflation pressure, stop driving the vehicle. The tire is too severely damaged and the tire sealant cannot seal the tire. See *Roadside Service on page 13-5*.

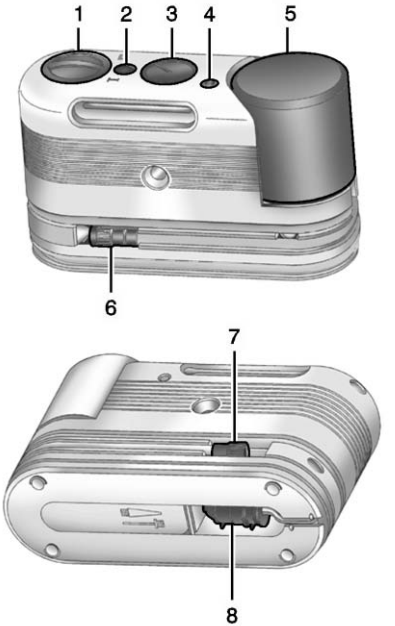
    If the tire pressure has not dropped more than 68 kPa (10 psi) from the recommended inflation pressure, inflate the tire to the recommended inflation pressure.

20. Wipe off any sealant from the wheel, tire, and vehicle.

21. Dispose of the used sealant canister (5) and sealant/air hose (6) assembly at a local dealer or in accordance with local state codes and practices.
22. Replace with a new canister assembly available from your dealer.
23. After temporarily sealing the tire using the tire sealant and compressor kit, take the vehicle to an authorized dealer within 161 km (100 mi) of driving to have the tire repaired or replaced.

Using the Tire Sealant and Compressor Kit without Sealant to Inflate a Tire (Not Punctured)

To use the air compressor to inflate a tire with air only and not sealant:



1. Selector Switch (Sealant/Air or Air Only)
2. On/Off Button
3. Pressure Gauge
4. Pressure Deflation Button
5. Tire Sealant Canister
6. Sealant/Air Hose (Clear)
7. Air Only Hose (Black)
8. Power Plug

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers on page 6-5*.

See *If a Tire Goes Flat on page 10-55* for other important safety warnings.

1. Remove the tire sealant and compressor kit from its storage location. See *Storing the Tire Sealant and Compressor Kit on page 10-64*.
2. Unwrap the air only hose (7) and the power plug (8).

3. Place the kit on the ground.

   Make sure the tire valve stem is positioned close to the ground so the hose will reach it.

4. Remove the tire valve stem cap from the flat tire by turning it counterclockwise.

5. Attach the air only hose (7) onto the tire valve stem by turning it clockwise until it is tight.

6. Plug the power plug (8) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets on page 5-6*.

   If the vehicle has an accessory power outlet, do not use the cigarette lighter.

   If the vehicle only has a cigarette lighter, use the cigarette lighter.

   Do not pinch the power plug cord in the door or window.

7. Start the vehicle. The vehicle must be running while using the air compressor.

8. Press and turn the selector switch (1) clockwise to the Air Only position.

9. Press the on/off button (2) to turn the compressor on.

   The compressor will inflate the tire with air only.

10. Inflate the tire to the recommended inflation pressure using the pressure gauge (3). The recommended inflation pressure can be found on the Tire and Loading Information label. See *Tire Pressure on page 10-41*.

    The pressure gauge (3) may read higher than the actual tire pressure while the compressor is on. Turn the compressor off to get an accurate reading. The compressor may be turned on/off until the correct pressure is reached.

    If you inflate the tire higher than the recommended pressure you can adjust the excess pressure by pressing the pressure deflation button (4) until the proper pressure reading is reached. This option is only functional when using the air only hose (7).

11. Press the on/off button (2) to turn the tire sealant and compressor kit off.

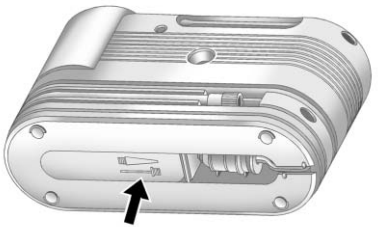
    Be careful while handling the tire sealant and compressor kit as it could be warm after usage.

12. Unplug the power plug (8) from the accessory power outlet in the vehicle.

13. Disconnect the air only hose (7) from the tire valve stem, by turning it counterclockwise, and replace the tire valve stem cap.

14. Replace the air only hose (7) and the power plug (8) and cord back in its original location.

15. Place the equipment in the original storage location in the vehicle.



The tire sealant and compressor kit has an accessory adapter located in a compartment on the bottom of its housing that may be used to inflate air mattresses, balls, etc.

Removal and Installation of the Sealant Canister

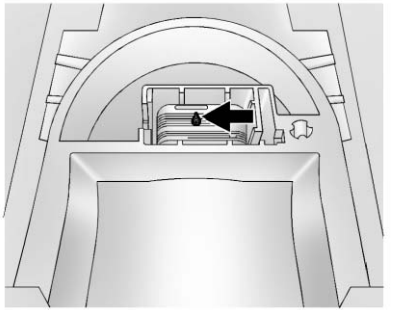
To remove the sealant canister:

1. Unwrap the sealant hose.
2. Press the canister release button.
3. Pull up and remove the canister.
4. Replace with a new canister which is available from your dealer.
5. Push the new canister into place.

Storing the Tire Sealant and Compressor Kit

To access the tire sealant and compressor kit:

1. Open the trunk. See *Trunk on page 2-14*.
2. Lift the cover.

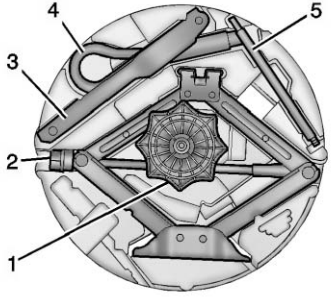


3. Turn the wing nut counterclockwise to remove it.
4. Remove the tire sealant and compressor kit.

To store the tire sealant and compressor kit, reverse the steps.

Tire Changing

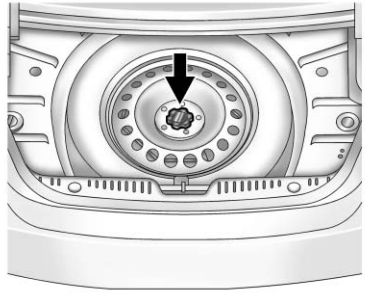
Removing the Spare Tire and Tools



1. Retainer Nut
2. Jack
3. Wrench
4. Tow Hook (If Equipped)
5. Fastener

To access the spare tire and tools:

1. Open the trunk.
2. Remove the spare tire cover.

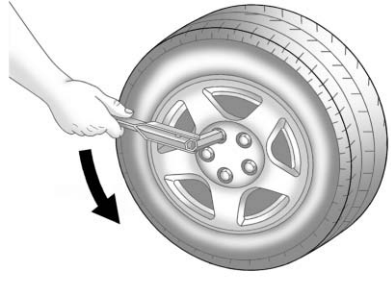


3. Turn the retainer nut counterclockwise and remove the spare tire. Place the spare tire next to the tire being changed.
4. The jack and tools are stored below the spare tire. Remove them from their container and place them near the tire being changed.

If this is a professional vehicle, see the Coachbuilder's Owner Manual for information on the spare tire and tools storage and location.

Removing the Flat Tire and Installing the Spare Tire

1. Do a safety check before proceeding. See *If a Tire Goes Flat on page 10-55*.
2. Turn the wheel wrench counterclockwise to loosen and remove the wheel nut caps.



3. Turn the wheel wrench counterclockwise to loosen all the wheel nuts, but do not remove them yet.
4. Place the jack near the flat tire.

5. Put the compact spare tire near you.

⚠ WARNING

Getting under a vehicle when it is lifted on a jack is dangerous. If the vehicle slips off the jack, you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.

⚠ WARNING

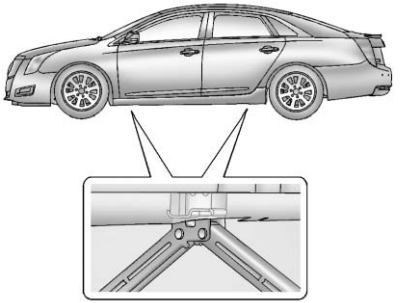
Raising the vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.

⚠ WARNING

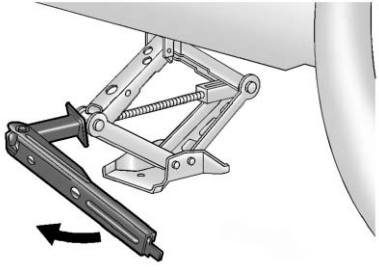
Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

6. Place the hex tube end of the wrench over the hex head of the jack.
7. Place the jack under the vehicle.

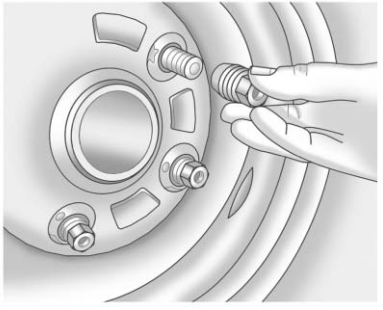
Notice: **Make sure that the jack lift head is in the correct position or you may damage your vehicle. The repairs would not be covered by your warranty.**



8. Position the jack lift head at the jack location nearest the flat tire, as shown. The jack must not be used in any other position.



9. Raise the vehicle by turning the jack handle clockwise. Raise the vehicle far enough off the ground so there is enough room for the road tire to clear the ground.



10. Remove all of the wheel nuts.
11. Remove the flat tire.

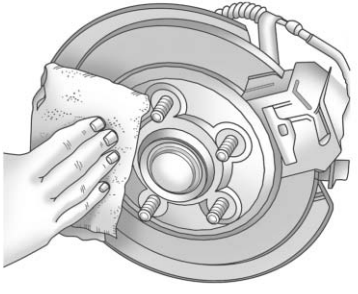
⚠ WARNING

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In

(Continued)

WARNING (Continued)

an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.



12. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.
13. Place the compact spare tire on the wheel-mounting surface.

⚠ WARNING

Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.

14. Reinstall the wheel nuts. Tighten each nut by hand until the wheel is held against the hub.
15. Lower the vehicle by turning the jack handle counterclockwise.

⚠ WARNING

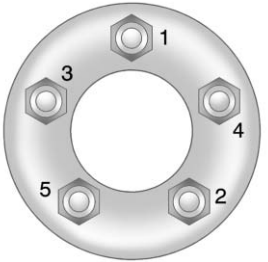
Wheel nuts that are improperly or incorrectly tightened can cause the wheels to become loose or come off. The wheel nuts should be tightened with a torque wrench to the proper torque specification after replacing. Follow the torque specification supplied by the

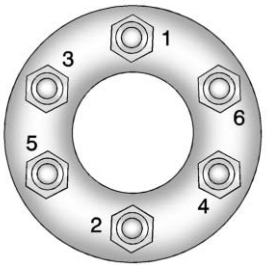
(Continued)

WARNING (Continued)

aftermarket manufacturer when using accessory locking wheel nuts. See *Capacities and Specifications on page 12-2* for original equipment wheel nut torque specifications.

Notice: **Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See *Capacities and Specifications on page 12-2* for the wheel nut torque specification.**





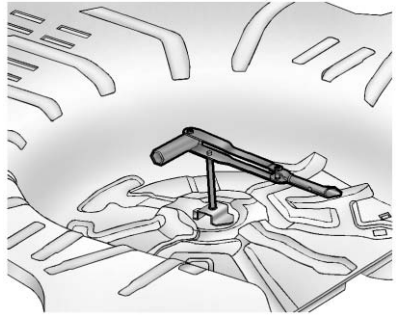
16. Tighten the wheel nuts firmly in a crisscross sequence, as shown.

17. Lower the jack all the way and remove the jack from under the vehicle.
18. Tighten the wheel nuts firmly with the wheel wrench.

Storing a Flat or Spare Tire and Tools

⚠ WARNING

Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.



1. Turn the wrench counterclockwise to remove the fastener.
2. Replace the fastener with the one provided in the foam.
3. Turn the wrench clockwise to tighten the fastener.
4. Replace the foam, jack and tools, and the tire.
5. Turn the retainer nut clockwise to secure the tire.
6. Place the floor cover on the wheel.

To store the compact spare tire, use the shorter mounting bolt.

The compact spare is for temporary use only. Replace the compact spare tire with a full-size tire as soon as you can.

Compact Spare Tire

⚠ WARNING

Driving with more than one compact spare tire at a time could result in loss of braking and handling. This could lead to a crash and you or others could be injured. Use only one compact spare tire at a time.

If this vehicle has a compact spare tire, it was fully inflated when new; however, it can lose air over time. Check the inflation pressure regularly. It should be 420 kPa (60 psi).

Stop as soon as possible and check that the spare tire is correctly inflated after being installed on the vehicle. The compact spare tire is designed for temporary use only. The vehicle will perform differently with the spare tire installed and it is recommended that the vehicle speed be limited to 80 km/h (50 mph). To conserve the tread of the spare tire, have the standard tire repaired or replaced as soon as convenient and return the spare tire to the storage area.

Notice: **When the compact spare is installed, do not take the vehicle through an automatic car wash with guide rails. The compact spare can get caught on the rails which can damage the tire, wheel, and other parts of the vehicle.**

Do not use the compact spare on other vehicles.

Do not mix the compact spare tire or wheel with other wheels or tires. They will not fit. Keep the spare tire and its wheel together.

Notice: **Tire chains will not fit the compact spare. Using them can damage the vehicle and the chains. Do not use tire chains on the compact spare.**

Full-Size Spare Tire

If this vehicle came with a full-size spare tire, it was fully inflated when new, however, it can lose air over time. Check the inflation pressure regularly. See *Tire Pressure on page 10-41* and *Vehicle Load Limits on page 9-10* for information regarding proper tire inflation and loading the vehicle. For instructions on how to remove, install, or store a spare tire, see *Tire Changing on page 10-65*.

After installing the spare tire on the vehicle, stop as soon as possible and check that the spare is correctly inflated. The spare tire is made to perform well at speeds up to 112 km/h (70 mph) at the recommended inflation pressure, so you can finish your trip.

Have the damaged or flat road tire repaired or replaced and installed back onto the vehicle as soon as possible so the spare tire will be available in case it is needed again. Do not mix tires and wheels of different sizes, because they will not fit. Keep the spare tire and its wheel together.

Jump Starting

For more information about the vehicle battery, see *Battery on page 10-20*.

If the battery has run down, try to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

⚠ WARNING

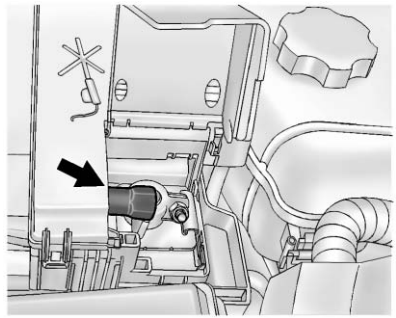
Batteries can hurt you. They can be dangerous because:

- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

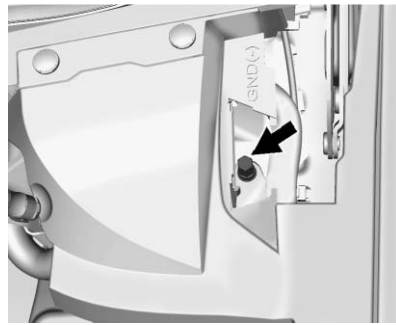
If you do not follow these steps exactly, some or all of these things can hurt you.

Notice: **Ignoring these steps could result in costly damage to the vehicle that would not be covered by the warranty.**

Trying to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle.



The vehicle has a remote positive (+) location. It is located on the driver side of the engine compartment. See *Engine Compartment Overview on page 10-5*. You should always use this remote positive location, instead of the terminal on the battery.



The vehicle has a remote negative (−) ground location. It is located on the driver side of the engine compartment. See *Engine Compartment Overview on page 10-5*. You should always use this remote ground location, instead of the terminal on the battery.

These posts are used instead of a direct connection to the battery.

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

Notice: **Only use a vehicle that has a 12-volt system with a negative ground for jump starting. If the other vehicle does not have a 12-volt system with a negative ground, both vehicles can be damaged.**

2. Position the two vehicles so that they are not touching.
3. Set the parking brake firmly. Vehicles with an automatic transmission should be in P (Park). See *Shifting Into Park on page 9-19*.

Notice: **If any accessories are left on or plugged in during the jump starting procedure, they could be damaged. The repairs would not be covered by the vehicle warranty. Whenever possible, turn off or unplug all accessories on either vehicle when jump starting the vehicle.**

4. Turn the ignition to OFF and switch off all lights and accessories in both vehicles, except the hazard warning flashers if needed.

⚠ WARNING

An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.

⚠ WARNING

Using a match near a battery can cause battery gas to explode. People have been hurt doing this, and some have been blinded. Use a flashlight if you need more light.

Be sure the battery has enough water. You do not need to add water to the battery installed in your new vehicle. But if a battery has filler caps, be sure the right amount of fluid is there. If it is low, add water to take care of that first. If you do not, explosive gas could be present.

Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.

⚠ WARNING

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

5. Connect one end of the red positive (+) cable to the jump start remote positive (+) post for the discharged battery.
6. Connect the other end of the red positive (+) cable to the positive (+) terminal of the good battery.
7. Connect one end of the black negative (–) cable to the negative (–) terminal of the good battery.
8. Connect the other end of the black negative (–) cable to the remote negative (–) post for the discharged battery.
9. Start the engine in the vehicle with the good battery and run the engine at idle speed for at least four minutes.
10. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

Notice: **If the jumper cables are connected or removed in the wrong order, electrical shorting may occur and damage the vehicle. The repairs would not be covered by the vehicle warranty. Always connect and remove the jumper cables in the correct order, making sure that the cables do not touch each other or other metal.**

Jumper Cable Removal

Reverse the sequence exactly when removing the jumper cables.

Towing

Towing the Vehicle

Notice: **Incorrectly towing a disabled vehicle may cause damage. The damage would not be covered by the vehicle warranty.**

Have the vehicle towed on a wheel lift tow truck. A flatbed car carrier could damage the vehicle. The wheel lift tow truck must raise the rear of the vehicle and wheel dollies must be used to lift the front wheels off the ground.

Consult your dealer or a professional towing service if the disabled vehicle must be towed.

To tow the vehicle behind another vehicle for recreational purposes, such as behind a motor home, see “Recreational Vehicle Towing” in this section.

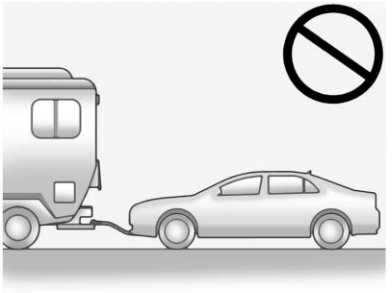
Recreational Vehicle Towing

Recreational vehicle towing means towing the vehicle behind another vehicle such as a motor home. The two most common types of recreational vehicle towing are known as dinghy towing and dolly towing. Dinghy towing is towing the vehicle with all four wheels on the ground. Dolly towing is towing the vehicle with two wheels on the ground and two wheels up on a device known as a dolly.

Here are some important things to consider before recreational vehicle towing:

- What is the towing capacity of the towing vehicle? Be sure to read the tow vehicle manufacturer's recommendations.
- What is the distance that will be traveled? Some vehicles have restrictions on how far and how long they can tow.
- Is the proper towing equipment going to be used? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is the vehicle ready to be towed? Just as preparing the vehicle for a long trip, make sure the vehicle is prepared to be towed.

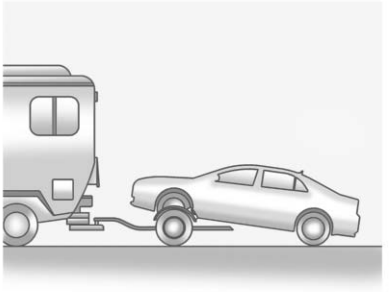
Dinghy Towing



Notice: **If the vehicle is towed with all four wheels on the ground, the drivetrain components could be damaged. The repairs would not be covered by the vehicle warranty. Do not tow the vehicle with all four wheels on the ground.**

The vehicle was not designed to be towed with all four wheels on the ground. If the vehicle must be towed, a dolly should be used. See the following information on dolly towing.

Dolly Towing from the Front (Front-Wheel Drive)

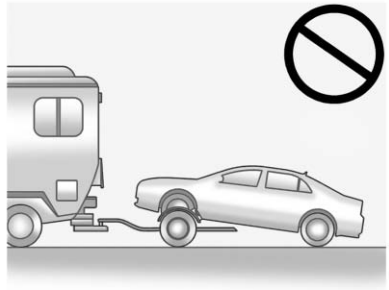


Vehicles with front-wheel drive can be dolly towed from the front.

Use the following procedure to dolly tow the vehicle from the front:

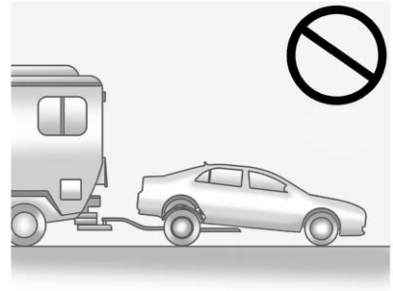
1. Attach the dolly to the tow vehicle following the dolly manufacturer instructions.
2. Drive the front wheels onto the dolly.
3. Shift the transmission to P (Park).
4. Firmly set the parking brake.
5. Use an adequate clamping device designed for towing to ensure that the front wheels are locked into the straight-ahead position.
6. Secure the vehicle to the dolly following the manufacturer instructions.
7. Release the parking brake only after the vehicle being towed is firmly attached to the towing vehicle.
8. Turn the ignition to OFF.

Dolly Towing from the Front (All-Wheel Drive)



Vehicles with all-wheel drive cannot be dolly towed.

Dolly Towing from the Rear



The vehicle cannot be dolly towed from the rear.

Appearance Care

Exterior Care

Washing the Vehicle

To preserve the vehicle's finish, wash it often and out of direct sunlight.

Notice: **Do not use petroleum-based, acidic, or abrasive cleaning agents as they can damage the vehicle's paint, metal, or plastic parts. If damage occurs, it would not be covered by the vehicle's warranty. Approved cleaning products can be obtained from your dealer. Follow all manufacturer directions regarding correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.**

Notice: **Avoid using high-pressure washes closer than 30 cm (12 in) to the surface of the vehicle. Use of power washers exceeding 8,274 kPa (1,200 psi) can result in damage or removal of paint and decals.**

Rinse the vehicle well, before washing and after, to remove all cleaning agents completely. If they are allowed to dry on the surface, they could stain.

Dry the finish with a soft, clean chamois or an all-cotton towel to avoid surface scratches and water spotting.

Finish Care

Application of aftermarket clearcoat sealant/wax materials is not recommended. If painted surfaces are damaged, see your dealer to have the damage assessed and repaired. Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, etc., can damage the vehicle's finish if they remain on painted surfaces. Wash the vehicle as soon as possible.

If necessary, use non-abrasive cleaners that are marked safe for painted surfaces to remove foreign matter.

Occasional hand waxing or mild polishing should be done to remove residue from the paint finish. See your dealer for approved cleaning products.

Do not apply waxes or polishes to uncoated plastic, vinyl, rubber, decals, simulated wood, or flat paint as damage can occur.

Notice: **Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a basecoat/clearcoat paint finish on the vehicle.**

To keep the paint finish looking new, keep the vehicle garaged or covered whenever possible.

Protecting Exterior Bright Metal Parts

Regularly clean bright metal parts with water or chrome polish on chrome or stainless steel trim, if necessary.

For aluminum, never use auto or chrome polish, steam, or caustic soap to clean. A coating of wax, rubbed to a high polish, is recommended for all bright metal parts.

Cleaning Exterior Lamps/ Lenses and Emblems

Use only lukewarm or cold water, a soft cloth, and a car washing soap to clean exterior lamps, lenses and emblems. Follow instructions under "Washing the Vehicle" in this section.

Windshield and Wiper Blades

Clean the outside of the windshield with glass cleaner.

Clean rubber blades using a lint-free cloth or paper towel soaked with windshield washer fluid or a mild detergent. Wash the windshield thoroughly when cleaning the blades. Bugs, road grime, sap, and a buildup of vehicle wash/wax treatments may cause wiper streaking.

Replace the wiper blades if they are worn or damaged. Damage can be caused by extreme dusty conditions, sand, salt, heat, sun, snow, and ice.

Weatherstrips

Apply silicone grease on weatherstrips to make them last longer, seal better, and not stick or squeak. Lubricate weatherstrips once a year. Black marks from rubber material on painted surfaces can be removed by rubbing with a clean cloth. See *Recommended Fluids and Lubricants on page 11-13*.

Tires

Use a stiff brush with tire cleaner to clean the tires.

Notice: **Using petroleum-based tire dressing products on the vehicle may damage the paint finish and/or tires. When applying a tire dressing, always wipe off any overspray from all painted surfaces on the vehicle.**

Wheels and Trim — Aluminum or Chrome

Use a soft, clean cloth with mild soap and water to clean the wheels. After rinsing thoroughly with clean water, dry with a soft, clean towel. A wax may then be applied.

Notice: **Chrome wheels and other chrome trim may be damaged if the vehicle is not washed after driving on roads that have been sprayed with magnesium, calcium, or sodium chloride. These chlorides are used on roads for conditions such as ice**

and dust. Always wash the chrome with soap and water after exposure.

Notice: **To avoid surface damage, do not use strong soaps, chemicals, abrasive polishes, cleaners, brushes, or cleaners that contain acid on aluminum or chrome-plated wheels. Use only approved cleaners. Also, never drive a vehicle with aluminum or chrome-plated wheels through an automatic car wash that uses silicone carbide tire cleaning brushes. Damage could occur and the repairs would not be covered by the vehicle warranty.**

Steering, Suspension, and Chassis Components

Visually inspect the front and rear suspension and steering system for damaged, loose, or missing parts or signs of wear. Inspect the power steering for proper hook-up, binding, leaks, cracks, chafing, etc. Visually check constant velocity joints, rubber boots, and axle seals for leaks.

Body Component Lubrication

Lubricate all key lock cylinders, hood hinges, liftgate hinges, and the steel fuel door hinge unless the components are plastic. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

Underbody Maintenance

Use plain water to flush dirt and debris from the vehicle's underbody. Your dealer or an underbody car washing system can do this. If not removed, rust and corrosion can develop.

Sheet Metal Damage

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the vehicle warranty.

Finish Damage

Quickly repair minor chips and scratches with touch-up materials available from your dealer to avoid corrosion. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

Chemical Paint Spotting

Airborne pollutants can fall upon and attack painted vehicle surfaces causing blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface.

Interior Care

To prevent dirt particle abrasions, regularly clean the vehicle's interior. Immediately remove any soils. Note that newspapers or dark garments that can transfer color to home furnishings can also permanently transfer color to the vehicle's interior.

Use a soft bristle brush to remove dust from knobs and crevices on the instrument cluster. Using a mild soap solution, immediately remove hand lotions, sunscreen, and insect repellent from all interior surfaces or permanent damage may result.

Your dealer may have products for cleaning the interior. Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage. Apply all cleaners directly to the cleaning cloth. Do not spray cleaners directly on any switches or controls. Cleaners should be removed quickly. Never allow cleaners to remain on the surface being cleaned for extended periods of time.

Cleaners may contain solvents that can become concentrated in the interior. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning the interior, maintain adequate ventilation by opening the doors and windows.

To prevent damage, do not clean the interior using the following cleaners or techniques:

- Never use a razor or any other sharp object to remove a soil from any interior surface.
- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with excessive pressure.
- Do not use laundry detergents or dishwashing soaps with degreasers. For liquid cleaners, use approximately 20 drops per 3.78 L (1 gal) of water. A concentrated soap solution will leave a residue that creates streaks and attracts dirt. Do not use solutions that contain strong or caustic soap.
- Do not heavily saturate the upholstery when cleaning.
- Do not use solvents or cleaners containing solvents.

Interior Glass

To clean, use a terry cloth fabric dampened with water. Wipe droplets left behind with a clean dry cloth. Commercial glass cleaners may be used, if necessary, after cleaning the interior glass with plain water.

Notice: **To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.**

Notice: **Cleaning the windshield with water during the first three to six months of ownership will reduce tendency to fog.**

Speaker Covers

Vacuum around a speaker cover gently, so that the speaker will not be damaged. Clean spots with just water and mild soap.

Coated Moldings

Coated moldings should be cleaned.

- When lightly soiled, wipe with a sponge or soft lint-free cloth dampened with water.
- When heavily soiled, use warm soapy water.

Fabric/Carpet/Suede

Start by vacuuming the surface using a soft brush attachment. If a rotating brush attachment is being used during vacuuming, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible using one of the following techniques:

- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soils, remove as much as possible prior to vacuuming.

To clean:

1. Saturate a clean lint-free colorfast cloth with water or club soda. Microfiber cloth is recommended to prevent lint transfer to the fabric or carpet.
2. Remove excess moisture by gently wringing until water does not drip from the cleaning cloth.
3. Start on the outside edge of the soil and gently rub toward the center. Fold the cleaning cloth to a clean area frequently to prevent forcing the soil in to the fabric.
4. Continue gently rubbing the soiled area until there is no longer any color transfer from the soil to the cleaning cloth.
5. If the soil is not completely removed, use a mild soap solution followed only by club soda or plain water.

If the soil is not completely removed, it may be necessary to use a commercial upholstery cleaner or spot lifter. Test a small hidden area for colorfastness before using a commercial upholstery cleaner or spot lifter. If ring formation occurs, clean the entire fabric or carpet.

Following the cleaning process, a paper towel can be used to blot excess moisture.

Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays

For vehicles with high gloss surfaces or vehicle displays, use a microfiber cloth to wipe surfaces.

Before wiping the surface with the microfiber cloth, use a soft bristle brush to remove dirt that could scratch the surface. Then use the microfiber cloth by gently rubbing to clean. Never use window cleaners or solvents. Periodically hand wash the microfiber cloth separately, using mild soap. Do not use bleach or fabric softener. Rinse thoroughly and air dry before next use.

Notice: **Do not attach a device with a suction cup to the display. This may cause damage and would not be covered by the warranty.**

Instrument Panel, Leather, Vinyl, & Other Plastic Surfaces

Use a soft microfiber cloth dampened with water to remove dust and loose dirt. For a more thorough cleaning, use a soft microfiber cloth dampened with a mild soap solution.

Notice: **Soaking or saturating leather, especially perforated leather, as well as other interior surfaces, may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, spot lifters, or spot removers. Do not use cleaners that contain silicone or wax-based products. Cleaners containing these solvents can permanently change the appearance and feel of leather or soft trim and are not recommended.**

Do not use cleaners that increase gloss, especially on the instrument panel. Reflected glare can decrease visibility through the windshield under certain conditions.

Notice: **Use of air fresheners may cause permanent damage to plastics and painted surfaces. If an air freshener comes in contact with any plastic or painted surface in the vehicle, blot immediately and clean with a soft cloth dampened with a mild soap solution. Damage caused by air fresheners would not be covered by the vehicle warranty.**

Cargo Cover and Convenience Net

Wash with warm water and mild detergent. Do not use chlorine bleach. Rinse with cold water, and then dry completely.

Care of Safety Belts

Keep belts clean and dry.

⚠ WARNING

Do not bleach or dye safety belts. It may severely weaken them. In a crash, they might not be able to provide adequate protection. Clean safety belts only with mild soap and lukewarm water.

Floor Mats

⚠ WARNING

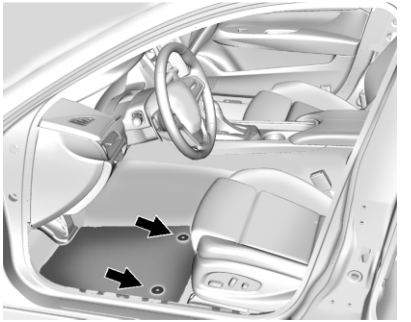
If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

Use the following guidelines for proper floor mat usage.

- The original equipment floor mats were designed for your vehicle. If the floor mats need replacing, it is recommended that GM certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the pedals. Always check that the floor mats do not interfere with the pedals.
- Use the floor mat with the correct side up. Do not turn it over.
- Do not place anything on top of the driver side floor mat.
- Use only a single floor mat on the driver side.
- Do not place one floor mat on top of another.

The driver side floor mat is held in place by button-type retainers.

Removing and Replacing the Floor Mats



1. Pull up on the rear of the floor mat to unlock the retainers and remove.
2. Reinstall by lining up the floor mat retainer openings over the carpet retainers and snap into position.
3. Make sure the floor mat is properly secured in place.

Service and Maintenance

General Information
General Information 11-1

Cadillac Premium Care Maintenance
Cadillac Premium Care Maintenance 11-3

Maintenance Schedule
Maintenance Schedule 11-3

Special Application Services
Special Application Services 11-9

Additional Maintenance and Care
Additional Maintenance and Care 11-10

Recommended Fluids, Lubricants, and Parts
Recommended Fluids and Lubricants 11-13
Maintenance Replacement Parts 11-14

Maintenance Records
Maintenance Records 11-15

General Information

Your vehicle is an important investment. This section describes the required maintenance for the vehicle. Follow this schedule to help protect against major repair expenses resulting from neglect or inadequate maintenance. It may also help to maintain the value of the vehicle if it is sold. It is the responsibility of the owner to have all required maintenance performed.

Your dealer has trained technicians who can perform required maintenance using genuine replacement parts. They have up-to-date tools and equipment for fast and accurate diagnostics. Many dealers have extended evening and Saturday hours, courtesy transportation, and online scheduling to assist with service needs.

Your dealer recognizes the importance of providing competitively priced maintenance and repair services. With trained

technicians, the dealer is the place for routine maintenance such as oil changes and tire rotations and additional maintenance items like tires, brakes, batteries, and wiper blades.

Notice: **Damage caused by improper maintenance can lead to costly repairs and may not be covered by the vehicle warranty. Maintenance intervals, checks, inspections, recommended fluids, and lubricants are important to keep the vehicle in good working condition.**

The Tire Rotation and Required Services are the responsibility of the vehicle owner. It is recommended to have your dealer perform these services every 12 000 km/7,500 mi. Proper vehicle maintenance helps to keep the vehicle in good working condition, improves fuel economy, and reduces vehicle emissions.

Because of the way people use vehicles, maintenance needs vary. There may need to be more frequent checks and services. The Additional Required Services - Normal are for vehicles that:

- Carry passengers and cargo within recommended limits on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-10*.
- Are driven on reasonable road surfaces within legal driving limits.
- Use the recommended fuel. See *Recommended Fuel on page 9-56*.

Refer to the information in the Maintenance Schedule Additional Required Services - Normal chart.

The Additional Required Services - Severe are for vehicles that are:

- Mainly driven in heavy city traffic in hot weather.
- Mainly driven in hilly or mountainous terrain.
- Frequently towing a trailer.
- Used for high speed or competitive driving.
- Used for taxi, police, or delivery service.

Refer to the information in the Maintenance Schedule Additional Required Services - Severe chart.

⚠ WARNING

Performing maintenance work can be dangerous and can cause serious injury. Perform maintenance work only if the required information, proper tools, and equipment are available.
If they are not, see your dealer to have a trained technician do the work. See *Doing Your Own Service Work on page 10-3*.

Cadillac Premium Care Maintenance

Your vehicle comes with the Cadillac Premium Care Maintenance. It is a maintenance program that covers select maintenance services during the first 4 years or 80 000 km (50,000 mi), whichever comes first.

Cadillac Premium Care Maintenance covers routine maintenance services, when scheduled in accordance with the owner manual, including:

- Oil changes based on the vehicle's oil life monitor system.
- Tire rotation every 12 000 km (7,500 mi).
- Engine air cleaner filter replacement.
- Passenger compartment air filter replacement.
- Multi-point vehicle inspection (MPVI) performed by a qualified technician.

Cadillac requires that all Cadillac Premium Care Maintenance services be performed by a Cadillac authorized service dealer.

Maintenance Schedule

Owner Checks and Services

At Each Fuel Stop

- Check the engine oil level. See *Engine Oil on page 10-6*.

Once a Month

- Check the tire inflation pressures. See *Tire Pressure on page 10-41*.
- Inspect the tires for wear. See *Tire Inspection on page 10-48*.
- Check the windshield washer fluid level. See *Washer Fluid on page 10-17*.

Engine Oil Change

When the CHANGE ENGINE OIL SOON message displays, have the engine oil and filter changed within the next 1 000 km/600 mi. If driven under the best conditions, the engine oil life system might not indicate the need for vehicle service

for more than a year. The engine oil and filter must be changed at least once a year and the oil life system must be reset. Your trained dealer technician can perform this work. If the engine oil life system is reset accidentally, service the vehicle within 5 000 km/3,000 mi since the last service. Reset the oil life system when the oil is changed. See *Engine Oil Life System on page 10-9*.

Tire Rotation and Required Services Every 12 000 km/ 7,500 mi

Rotate the tires, if recommended for the vehicle, and perform the following services. See *Tire Rotation on page 10-48*.

- Check engine oil level and oil life percentage. If needed, change engine oil and filter, and reset oil life system. See *Engine Oil on page 10-6* and *Engine Oil Life System on page 10-9*.
- Check engine coolant level. See *Engine Coolant on page 10-12*.
- Check windshield washer fluid level. See *Washer Fluid on page 10-17*.
- Visually inspect windshield wiper blades for wear, cracking, or contamination. See *Exterior Care on page 10-76*. Replace worn or damaged wiper blades. See *Wiper Blade Replacement on page 10-22*.
- Check tire inflation pressures. See *Tire Pressure on page 10-41*.
- Inspect tire wear. See *Tire Inspection on page 10-48*.
- Visually check for fluid leaks.
- Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter on page 10-10*.
- Inspect brake system.
- Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear. See *Exterior Care on page 10-76*.
- Check restraint system components. See *Safety System Check on page 3-21*.
- Visually inspect fuel system for damage or leaks.
- Visually inspect exhaust system and nearby heat shields for loose or damaged parts.
- Lubricate body components. See *Exterior Care on page 10-76*.
- Check starter switch. See *Starter Switch Check on page 10-20*.
- Check automatic transmission shift lock control function. See *Automatic Transmission Shift Lock Control Function Check on page 10-21*.
- Check parking brake and automatic transmission park mechanism. See *Park Brake and P (Park) Mechanism Check on page 10-21*.

- Check accelerator pedal for damage, high effort, or binding. Replace if needed.
- Visually inspect gas strut for signs of wear, cracks, or other damage. Check the hold open ability of the strut. See your dealer if service is required.
- Check tire sealant expiration date, if equipped. See *Tire Sealant and Compressor Kit on page 10-57*.
- Inspect sunroof track and seal, if equipped. See *Sunroof on page 2-24*.

Additional Required Services

Maintenance Schedule Additional Required Services - Normal	12000km/7,500mi	24000km/15,000mi	36000km/22,500mi	48000km/30,000mi	60000km/37,500mi	72000km/45,000mi	84000km/52,500mi	96000km/60,000mi	108000km/67,500mi	120000km/75,000mi	132000km/82,500mi	144000km/90,000mi	156000km/97,500mi	168000km/105,000mi	180000km/112,500mi	192000km/120,000mi	204000km/127,500mi	216000km/135,000mi	228000km/142,500mi	240000km/150,000mi
Rotate tires and perform Required Services. Check engine oil level and oil life percentage. Change engine oil and filter, if needed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace passenger compartment air filter. (1)			✓			✓			✓			✓			✓			✓		
Inspect evaporative control system. (2)						✓						✓						✓		
Replace engine air cleaner filter. (3)						✓						✓						✓		
Replace spark plugs. Inspect spark plug wires.													✓							
Change automatic transmission fluid. Change filter if serviceable.													✓							
Drain, flush, and fill engine cooling system. (4)																				✓
Visually inspect accessory drive belts. (5)																				✓
Replace brake fluid. (6)																				✓

Footnotes — Maintenance Schedule Additional Required Services - Normal

(1) Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, areas with poor air quality, or areas with high dust levels. Replacement may also be needed if there is a reduction in air flow, excessive window fogging, or odors.

(2) Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition. Check that the purge valve works properly, if the vehicle has one. Replace as needed.

(3) Or every four years, whichever comes first.

(4) Or every five years, whichever comes first. See *Cooling System on page 10-11*.

(5) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

(6) Or every 10 years, whichever comes first.

Maintenance Schedule Additional Required Services - Severe	12000km/7,500mi	24000km/15,000mi	36000km/22,500mi	48000km/30,000mi	60000km/37,500mi	72000km/45,000mi	84000km/52,500mi	96000km/60,000mi	108000km/67,500mi	120000km/75,000mi	132000km/82,500mi	144000km/90,000mi	156000km/97,500mi	168000km/105,000mi	180000km/112,500mi	192000km/120,000mi	204000km/127,500mi	216000km/135,000mi	228000km/142,500mi	240000km/150,000mi
Rotate tires and perform Required Services. Check engine oil level and oil life percentage. Change engine oil and filter, if needed.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Replace passenger compartment air filter. (1)			✓			✓			✓			✓			✓			✓		
Inspect evaporative control system. (2)						✓						✓						✓		
Replace engine air cleaner filter. (3)						✓						✓						✓		
Change automatic transmission fluid. Change filter if serviceable.						✓						✓						✓		
Replace spark plugs. Inspect spark plug wires.													✓							
Drain, flush, and fill engine cooling system. (4)																				✓
Visually inspect accessory drive belts. (5)																				✓
Replace brake fluid. (6)																				✓

Footnotes — Maintenance Schedule Additional Required Services - Severe

(1) Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, areas with poor air quality, or areas with high dust levels. Replacement may also be needed if there is a reduction in air flow, excessive window fogging, or odors.

(2) Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition. Check that the purge valve works properly, if the vehicle has one. Replace as needed.

(3) Or every four years, whichever comes first.

(4) Or every five years, whichever comes first. See *Cooling System on page 10-11*.

(5) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

(6) Or every 10 years, whichever comes first.

Special Application Services

- Severe Commercial Use Vehicles Only: Lubricate chassis components every 5 000 km/ 3,000 mi.
- Have underbody flushing service performed once a year.

Additional Maintenance and Care

Your vehicle is an important investment and caring for it properly may help to avoid future costly repairs. To maintain vehicle performance, additional maintenance services may be required. It is recommended that your dealer perform these services — their trained dealer technicians know your vehicle best. Your dealer can also perform a thorough assessment with a multi-point inspection to recommend when your vehicle may need attention. The following list is intended to explain the services and conditions to look for that may indicate services are required.

Battery

The battery supplies power to start the engine and operate any additional electrical accessories.

- To avoid break-down or failure to start the vehicle, maintain a battery with full cranking power.
- Trained dealer technicians have the diagnostic equipment to test the battery and ensure that the connections and cables are corrosion-free.

Belts

- Belts may need replacing if they squeak or show signs of cracking or splitting.
- Trained dealer technicians can inspect the belts and recommend replacement when necessary.

Brakes

Brakes stop the vehicle and are crucial to safe driving.

- Signs of brake wear may include chirping, grinding, or squealing noises, or difficulty stopping.
- Trained dealer technicians have access to tools and equipment to inspect the brakes and recommend quality parts engineered for the vehicle.

Fluids

Proper fluid levels and approved fluids protect the vehicle's systems and components. See *Recommended Fluids and Lubricants on page 11-13* for GM approved fluids.

- Engine oil and windshield washer fluid levels should be checked at every fuel fill.
- Instrument cluster lights may come on to indicate that fluids may be low and need to be filled.

Hoses

Hoses transport fluids and should be regularly inspected to ensure that there are no cracks or leaks. With a multi-point inspection, your dealer can inspect the hoses and advise if replacement is needed.

Lamps

Properly working headlamps, taillamps, and brake lamps are important to see and be seen on the road.

- Signs that the headlamps need attention include dimming, failure to light, cracking, or damage. The brake lamps need to be checked periodically to ensure that they light when braking.
- With a multi-point inspection, your dealer can check the lamps and note any concerns.

Shocks and Struts

Shocks and struts help aid in control for a smoother ride.

- Signs of wear may include steering wheel vibration, bounce/sway while braking, longer stopping distance, or uneven tire wear.
- As part of the multi-point inspection, trained dealer technicians can visually inspect the shocks and struts for signs of leaking, blown seals, or damage, and can advise when service is needed.

Tires

Tires need to be properly inflated, rotated, and balanced. Maintaining the tires can save money, fuel, and can reduce the risk of tire failure.

- Signs that the tires need to be replaced include three or more visible treadwear indicators; cord or fabric showing through the rubber; cracks or cuts in the tread or sidewall; or a bulge or split in the tire.
- Trained dealer technicians can inspect and recommend the right tires. Your dealer can also provide tire/wheel balancing services to ensure smooth vehicle operation at all speeds. Your dealer sells and services name brand tires.

Vehicle Care

To help keep the vehicle looking like new, vehicle care products are available from your dealer. For information on how to clean and protect the vehicle's interior and exterior, see *Interior Care on page 10-79* and *Exterior Care on page 10-76*.

Wheel Alignment

Wheel alignment is critical for ensuring that the tires deliver optimal wear and performance.

- Signs that the alignment may need to be adjusted include pulling, improper vehicle handling, or unusual tire wear.
- Your dealer has the required equipment to ensure proper wheel alignment.

Windshield

For safety, appearance, and the best viewing, keep the windshield clean and clear.

- Signs of damage include scratches, cracks, and chips.
- Trained dealer technicians can inspect the windshield and recommend proper replacement if needed.

Wiper Blades

Wiper blades need to be cleaned and kept in good condition to provide a clear view.

- Signs of wear include streaking, skipping across the windshield, and worn or split rubber.
- Trained dealer technicians can check the wiper blades and replace them when needed.

Recommended Fluids, Lubricants, and Parts

Recommended Fluids and Lubricants

Usage	Fluid/Lubricant
Engine Oil	Use only engine oil licensed to the dexos1 specfication, or equivalent, of the proper SAE viscosity grade. ACDelco dexos1 Synthetic Blend is recommended. See *Engine Oil on page 10-6*.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL Coolant. See *Engine Coolant on page 10-12*.
Hydraulic Brake System	DOT 3 Hydraulic Brake Fluid (GM Part No. 88863461, in Canada 88863462).
Hydraulic Power Steering System	DEXRON®-VI Automatic Transmission Fluid.
Windshield Washer	Automotive windshield washer fluid that meets regional freeze protection requirements.
Automatic Transmission	DEXRON®-VI Automatic Transmission Fluid.
Chassis Lubrication	Chassis Lubricant (GM Part No. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474).
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor, and Release Pawl	Lubriplate Lubricant Aerosol (GM Part No. 89021668, in Canada 89021674) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hood and Door Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474).
Weatherstrip Conditioning	Weatherstrip Lubricant (GM Part No. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. 12345579, in Canada 10953481).

Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

Part	GM Part Number	ACDelco Part Number
Engine Air Cleaner/Filter	22753242	A3176C
Engine Oil Filter	89017525	PF63
Passenger Compartment Air Filter	22743911	CF183
Spark Plugs	12622561	41-109
Wiper Blades		
Driver Side – 65 cm (25.6 in)	25892079	—
Passenger Side – 45 cm (17.7 in)	25882578	—

Maintenance Records

After the scheduled services are performed, record the date, odometer reading, who performed the service, and the type of services performed in the boxes provided. Retain all maintenance receipts.

Date	Odometer Reading	Serviced By	Maintenance Stamp	Services Performed

Date	Odometer Reading	Serviced By	Maintenance Stamp	Services Performed

Technical Data

Vehicle Identification
Vehicle Identification Number (VIN) 12-1
Service Parts Identification Label 12-1

Vehicle Data
Capacities and Specifications 12-2
Engine Drive Belt Routing . . . 12-3

Vehicle Identification

Vehicle Identification Number (VIN)

This legal identifier is in the front corner of the instrument panel, on the left side of the vehicle. It can be seen through the windshield from outside. The VIN also appears on the Vehicle Certification and Service Parts labels and certificates of title and registration.

Engine Identification

The eighth character in the VIN is the engine code. This code identifies the vehicle's engine, specifications, and replacement parts. See “Engine Specifications” under *Capacities and Specifications on page 12-2* for the vehicle's engine code.

Service Parts Identification Label

This label, on the load floor under the spare tire cover in the trunk, has the following information:

- Vehicle Identification Number (VIN).
- Model designation.
- Paint information.
- Production options and special equipment.

Do not remove this label from the vehicle.

Vehicle Data

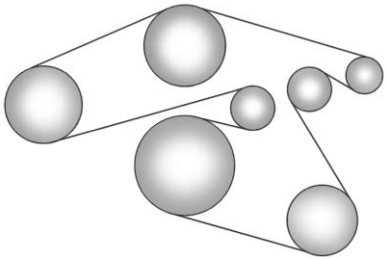
Capacities and Specifications

Application	Capacities	
	Metric	English
Air Conditioning Refrigerant	For the air conditioning system refrigerant type and charge amount, see the refrigerant label under the hood. See your dealer for more information.	
Engine Cooling System	7.1 L	7.5 qt
Engine Oil with Filter	5.7 L	6.0 qt
Fuel Tank		
Front-Wheel Drive	70.0 L	18.5 gal
All-Wheel Drive	74.0 L	19.5 gal
Wheel Nut Torque	150 N•m	110 lb ft
All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling.		

Engine Specifications

Engine	VIN Code
3.6L V6 Engine	3

Engine Drive Belt Routing



✍ NOTES

Customer Information

Customer Information
Customer Satisfaction Procedure 13-1
Customer Assistance Offices 13-3
Customer Assistance for Text Telephone (TTY) Users 13-4
Online Owner Center 13-4
GM Mobility Reimbursement Program (U.S. and Canada) 13-5
Roadside Service 13-5
Scheduling Service Appointments 13-7
Courtesy Transportation Program 13-8
Collision Damage Repair 13-9
Service Publications Ordering Information 13-11

Reporting Safety Defects
Reporting Safety Defects to the United States Government 13-12
Reporting Safety Defects to the Canadian Government 13-13
Reporting Safety Defects to General Motors 13-13

Vehicle Data Recording and Privacy
Vehicle Data Recording and Privacy 13-14
Event Data Recorders 13-14
OnStar® 13-15
Infotainment System 13-15
Radio Frequency Identification (RFID) 13-15
Radio Frequency Statement 13-15

Customer Information

Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and to Cadillac. Normally, any concerns with the sales transaction or the operation of the vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your concern has not been resolved to your satisfaction, the following steps should be taken:

STEP ONE: Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service or parts manager, contact the owner of your dealership or the general manager.

STEP TWO: If after contacting a member of dealership management, it appears your concern cannot be resolved by your dealership without further help, in the U.S., call the Cadillac Customer Assistance Center at 1-800-458-8006. In Canada, call the Canadian Cadillac Customer Care Centre at 1-888-446-2000.

We encourage you to call the toll-free number in order to give your inquiry prompt attention. Have the following information available to give the Customer Assistance representative:

- Vehicle Identification Number (VIN). This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.
- Dealership name and location.
- Vehicle delivery date and present mileage.

When contacting Cadillac, remember that your concern will likely be resolved at a dealer's facility. That is why we suggest following Step One first.

STEP THREE — U.S. Owners: Both General Motors and your dealer are committed to making sure you are completely satisfied with the new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you can file with the Better Business Bureau (BBB) Auto Line® Program to enforce your rights.

The BBB Auto Line Program is an out-of-court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program
Council of Better Business Bureaus, Inc.
4200 Wilson Boulevard
Suite 800
Arlington, VA 22203-1838

Telephone: 1-800-955-5100
www.dr.bbb.org/goauto

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage, and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.

STEP THREE — Canadian Owners: In the event that you do not feel your concerns have been addressed after following the procedure outlined in Steps One and Two, General Motors of Canada Limited wants you to be aware of its participation in a no-charge mediation/arbitration program. General Motors of Canada Limited has committed to binding arbitration of owner disputes involving factory-related vehicle service claims. The program provides for the review of the facts involved by an impartial third party arbiter, and may include an informal hearing before the arbiter. The program is designed so that the entire dispute settlement process, from the time you file your complaint to the final decision, should be completed in approximately 70 days. We believe our impartial program offers advantages over courts in most jurisdictions because it is informal, quick, and free of charge.

For further information concerning eligibility in the Canadian Motor Vehicle Arbitration Plan (CAMVAP), call toll-free 1-800-207-0685, or call the General Motors Customer Care Centre, 1-800-263-3777 (English), 1-800-263-7854 (French), or write to:

Mediation/Arbitration Program
c/o Customer Care Centre
General Motors of Canada Limited
Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

The inquiry should be accompanied by the Vehicle Identification Number (VIN).

Customer Assistance Offices

Cadillac encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail Cadillac, the letter should be addressed to:

United States and Puerto Rico

Cadillac Customer Assistance Center
Cadillac Motor Car Division
P.O. Box 33169
Detroit, MI 48232-5169
www.Cadillac.com

1-800-458-8006
1-800-833-2622 (For Text Telephone devices (TTYs))
Roadside Service: 1-800-882-1112

From U.S. Virgin Islands:

1-800-496-9994

Canada

General Motors of Canada Limited
Canadian Cadillac Customer Care Centre, Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7
www.gm.ca

1-888-446-2000
1-800-263-3830 (For Text Telephone devices (TTYs))
Roadside Service: 1-800-882-1112

Overseas

Please contact the local General Motors Business Unit.

Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), Cadillac has TTY equipment available at its Customer Assistance Center. Any TTY user can communicate with Cadillac by dialing: 1-800-833-2622. TTY users in Canada can dial 1-800-263-3830.

Online Owner Center

Online Owner Experience (U.S.) my.cadillac.com

The Cadillac online owner experience is a one-stop resource that allows interaction with Cadillac and keeps important vehicle-specific information in one place.

Membership Benefits

(Vehicle Information): Download owner manuals and view vehicle-specific how-to videos.

(Maintenance Information): View maintenance schedules, required alerts, OnStar onboard vehicle diagnostic information, and schedule service appointments.

(Service History): View printable dealer-recorded service records and self-recorded service records.

(Preferred Dealer Information): Select a preferred dealer and view dealer location, maps, phone numbers, and hours.

(Warranty Tracking Information): Track the vehicle's warranty information.

(Recall Information): View active recalls or search by Vehicle Identification Number (VIN). See *Vehicle Identification Number (VIN) on page 12-1*.

(Other Account Information): View GM Card, SiriusXM Satellite radio, and OnStar account information.

(Live Chat Support): Chat live with online help representatives.

Visit my.cadillac.com to register your vehicle.

Cadillac Owner Centre (Canada) cadillacowner.ca

Take a trip to the Cadillac Owner Centre:

- Chat live with online help representatives.
- Use the Vehicle Tools section.
- Access third party enthusiast sites and social media networks.
- Locate owner resources such as lease-end, financing, and warranty information.
- Retrieve favorite articles, quizzes, tips, and multimedia galleries organized into the Features and Auto Care Sections.
- Download owner manuals.
- Find Cadillac-recommended maintenance services.

GM Mobility Reimbursement Program (U.S. and Canada)

This program is available to qualified applicants for cost reimbursement of eligible aftermarket adaptive equipment required for the vehicle, such as hand controls or a wheelchair/scooter lift for the vehicle.

For more information on the limited offer, visit www.gmmobility.com or call the GM Mobility Assistance Center at 1-800-323-9935. Text Telephone (TTY) users, call 1-800-833-9935.

General Motors of Canada also has a Mobility Program. Call 1-800-GM-DRIVE (463-7483) for details. TTY users call 1-800-263-3830.

Roadside Service

U.S.: 1-800-224-1400.

Canada: 1-800-882-1112.

Text Telephone (TTY) Users (U.S. Only): 1-888-889-2438.

Service is available 24 hours a day, 365 days a year.

Calling for Service

When calling Roadside Service, have the following information ready:

- Your name, home address, and home telephone number.
- Telephone number of your location.
- Location of the vehicle.
- Model, year, color, and license plate number of the vehicle.

- Odometer reading, Vehicle Identification Number (VIN), and delivery date of the vehicle.
- Description of the problem.

Coverage

Services are provided up to 6 years/ 110 000 km (70,000 mi), whichever comes first.

In the U.S., anyone driving the vehicle is covered. In Canada, a person driving the vehicle without permission from the owner is not covered.

Roadside Service is not a part of the New Vehicle Limited Warranty. Cadillac and General Motors of Canada Limited reserve the right to make any changes or discontinue the Roadside Service program at any time without notification.

Cadillac and General Motors of Canada Limited reserve the right to limit services or payment to an owner or driver if they decide the claims are made too often, or the same type of claim is made many times.

Cadillac Owner Privileges™

- **Emergency Fuel Delivery:** Delivery of enough fuel for the vehicle to get to the nearest service station.
- **Lock-Out Service:** Service to unlock the vehicle if you are locked out. A remote unlock may be available if you have OnStar. For security reasons, the driver must present identification before this service is given.
- **Emergency Tow from a Public Road or Highway:** Tow to the nearest Cadillac dealer for warranty service, or if the vehicle was in a crash and cannot be driven. Assistance is also given when the vehicle is stuck in the sand, mud, or snow.
- **Flat Tire Change:** Service to change a flat tire with a spare tire. The spare tire, if equipped, must be in good condition and properly inflated. It is your responsibility for the repair or replacement of the tire if it is not covered by the warranty.
- **Battery Jump Start:** Service to jump start a dead battery.
- **Trip Interruption Benefits and Service:** If your trip is interrupted due to a warranty failure, incidental expenses may be reimbursed during the 6 years/110 000 km (70,000 mi) Powertrain warranty period. Items considered are hotel, meals, and rental car.

Cadillac Technician Roadside Service (U.S. Only)

Cadillac's exceptional Roadside Service is more than an auto club or towing service. It provides every Cadillac owner in the United States with the advantage of contacting a Cadillac advisor and, where available, a Cadillac trained dealer technician who can provide on-site service.

A dealer technician will travel to your location within a 30-mile radius of a participating Cadillac dealership. If beyond this radius, we will arrange to have your car towed to the nearest Cadillac dealership. Each technician travels with a specially equipped service vehicle complete with the necessary Cadillac parts and tools required to handle most roadside repairs.

Services Not Included in Roadside Service

- Impound towing caused by violation of any laws.
- Legal fines.
- Mounting, dismounting, or changing of snow tires, chains, or other traction devices.
- Towing or services for vehicles driven on a non-public road or highway.

Services Specific to Canadian-Purchased Vehicles

- **Fuel delivery:** Reimbursement is approximately $5 Canadian. Diesel fuel delivery may be restricted. Propane and other fuels are not provided through this service.
- **Lock-Out Service:** Vehicle registration is required.
- **Trip Interruption Benefits and Service:** Pre-authorization, original detailed receipts, and a copy of the repair orders are required. Once authorization has been received, the Roadside Service advisor will help you make arrangements and explain how to receive payment.
- **Alternative Service:** If assistance cannot be provided right away, the Roadside Service advisor may give you permission to get local emergency road service. You will receive payment, up to $100, after sending the original receipt to Roadside Service. Mechanical failures may be covered, however any cost for parts and labor for repairs not covered by the warranty are the owner responsibility.

Scheduling Service Appointments

When the vehicle requires warranty service, contact your dealer and request an appointment. By scheduling a service appointment and advising the service consultant of your transportation needs, your dealer can help minimize your inconvenience.

If the vehicle cannot be scheduled into the service department immediately, keep driving it until it can be scheduled for service, unless, of course, the problem is safety related. If it is, please call your dealership, let them know this, and ask for instructions.

If your dealer requests you to bring the vehicle for service, you are urged to do so as early in the work day as possible to allow for same-day repair.

Courtesy Transportation Program

To enhance your ownership experience, we and our participating dealers are proud to offer Courtesy Transportation, a customer support program for vehicles with the Bumper-to-Bumper (Base Warranty Coverage period in Canada), extended powertrain, and/or hybrid-specific warranties in both the U.S. and Canada.

Several Courtesy Transportation options are available to assist in reducing inconvenience when warranty repairs are required.

Courtesy Transportation is not a part of the New Vehicle Limited Warranty. A separate booklet entitled “Limited Warranty and Owner Assistance Information” furnished with each new vehicle provides detailed warranty coverage information.

Transportation Options

Warranty service can generally be completed while you wait. However, if you are unable to wait, GM helps to minimize inconvenience by providing several transportation options. Depending on the circumstances, your dealer can offer one of the following:

Shuttle Service

Shuttle service is the preferred means of offering Courtesy Transportation. Dealers may provide shuttle service to get you to your destination with minimal interruption of your daily schedule. This includes one-way or round-trip shuttle service within reasonable time and distance parameters of your dealer's area.

Public Transportation or Fuel Reimbursement

If the vehicle requires overnight warranty repairs, and public transportation is used instead of your dealer's shuttle service, the expense must be supported by original receipts and can only be up to the maximum amount allowed by GM for shuttle service. In addition, for U.S. customers, should you arrange transportation through a friend or relative, limited reimbursement for reasonable fuel expenses may be available. Claim amounts should reflect actual costs and be supported by original receipts. See your dealer for information regarding the allowance amounts for reimbursement of fuel or other transportation costs.

Courtesy Rental Vehicle

Your dealer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle that you obtain if the vehicle is kept for an overnight warranty repair.

Rental reimbursement will be limited and must be supported by original receipts. This requires that you sign and complete a rental agreement and meet state/provincial, local, and rental vehicle provider requirements. Requirements vary and may include minimum age requirements, insurance coverage, credit card, etc. You are responsible for fuel usage charges and may also be responsible for taxes, levies, usage fees, excessive mileage, or rental usage beyond the completion of the repair.

It may not be possible to provide a like vehicle as a courtesy rental.

Additional Program Information

All program options, such as shuttle service, may not be available at every dealer. Please contact your dealer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer personnel.

General Motors reserves the right to unilaterally modify, change, or discontinue Courtesy Transportation at any time and to resolve all questions of claim eligibility pursuant to the terms and conditions described herein at its sole discretion.

Collision Damage Repair

If the vehicle is involved in a collision and it is damaged, have the damage repaired by a qualified technician using the proper equipment and quality replacement parts. Poorly performed collision repairs diminish the vehicle resale value, and safety performance can be compromised in subsequent collisions.

Collision Parts

Genuine GM Collision parts are new parts made with the same materials and construction methods as the parts with which the vehicle was originally built. Genuine GM Collision parts are the best choice to ensure that the vehicle's designed appearance, durability, and safety are preserved. The use of Genuine GM parts can help maintain the GM New Vehicle Limited Warranty.

Recycled original equipment parts may also be used for repair. These parts are typically removed from vehicles that were total losses in prior crashes. In most cases, the parts being recycled are from undamaged sections of the vehicle. A recycled original equipment GM part may be an acceptable choice to maintain the vehicle's originally designed appearance and safety performance; however, the history of these parts is not known. Such parts are not covered by the GM New Vehicle Limited Warranty, and any related failures are not covered by that warranty.

Aftermarket collision parts are also available. These are made by companies other than GM and may not have been tested for the vehicle. As a result, these parts may fit poorly, exhibit premature durability/

corrosion problems, and may not perform properly in subsequent collisions. Aftermarket parts are not covered by the GM New Vehicle Limited Warranty, and any vehicle failure related to such parts is not covered by that warranty.

Repair Facility

GM also recommends that you choose a collision repair facility that meets your needs before you ever need collision repairs. Your dealer may have a collision repair center with GM-trained technicians and state-of-the-art equipment, or be able to recommend a collision repair center that has GM-trained technicians and comparable equipment.

Insuring the Vehicle

Protect your investment in the GM vehicle with comprehensive and collision insurance coverage. There are significant differences in the quality of coverage afforded by various insurance policy terms. Many insurance policies provide reduced protection to the GM vehicle by limiting compensation for damage repairs by using aftermarket collision parts. Some insurance companies will not specify aftermarket collision parts. When purchasing insurance, we recommend that you ensure that the vehicle will be repaired with GM original equipment collision parts. If such insurance coverage is not available from your current insurance carrier, consider switching to another insurance carrier.

If the vehicle is leased, the leasing company may require you to have insurance that ensures repairs with Genuine GM Original Equipment Manufacturer (OEM) parts or Genuine Manufacturer replacement parts. Read the lease carefully, as you may be charged at the end of the lease for poor quality repairs.

If a Crash Occurs

If there has been an injury, call emergency services for help. Do not leave the scene of a crash until all matters have been taken care of. Move the vehicle only if its position puts you in danger, or you are instructed to move it by a police officer.

Give only the necessary information to police and other parties involved in the crash.

For emergency towing see *Roadside Service on page 13-5*.

Gather the following information:

- Driver name, address, and telephone number.
- Driver license number.
- Owner name, address, and telephone number.
- Vehicle license plate number.
- Vehicle make, model, and model year.

- Vehicle Identification Number (VIN).
- Insurance company and policy number.
- General description of the damage to the other vehicle.

Choose a reputable repair facility that uses quality replacement parts. See “Collision Parts” earlier in this section.

If the airbag has inflated, see *What Will You See after an Airbag Inflates? on page 3-28*.

Managing the Vehicle Damage Repair Process

In the event that the vehicle requires damage repairs, GM recommends that you take an active role in its repair. If you have a pre-determined repair facility of choice, take the vehicle there, or have it towed there. Specify to the facility that any required replacement collision parts be original equipment parts, either new Genuine GM parts or recycled original GM parts. Remember, recycled parts will not be covered by the GM vehicle warranty.

Insurance pays the bill for the repair, but you must live with the repair. Depending on your policy limits, your insurance company may initially value the repair using aftermarket parts. Discuss this with the repair professional, and insist on Genuine GM parts. Remember, if the vehicle is leased, you may be obligated to have the vehicle repaired with Genuine GM parts, even if your insurance coverage does not pay the full cost.

If another party's insurance company is paying for the repairs, you are not obligated to accept a repair valuation based on that insurance company's collision policy repair limits, as you have no contractual limits with that company. In such cases, you can have control of the repair and parts choices as long as the cost stays within reasonable limits.

Service Publications Ordering Information

Service Manuals

Service Manuals have the diagnosis and repair information on the engines, transmission, axle, suspension, brakes, electrical, steering, body, etc.

Service Bulletins

Service Bulletins give additional technical service information needed to knowledgeably service General Motors cars and trucks. Each bulletin contains instructions to assist in the diagnosis and service of the vehicle.

Owner Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The Owner Manual includes the Maintenance Schedule for all models.

In-Portfolio: Includes a Portfolio, Owner Manual, and Warranty Booklet.

RETAIL SELL PRICE: $35.00 (U.S.) plus handling and shipping fees.

Without Portfolio: Owner Manual only.

RETAIL SELL PRICE: $25.00 (U.S.) plus handling and shipping fees.

Current and Past Models

Technical Service Bulletins and Manuals are available for current and past model GM vehicles.

ORDER TOLL FREE:
1-800-551-4123 Monday – Friday 8:00 AM – 6:00 PM Eastern Time

For Credit Card Orders Only (VISA-MasterCard-Discover), visit Helm, Inc. at: www.helminc.com.

Or write to:

Helm, Incorporated
Attention: Customer Service
47911 Halyard Drive
Plymouth, MI 48170

Prices are subject to change without notice and without incurring obligation. Allow ample time for delivery.

All listed prices are quoted in U.S. funds. Make checks payable in U.S. funds.

Reporting Safety Defects

Reporting Safety Defects to the United States Government

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or General Motors.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to *http://www.safercar.gov;* or write to:

Administrator, NHTSA
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from *http://www.safercar.gov*.

Reporting Safety Defects to the Canadian Government

If you live in Canada, and you believe that the vehicle has a safety defect, notify Transport Canada immediately, and notify General Motors of Canada Limited. Call Transport Canada at 1-800-333-0510 or write to:

Transport Canada
Road Safety Branch
80 rue Noel
Gatineau, QC J8Z 0A1

Reporting Safety Defects to General Motors

In addition to notifying NHTSA (or Transport Canada) in a situation like this, notify General Motors.

Call 1-800-458-8006, or write:

Cadillac Customer Assistance Center
Cadillac Motor Car Division
P.O. Box 33169
Detroit, MI 48232-5169

In Canada, call 1-888-446-2000, or write:

Canadian Cadillac Customer Care Centre, Mail Code: CA1-163-005
General Motors of Canada Limited
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

Vehicle Data Recording and Privacy

The vehicle has a number of computers that record information about the vehicle's performance and how it is driven. For example, the vehicle uses computer modules to monitor and control engine and transmission performance, to monitor the conditions for airbag deployment and deploy them in a crash, and, if equipped, to provide antilock braking to help the driver control the vehicle. These modules may store data to help the dealer technician service the vehicle. Some modules may also store data about how the vehicle is operated, such as rate of fuel consumption or average speed. These modules may retain personal preferences, such as radio presets, seat positions, and temperature settings.

Event Data Recorders

This vehicle is equipped with an event data recorder (EDR). The main purpose of an EDR is to record, in certain crash or near crash-like situations, such as an air bag deployment or hitting a road obstacle, data that will assist in understanding how a vehicle's systems performed. The EDR is designed to record data related to vehicle dynamics and safety systems for a short period of time, typically 30 seconds or less. The EDR in this vehicle is designed to record such data as:

- How various systems in your vehicle were operating;
- Whether or not the driver and passenger safety belts were buckled/fastened;
- How far (if at all) the driver was depressing the accelerator and/or brake pedal; and,
- How fast the vehicle was traveling.

These data can help provide a better understanding of the circumstances in which crashes and injuries occur. NOTE: EDR data are recorded by your vehicle only if a non-trivial crash situation occurs; no data are recorded by the EDR under normal driving conditions and no personal data (e.g., name, gender, age, and crash location) are recorded. However, other parties, such as law enforcement, could combine the EDR data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have the special equipment, can read the information if they have access to the vehicle or the EDR.

GM will not access this data or share it with others except: with the consent of the vehicle owner or,

if the vehicle is leased, with the consent of the lessee; in response to an official request by police or similar government office; as part of GM's defense of litigation through the discovery process; or, as required by law. Data that GM collects or receives may also be used for GM research needs or may be made available to others for research purposes, where a need is shown and the data is not tied to a specific vehicle or vehicle owner.

OnStar®

If the vehicle is equipped with OnStar® and has an active subscription, additional data may be collected through the OnStar system. This includes information about the vehicle's operation; about collisions involving the vehicle; the use of the vehicle and its features; and, in certain situations, the location and approximate GPS speed of the vehicle. Refer to the OnStar Terms and Conditions and Privacy Statement on the OnStar website.

Infotainment System

If the vehicle is equipped with a navigation system as part of the infotainment system, use of the system may result in the storage of destinations, addresses, telephone numbers, and other trip information. See the infotainment manual for information on stored data and for deletion instructions.

Radio Frequency Identification (RFID)

RFID technology is used in some vehicles for functions such as tire pressure monitoring and ignition system security, as well as in connection with conveniences such as Remote Keyless Entry (RKE) transmitters for remote door locking/unlocking and starting, and in-vehicle transmitters for garage door openers. RFID technology in GM vehicles does not use or record personal information or link with any other GM system containing personal information.

Radio Frequency Statement

This vehicle has systems that operate on a radio frequency that comply with Part 15 of the Federal Communications Commission (FCC) rules and with Industry Canada Standards RSS-GEN/210/220/310.

Operation is subject to the following two conditions:

1. The device may not cause harmful interference.
2. The device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to any of these systems by other than an authorized service facility could void authorization to use this equipment.

✍ NOTES

OnStar

OnStar Overview
OnStar Overview 14-1

OnStar Services
Emergency 14-2
Security 14-2
Navigation 14-2
Connections 14-4
Diagnostics 14-5

OnStar Additional Information
OnStar Additional Information 14-5

OnStar Overview

If equipped, this vehicle has a comprehensive, in-vehicle system that can connect to a live Advisor for Emergency, Security, Navigation, Connection, and Diagnostic Services.

The OnStar system status light is next to the OnStar buttons. If the status light is:

- Solid Green: System is ready.
- Flashing Green: On a call.
- Red: Indicates a problem.

Push or call 1-888-4ONSTAR (1-888-466-7827) to speak to an Advisor.

Push to:

- Make a call, end a call, or answer an incoming call.
- Give OnStar Hands-Free Calling voice commands.
- Give OnStar Turn-by-Turn Navigation voice commands. Requires the available Directions and Connections service plan.

Push to connect to a live Advisor to:

- Verify account information or update contact information.
- Get driving directions. Requires the available Directions and Connections service plan.
- Receive On-Demand Diagnostics for a check of the vehicle's key operating systems.
- Receive Roadside Assistance.

Push the OnStar Emergency button to get a priority connection to an Emergency Advisor available 24/7 to:

- Get help for an emergency.
- Be a Good Samaritan or respond to an AMBER Alert.
- Get crisis assistance and evacuation routes.

OnStar Services

Emergency

With Automatic Crash Response, the built-in system can automatically connect to help in most crashes, even if help cannot be requested.

Push SOS to connect to an Emergency Advisor. GPS technology is used to identify the vehicle location and can provide critical information to emergency personnel. The Advisor is also trained to offer critical assistance in emergency situations before first responders arrive.

Security

OnStar provides services like Stolen Vehicle Assistance, Remote Ignition Block, and Roadside Assistance, if the vehicle is equipped with these services. OnStar can unlock the vehicle doors remotely, if it is equipped with automatic door locks, and can help police locate the vehicle if it is stolen.

Navigation

OnStar navigation requires the Directions and Connections service plan.

Push OnStar to receive directions or have them sent to the vehicle navigation screen, if equipped. Destinations can also be forwarded to the vehicle from MapQuest.com. The OnStar mapping database is continuously updated. Visit www.onstar.com for coverage maps.

Turn-by-Turn Navigation

1. Push OnStar to connect to a live Advisor.
2. Request directions.
3. Directions are downloaded to the vehicle.
4. Follow the voice-guided commands.

Using Voice Commands During a Planned Route

Cancel Route

1. Push . System responds: “OnStar ready,” then a tone. Say “Cancel route.” System responds: “Do you want to cancel directions?”
2. Say “Yes.” System responds: “OK, request completed, thank you, goodbye.”

Route Preview

1. Push . System responds: “OnStar ready,” then a tone.
2. Say “Route preview.” System responds with the next three maneuvers.
3. Say “Goodbye.” Exits voice commands.

Repeat

1. Push . System responds: “OnStar ready,” then a tone.
2. Say “Repeat.” System responds with the last direction given, then responds with “OnStar ready,” then a tone.
3. Say “Goodbye.” Exits voice commands.

Get My Destination

1. Push . System responds: “OnStar ready,” then a tone.
2. Say “Get my destination.” System responds with address and the distance to the destination, then responds with “OnStar ready,” then a tone.
3. Say “Goodbye.” Exits voice commands.

Other Navigation Services Available from OnStar

OnStar eNav: Allows subscribers to send destinations from MapQuest.com to their Turn-by-Turn Navigation or screen-based navigation system. When ready, the directions will be downloaded to the vehicle.

Destination Download: Push , then request the Advisor to download directions to the navigation system in the vehicle. After the call ends, push the “Go” button on the navigation screen to begin driving directions.

Destinations can also be downloaded on the go. For information about eNav, Destination Download, and coverage maps visit www.onstar.com.

Connections

OnStar Hands-Free Calling allows calls to be made and received from the vehicle. The vehicle can also be controlled from a cell phone through the OnStar RemoteLink mobile app. See www.onstar.com for coverage maps.

Hands-Free Calling

1. Push . System responds: “OnStar ready.”
2. Say “Call.” System responds: “Please say the name or number to call.”
3. Say the entire number without pausing, including a “1” and the area code. System responds: “OK calling.”

Calling 911 Emergency

1. Press . The system responds “OnStar Ready,” followed by a tone.
2. Say “Call.” The system responds “Please say the name or number to call.”
3. Say “911” without pausing. The system responds “911.”
4. Say “Call.” The system responds “OK, dialing 911.”

Retrieve My Number

1. Push . System responds: “OnStar ready.”
2. Say “My number.” System responds: “Your OnStar Hands-Free Calling number is.”

End a Call

Push . System responds: “Call ended.”

Store a Name Tag for Speed Dialing

1. Push . System responds: “OnStar ready.”
2. Say “Store.” System responds: “Please say the number you would like to store.”
3. Say the entire number without pausing. System responds: “Please say the name tag.”
4. Pick a name tag. System responds: “About to store <name tag>. Does that sound OK?”
5. Say “Yes” or say “No” to try again. System responds: “OK, storing <name tag>.”

Place a Call Using a Stored Number

1. Push . System responds: “OnStar ready.”
2. Say “Call <name tag>.” System responds: “OK, calling <name tag>.”

Verify Minutes and Expiration

Push and say “Minutes” then “Verify” to check how many minutes remain and their expiration date.

OnStar Mobile App

Download the OnStar RemoteLink mobile app to your iPhone, Android, or BlackBerry smartphone to check vehicle fuel level, oil life, or tire pressure; to start the vehicle (if equipped) or unlock it; or to connect to an OnStar Advisor. For OnStar RemoteLink information and compatibility, see www.onstar.com.

Diagnostics

OnStar Vehicle Diagnostics will perform a vehicle check every month. It will check the engine, transmission, antilock brakes, and major vehicle systems. It also checks the tire pressures, if the vehicle is equipped with the Tire Pressure Monitoring System. If a diagnostics check is needed between e-mails, push , and an Advisor can run a check.

OnStar Additional Information

Transferring Service

Push to request account transfer eligibility information. The Advisor can assist in canceling or removing account information. If OnStar receives information that vehicle ownership has changed, OnStar may send a voice message to the vehicle, requesting updated account information.

Reactivation for Subsequent Owners

Push and follow the prompts to speak to an Advisor as soon as possible after acquiring the vehicle. The Advisor will update vehicle records and will explain the OnStar service offers and options available.

How OnStar Service Works

Automatic Crash Response, Emergency Services, Crisis Assist, Stolen Vehicle Assistance, Vehicle Diagnostics, Remote Door Unlock, Roadside Assistance, Turn-by-Turn Navigation, and Hands-Free Calling are available on most vehicles. Not all OnStar services are available everywhere or on all vehicles. For more information, a full description of OnStar services, system limitations, and OnStar terms and conditions, see www.onstar.com (U.S.) or www.onstar.ca (Canada); contact OnStar at 1-888-4ONSTAR (1-888-466-7827) or TTY 1-877-248-2080; or push to speak with an Advisor. OnStar services require a vehicle electrical system, wireless service, and GPS satellite technologies to be available and operating for features to function properly. These systems may not operate if the battery is discharged or disconnected.

OnStar service cannot work unless your vehicle is in a place where OnStar has an agreement with a wireless service provider for service in that area, and the wireless service provider has coverage,

network capacity, reception, and technology compatible with OnStar service. Service involving location information about the vehicle cannot work unless GPS signals are available, unobstructed, and compatible with the OnStar hardware. OnStar service may not work if the OnStar equipment is not properly installed or it has not been properly maintained. If equipment or software is added, connected, or modified, OnStar service may not work. Other problems beyond the control of OnStar may prevent service such as hills, tall buildings, tunnels, weather, electrical system design and architecture of the vehicle, damage to the vehicle in a crash, or wireless phone network congestion or jamming.

See *Radio Frequency Statement on page 13-15* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

Services for People with Disabilities

Advisors provide services to help subscribers with physical disabilities and medical conditions.

Push for help with:

- Locating a gas station with an attendant to pump gas.
- Finding a hotel, restaurant, etc., that meets accessibility needs.
- Providing directions to the closest hospital or pharmacy in urgent situations.

TTY Users

OnStar has the ability to communicate to the deaf, hard-of-hearing, or speech-impaired customers while in the vehicle. The available dealer-installed TTY system can provide in-vehicle access to all of the OnStar services, except Virtual Advisor and OnStar Turn-by-Turn Navigation.

OnStar.com

The website provides access to account information, manages the OnStar subscription, and allows viewing of videos of each service. Get subscription plan pricing and sign up for OnStar Vehicle Diagnostics. Click on the “My Account” tab on the home page.

OnStar Personal Identification Number (PIN)

A PIN is needed to access some of the OnStar services, like Remote Door Unlock and Stolen Vehicle Assistance. You will be prompted to change the PIN the first time when speaking with an Advisor. To change the OnStar PIN, call OnStar and provide the Advisor with the current number.

Warranty

OnStar equipment may be warranted as part of the New Vehicle Limited Warranty. The

manufacturer of the vehicle furnishes detailed warranty information.

Languages

The vehicle can be programmed to respond in French or Spanish. Push and ask an Advisor. Advisors can speak French or Spanish.

Potential Issues

Some OnStar services are disabled after five days. OnStar cannot perform Remote Door Unlock or Stolen Vehicle Assistance after the vehicle has been off continuously for five days. After five days, OnStar can contact Roadside Assistance and a locksmith to help gain access to the vehicle.

Global Positioning System (GPS)

- Obstruction of the GPS can occur in a large city with tall buildings; in parking garages; around airports; in tunnels, underpasses, or parking garages; or in an area with very dense trees. If GPS signals are not available, the OnStar system should still operate to call OnStar. However, OnStar could have difficulty identifying the exact location.
- In emergency situations, OnStar can use the last stored GPS location to send to emergency responders.
- A temporary loss of GPS can cause loss of the ability to send a Turn-by-Turn Navigation route. The Advisor may give a verbal route or may ask for a call back after the vehicle is driven into an open area.

Cellular and GPS Antennas

Avoid placing items over or near the antenna to prevent blocking cellular and GPS signal reception. Cellular reception is required for OnStar to send remote signals to the vehicle.

Unable to Connect to OnStar Message

If there is limited cellular coverage or the cellular network has reached maximum capacity, this message may come on. Push to try the call again or try again after driving a few miles into another cellular area.

Vehicle and Power Issues

OnStar services require a vehicle electrical system, wireless service, and GPS satellite technologies to be available and operating for features to function properly. These systems may not operate if the battery is discharged or disconnected.

Add-on Electrical Equipment

The OnStar system is integrated into the electrical architecture of the vehicle. Do not add any electrical equipment. See *Add-On Electrical Equipment on page 9-64*. Added electrical equipment may interfere with the operation of the OnStar system and cause it to not operate.

Privacy

The complete OnStar Privacy Statement may be found at www.onstar.com. Privacy-sensitive users of wireless communications are cautioned that the privacy of any information sent via wireless cellular communications cannot be assured. Third parties may unlawfully intercept or access transmissions and private communications without consent.

OnStar - libcurl and unzip acknowledgments

Certain OnStar components include libcurl and unzip software. Below are the notices and licenses associated with this software:

libcurl:

COPYRIGHT AND PERMISSION NOTICE

Copyright (c) 1996 - 2010, Daniel Stenberg, <daniel@haxx.se>.

All rights reserved.

Permission to use, copy, modify, and distribute this software for any purpose with or without fee is hereby granted, provided that the above copyright notice and this permission notice appear in all copies.

THE SOFTWARE IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT OF THIRD PARTY RIGHTS. IN NO EVENT SHALL THE AUTHORS OR COPYRIGHT HOLDERS BE LIABLE FOR ANY CLAIM, DAMAGES OR OTHER LIABILITY, WHETHER IN AN ACTION OF CONTRACT, TORT OR OTHERWISE, ARISING FROM, OUT OF OR IN CONNECTION WITH THE SOFTWARE OR THE USE OR OTHER DEALINGS IN THE SOFTWARE.

Except as contained in this notice, the name of a copyright holder shall not be used in advertising or otherwise to promote the sale, use or other dealings in this Software without prior written authorization of the copyright holder.

unzip:

This is version 2005-Feb-10 of the Info-ZIP copyright and license. The definitive version of this document should be available at ftp://ftp.info-zip.org/pub/infozip/license.html indefinitely.

Copyright (c) 1990-2005 Info-ZIP. All rights reserved.

For the purposes of this copyright and license, "Info-ZIP" is defined as the following set of individuals:

Mark Adler, John Bush, Karl Davis, Harald Denker, Jean-Michel Dubois, Jean-loup Gailly, Hunter Goatley, Ed Gordon, Ian Gorman, Chris Herborth, Dirk Haase, Greg Hartwig, Robert Heath, Jonathan Hudson, Paul Kienitz, David Kirschbaum,

Johnny Lee, Onno van der Linden, Igor Mandrichenko, Steve P. Miller, Sergio Monesi, Keith Owens, George Petrov, Greg Roelofs, Kai Uwe Rommel, Steve Salisbury, Dave Smith, Steven M. Schweda, Christian Spieler, Cosmin Truta, Antoine Verheijen, Paul von Behren, Rich Wales, Mike White

This software is provided “as is,” without warranty of any kind, express or implied. In no event shall Info-ZIP or its contributors be held liable for any direct, indirect, incidental, special or consequential damages arising out of the use of or inability to use this software.

Permission is granted to anyone to use this software for any purpose, including commercial applications, and to alter it and redistribute it freely, subject to the following restrictions:

1. Redistributions of source code must retain the above copyright notice, definition, disclaimer, and this list of conditions.
2. Redistributions in binary form (compiled executables) must reproduce the above copyright notice, definition, disclaimer, and this list of conditions in documentation and/or other materials provided with the distribution. The sole exception to this condition is redistribution of a standard UnZipSFX binary (including SFXWiz) as part of a self-extracting archive; that is permitted without inclusion of this license, as long as the normal SFX banner has not been removed from the binary or disabled.
3. Altered versions–including, but not limited to, ports to new operating systems, existing ports with new graphical interfaces, and dynamic, shared, or static library versions–must be plainly marked as such and must not be misrepresented as being the original source. Such altered versions also must not be misrepresented as being Info-ZIP releases–including, but not limited to, labeling of the altered versions with the names “Info-ZIP” (or any variation thereof, including, but not limited to, different capitalizations), “Pocket UnZip,” “WiZ” or “MacZip” without the explicit permission of Info-ZIP. Such altered versions are further prohibited from misrepresentative use of the Zip-Bugs or Info-ZIP e-mail addresses or of the Info-ZIP URL(s).
4. Info-ZIP retains the right to use the names “Info-ZIP,” “Zip,” “UnZip,” “UnZipSFX,” “WiZ,” “Pocket UnZip,” “Pocket Zip,” and “MacZip” for its own source and binary releases.

✍ NOTES

A

Accessories and
Modifications 10-3
Accessory Power 9-19
Active Emergency
Braking System 1-18, 9-50
Adaptive Cruise Control 9-34
Adaptive Forward
Lighting (AFL) 6-5
Adaptive Forward Lighting
(AFL) Light 5-27
Add-On Electrical
Equipment 9-64
Additional Information
OnStar® 14-5
Adjustments
Lumbar, Front Seats 3-5
Thigh Support 3-5
Air Cleaner/Filter, Engine 10-10
Air Filter, Passenger
Compartment 8-12
Air Vents 8-11
Airbag System
Check 3-35
How Does an Airbag
Restrain? 3-28
Passenger Sensing
System 3-29
What Makes an Airbag
Inflate? 3-27
What Will You See after an
Airbag Inflates? 3-28
When Should an Airbag
Inflate? 3-26
Where Are the Airbags? 3-24
Airbags
Adding Equipment to the
Vehicle 3-34
Passenger Status Indicator . . . 5-17
Readiness Light 5-16
Servicing Airbag-Equipped
Vehicles 3-34
System Check 3-22
Alarm
Vehicle Security 2-16
Alert
Side Blind Zone (SBZA) 9-52
All-Wheel Drive 10-20, 9-24
Antilock Brake
System (ABS) 9-25
Warning Light 5-22
Appearance Care
Exterior 10-76
Interior 10-79
Armrest Storage 4-2
Assistance Systems for
Driving 9-47
Assistance Systems for
Parking and Backing 9-43
Automatic
Door Locks 2-12
Headlamp System 6-4
Level Control 9-31
Transmission 9-22
Transmission Fluid 10-10
Automatic Transmission
Manual Mode 9-24
Shift Lock Control
Function Check 10-21

B

Battery 10-20
Exterior Lighting Battery Saver 6-9
Jump Starting 10-71
Power Protection 6-9
Voltage and Charging Messages 5-35
Blade Replacement, Wiper . . . 10-22
Brake
Parking, Electric 9-26
System Warning Light 5-21
Brakes 10-17
Antilock 9-25
Assist 9-27
Fluid 10-18
System Messages 5-35
Braking 9-3
Braking System
Active Emergency 1-18
Break-In, New Vehicle 9-14
Bulb Replacement 10-25
Back-up Lamps 10-23
Headlamp Aiming 10-23
Headlamps 10-23
High Intensity Discharge (HID) Lighting 10-23
License Plate Lamps 10-24
Buying New Tires 10-50

C

Calibration 5-5
California
Fuel Requirements 9-56
Perchlorate Materials Requirements 10-3
Warning 10-2
Canadian Vehicle Owners iii
Capacities and Specifications 12-2
Carbon Monoxide
Engine Exhaust 9-21
Trunk 2-14
Winter Driving 9-7
Cargo
Management System 4-4
Tie-Downs 4-4
Cautions, Danger, and Warnings iii
Center Console Storage 4-2
Chains, Tire 10-54
Charging System Light 5-18
Check
Engine Light 5-18
Child Restraints
Infants and Young Children 3-38
Lower Anchors and Tethers for Children 3-43
Older Children 3-36
Securing 3-49, 3-52
Systems 3-40
Cigarette Lighter 5-7
Circuit Breakers 10-26
Cleaning
Exterior Care 10-76
Interior Care 10-79
Climate Control Systems
Dual Automatic 8-1, 8-6
Rear 8-9
Clock 5-5
Cluster, Instrument 5-9
Collision Damage Repair 13-9

Compact Spare Tire 10-69
Compass 5-5
Messages 5-36
Compressor Kit, Tire
Sealant.....10-57
Connections
OnStar® 14-4
Control of a Vehicle 9-3
Convenience Net 4-4
Convex Mirrors 2-18
Coolant
Engine 10-12
Engine Temperature
Gauge 5-15
Engine Temperature
Warning Light 5-24
Cooling System 10-11
Engine Messages 5-37
Courtesy Lamps 6-7
Courtesy Transportation
Program 13-8
Cover
Engine 10-6
Cruise Control 9-32
Light 5-27
Messages 5-36
Cruise Control, Active 9-34
Customer Assistance 13-4
Offices 13-3
Text Telephone (TTY)
Users 13-4
Customer Information
Service Publications
Ordering Information 13-11
Customer Satisfaction
Procedure 13-1

D

Damage Repair, Collision 13-9
Danger, Warnings, and
Cautions iii
Data Recorders, Event 13-14
Daytime Running
Lamps (DRL) 6-4
Defensive Driving 9-3
Delayed Locking 2-12
Diagnostics
OnStar® 14-5
Distracted Driving 9-2
Dome Lamps 6-7
Door
Ajar Light 5-28
Ajar Messages 5-36
Delayed Locking 2-12
Locks 2-10
Power Locks 2-12
Rear Seat Pass-Through 3-13
Drive Belt Routing, Engine 12-3
Drive Systems
All-Wheel Drive 10-20, 9-24
Driver Assistance Systems 9-43
Driver Information
Center (DIC) 5-28
Driving
Assistance Systems 9-47
Characteristics and
Towing Tips 9-59
Defensive 9-3
Drunk 9-3
For Better Fuel Economy 1-22
Highway Hypnosis 9-6
Hill and Mountain Roads 9-7
If the Vehicle is Stuck 9-9
Loss of Control 9-5
Off-Road Recovery 9-5

Driving (cont'd)
Vehicle Load Limits 9-10
Wet Roads 9-6
Winter 9-7
Dual Automatic Climate
Control System 8-1, 8-6

E

Electric Parking Brake 9-26
Electric Parking Brake Light ... 5-21
Electrical Equipment,
Add-On 9-64
Electrical System
Engine Compartment
Fuse Block 10-26
Fuses and Circuit
Breakers 10-26
Instrument Panel Fuse
Block 10-30
Overload 10-25
Rear Compartment Fuse
Block 10-32
Emergency
OnStar® 14-2
Engine
Air Cleaner/Filter 10-10
Check and Service Engine
Soon Light 5-18
Compartment Overview 10-5
Coolant 10-12
Coolant Temperature
Gauge 5-15
Coolant Temperature
Warning Light 5-24
Cooling System 10-11
Cooling System Messages ...5-37
Cover 10-6
Drive Belt Routing 12-3
Exhaust 9-21
Heater 9-18
Oil Life System 10-9
Oil Messages 5-37
Overheated Protection
Operating Mode 10-16
Overheating 10-14
Power Messages 5-38
Pressure Light 5-25
Running While Parked 9-22
Starting 9-17
Entry Lighting 6-8
Equipment, Towing 9-64
Event Data Recorders 13-14
Exit Lighting 6-8
Extender, Safety Belt 3-20
Exterior Lamp Controls 6-1
Exterior Lamps Off Reminder ... 6-3
Exterior Lighting Battery
Saver 6-9

F

Features
Memory 1-7
Filter,
Engine Air Cleaner 10-10
Flash-to-Pass 6-4
Flashers, Hazard Warning 6-5
Flat Tire 10-55
Changing 10-65
Floor Mats 10-82
Fluid
Automatic Transmission 10-10
Brakes 10-18
Power Steering 10-16
Washer 10-17
Folding Mirrors 2-19

Forward Collision Alert
(FCA) System 9-47
Front Seats
Heated and Ventilated 3-9
Fuel 9-55
Additives 9-56
Economy Driving 1-22
Filling a Portable Fuel
Container 9-59
Filling the Tank 9-57
Foreign Countries 9-56
Gasoline Specifications 9-56
Gauge 5-13
Low Fuel Warning Light 5-26
Recommended 9-56
Requirements, California 9-56
System Messages 5-38
Full-Size Spare Tire 10-70
Fuses
Engine Compartment
Fuse Block 10-26
Fuses and Circuit
Breakers 10-26
Fuses (cont'd)
Instrument Panel Fuse
Block 10-30
Rear Compartment Fuse
Block 10-32

G

Garage Door Opener 5-51
Programming 5-51
Gasoline
Specifications 9-56
Gauges
Engine Coolant
Temperature 5-15
Fuel 5-13
Odometer 5-13
Speedometer 5-13
Tachometer 5-13
Trip Odometer 5-13
Warning Lights and
Indicators 5-7
General Information
Service and Maintenance 11-1
Towing 9-59
Vehicle Care 10-2
Glove Box 4-2
GM Mobility Reimbursement
Program 13-5

H

Hazard Warning Flashers 6-5
Head Restraints 3-2
Head-up Display 5-31
Headlamp Leveling Control 6-5
Headlamps
Adaptive Forward
Lighting (AFL) 6-5
Aiming 10-23
Automatic 6-4
Bulb Replacement 10-23
Daytime Running
Lamps (DRL) 6-4
Flash-to-Pass 6-4
High Intensity Discharge
(HID) Lighting 10-23
High-Beam On Light 5-26
High/Low Beam Changer 6-3
Lamps On Reminder 5-27
Heated
Rear Seats 3-12
Steering Wheel 5-3

Heated and Ventilated Front Seats 3-9
Heated Mirrors 2-19
Heater
Engine 9-18
High-Beam On Light 5-26
High-Speed Operation 10-43
Highway Hypnosis 9-6
Hill and Mountain Roads 9-7
Hill Start Assist (HSA) 9-28
Hood 10-4
Horn 5-3
How to Wear Safety Belts Properly 3-15

I

Ignition Positions 9-15
Immobilizer 2-17
Indicator
Vehicle Ahead 5-23
Infants and Young Children, Restraints 3-38
Infotainment 7-1
Infotainment System 13-15
Instrument Cluster 5-9
Instrument Panel Storage Area 4-1
Instrument Panel Overview 1-2
Introduction iii

J

Jump Starting 10-71

K

Key and Lock Messages 5-38
Keyless Entry
Remote (RKE) System 2-3
Keys 2-1

L

Labeling, Tire Sidewall 10-36
Lamps
Courtesy 6-7
Daytime Running (DRL) 6-4
Dome 6-7
Exterior Controls 6-1
Exterior Lamps Off Reminder 6-3
Exterior Lighting Battery Saver 6-9
Lamps (cont'd)
License Plate 10-24
Malfunction Indicator 5-18
Messages 5-39
On Reminder 5-27
Reading 6-7
Lane Departure Warning (LDW) 9-53
Lane Departure Warning Light 5-22
Lap-Shoulder Belt 3-16
LATCH System
Replacing Parts after a Crash 3-49
LATCH, Lower Anchors and Tethers for Children 3-43
LED Lighting 10-23
Level Control
Automatic 9-31
Leveling Control
Headlamp 6-5
Light
Adaptive Forward Lighting (AFL) Light 5-27
Lighter, Cigarette 5-7

Lighting
Adaptive Forward 6-5
Entry 6-8
Exit 6-8
Illumination Control 6-6
LED 10-23
Lights
Airbag Readiness 5-16
Antilock Brake System (ABS) Warning 5-22
Brake System Warning 5-21
Charging System 5-18
Cruise Control 5-27
Door Ajar 5-28
Electric Parking Brake 5-21
Engine Coolant Temperature Warning 5-24
Engine Oil Pressure 5-25
Flash-to-Pass 6-4
High-Beam On 5-26
High/Low Beam Changer 6-3
Lane Departure Warning 5-22
Low Fuel Warning 5-26
Safety Belt Reminders 5-15
Security 5-26
Lights (cont'd)
Service Electric Parking Brake 5-21
StabiliTrak® OFF 5-23
Tire Pressure 5-25
Traction Control System (TCS)/StabiliTrak® 5-24
Traction Off 5-23
Limited-Slip Rear Axle 9-31
Locks
Automatic Door 2-12
Delayed Locking 2-12
Door 2-10
Lockout Protection 2-13
Power Door 2-12
Safety 2-13
Loss of Control 9-5
Low Fuel Warning Light 5-26
Lower Anchors and Tethers for Children (LATCH System) 3-43
Lumbar Adjustment 3-5
Front Seats 3-5

M

Magnetic Ride Control 9-31
Maintenance
Records 11-15
Maintenance Schedule
Recommended Fluids and Lubricants 11-13
Malfunction Indicator Lamp 5-18
Manual Mode 9-24
Memory Features 1-7
Memory Seats 3-7
Messages
Airbag System 5-43
Battery Voltage and Charging 5-35
Brake System 5-35
Compass 5-36
Door Ajar 5-36
Engine Cooling System 5-37
Engine Oil 5-37
Engine Power 5-38
Fuel System 5-38
Key and Lock 5-38
Lamp 5-39
Object Detection System 5-39
Ride Control System 5-42

Messages (cont'd)
Security 5-43
Service Vehicle 5-43
Starting the Vehicle 5-43
Tire 5-43
Transmission 5-44
Vehicle 5-34
Vehicle Reminder 5-44
Vehicle Speed 5-45
Washer Fluid 5-45
Window 5-45
Mirrors
Automatic Dimming
Rearview 2-19
Convex 2-18
Folding 2-19
Heated 2-19
Power 2-18
Monitor System, Tire
Pressure 10-43

N

Navigation
OnStar® 14-2
Net, Convenience 4-4
New Vehicle Break-In 9-14

O

Object Detection System
Messages 5-39
Odometer 5-13
Trip 5-13
Off-Road
Recovery 9-5
Oil
Engine 10-6
Engine Oil Life System 10-9
Messages 5-37
Pressure Light 5-25
Older Children, Restraints 3-36
Online Owner Center 13-4
OnStar®
System, In Brief 1-22
OnStar® Additional
Information 14-5
OnStar® Connections 14-4
OnStar® Diagnostics 14-5
OnStar® Emergency 14-2
OnStar® Navigation 14-2
OnStar® Overview 14-1
OnStar® Security 14-2
Ordering
Service Publications 13-11
Outlets
Power 5-6
Overheated Engine
Protection
Operating Mode 10-16
Overheating, Engine 10-14

P

Park
Shifting Into 9-19
Shifting Out of 9-20
Parking
Brake and P (Park)
Mechanism Check 10-21
Over Things That Burn 9-21
Parking or Backing
Assistance Systems 9-43
Passenger Airbag Status
Indicator 5-17

Passenger Compartment Air
Filter 8-12
Passenger Sensing System . . . 3-29
Perchlorate Materials
Requirements, California 10-3
Personalization
Vehicle 5-45
Power
Door Locks 2-12
Mirrors 2-18
Outlets 5-6
Protection, Battery 6-9
Retained Accessory (RAP) . . .9-19
Seat Adjustment 3-4
Steering Fluid 10-16
Windows 2-20
Pregnancy, Using Safety
Belts 3-20
Privacy
Radio Frequency
Identification (RFID) 13-15
Program
Courtesy Transportation 13-8
Proposition 65 Warning,
California 10-2

R

Radio Frequency
Identification (RFID) 13-15
Statement 13-15
Reading Lamps 6-7
Rear Axle
Limited-Slip 9-31
Rear Climate Control System . . . 8-9
Rear Seat
Pass-Through Door 3-13
Rear Seats 3-11
Heated 3-12
Rearview Mirrors
Automatic Dimming 2-19
Reclining Seatbacks 3-6
Recommended
Fuel 9-56
Recommended Fluids and
Lubricants 11-13
Records
Maintenance 11-15
Recreational Vehicle
Towing 10-74
Reimbursement Program,
GM Mobility 13-5
Remote Keyless Entry
(RKE) System 2-2, 2-3
Remote Vehicle Start 2-8
Replacement Bulbs 10-25
Replacement Parts
Airbags 3-35
Maintenance 11-14
Replacing Airbag System 3-35
Replacing LATCH System
Parts after a Crash 3-49
Replacing Safety Belt
System Parts after a Crash . . . 3-21
Reporting Safety Defects
Canadian Government 13-13
General Motors 13-13
U.S. Government 13-12
Restraints
Where to Put 3-42
Retained Accessory
Power (RAP) 9-19
Ride Control Systems
Limited Slip Rear Axle 9-31
Magnetic 9-31
Messages 5-42
Roads
Driving, Wet 9-6

Roadside Service 13-5
Roof
Sunroof 2-24
Rotation, Tires 10-48
Routing, Engine Drive Belt 12-3
Running the Vehicle While
Parked 9-22

S

Safety Belts 3-14
Care 3-21
Extender 3-20
How to Wear Safety Belts
Properly 3-15
Lap-Shoulder Belt 3-16
Reminders 5-15
Replacing after a Crash 3-21
Use During Pregnancy 3-20
Safety Defects Reporting
Canadian Government 13-13
General Motors 13-13
U.S. Government 13-12
Safety Locks 2-13
Safety System Check 3-21
Scheduling Appointments 13-7
Sealant Kit, Tire 10-57
Seats
Head Restraints 3-2
Heated and Ventilated Front . . . 3-9
Heated, Rear 3-12
Lumbar Adjustment, Front 3-5
Memory 3-7
Power Adjustment, Front 3-4
Rear 3-11
Reclining Seatbacks 3-6
Securing Child
Restraints 3-49, 3-52
Security
Light 5-26
Messages 5-43
OnStar® 14-2
Vehicle 2-16
Vehicle Alarm 2-16
Service 8-12
Accessories and
Modifications 10-3
Doing Your Own Work 10-3
Engine Soon Light 5-18
Maintenance Records 11-15
Maintenance, General
Information 11-1
Parts Identification Label 12-1
Service (cont'd)
Publications Ordering
Information 13-11
Scheduling Appointments 13-7
Vehicle Messages 5-43
Service Electric Parking
Brake Light 5-21
Servicing the Airbag 3-34
Shift Lock Control Function
Check, Automatic
Transmission 10-21
Shifting
Into Park 9-19
Out of Park 9-20
Side Blind Zone
Alert (SBZA) 9-52
Signals, Turn and
Lane-Change 6-6
Spare Tire
Compact 10-69
Specifications and
Capacities 12-2
Speedometer 5-13
StabiliTrak
OFF Light 5-23
System 9-29
Start Assist, Hills 9-28

Start Vehicle, Remote 2-8
Starter Switch Check 10-20
Starting the Engine 9-17
Starting the Vehicle
  Messsages 5-43
Steering 9-4
  Fluid, Power 10-16
  Heated Wheel 5-3
  Wheel Adjustment 5-2
  Wheel Controls 5-2
Storage Areas
  Armrest 4-2
  Cargo Management System ... 4-4
  Center Console 4-2
  Convenience Net 4-4
  Glove Box 4-2
  Instrument Panel 4-1
Storing the Tire Sealant
  and Compressor Kit 10-64
Stuck Vehicle 9-9
Sun Visors 2-22
Sunroof 2-24
Symbols iv
System
  Active Emergency Braking 9-50
  Forward Collision
    Alert (FCA) 9-47
  Infotainment 13-15, 7-1
Systems
  Driver Assistance 9-43

T

Tachometer 5-13
Text Telephone (TTY) Users ... 13-4
Theft-Deterrent Systems 2-17
  Immobilizer 2-17
Thigh Support Adjustment 3-5
Time 5-5
Tires
  Buying New Tires 10-50
  Chains 10-54
  Changing 10-65
  Compact Spare 10-69
  Designations 10-38
  Different Size 10-51
  Full-Size Spare 10-70
  If a Tire Goes Flat 10-55
  Inflation Monitor System 10-44
  Inspection 10-48
Tires (cont'd)
  Messages 5-43
  Pressure 10-43
  Pressure Light 5-25
  Pressure Monitor System ... 10-43
  Rotation 10-48
  Sealant and
    Compressor Kit 10-57
  Sealant and Compressor
    Kit, Storing 10-64
  Sidewall Labeling 10-36
  Terminology and
    Definitions 10-38
  Uniform Tire Quality
    Grading 10-52
  Wheel Alignment and Tire
    Balance 10-53
  Wheel Replacement 10-54
  When It Is Time for New
    Tires 10-49
  Winter 10-35
Towing
  Driving Characteristics 9-59
  Equipment 9-64
  General Information 9-59

Towing (cont'd)
Recreational Vehicle 10-74
Trailer 9-62
Vehicle 10-73
Traction
Control System (TCS) 9-28
Control System (TCS)/
StabiliTrak® Light 5-24
Limited-Slip Rear Axle 9-31
Off Light 5-23
Trailer
Towing 9-62
Transmission
Automatic 9-22
Fluid, Automatic 10-10
Messages 5-44
Transportation Program,
Courtesy 13-8
Trip Odometer 5-13
Trunk 2-14
Turn and Lane-Change
Signals 6-6

U

Uniform Tire Quality
Grading 10-52
Universal Remote System 5-51
Operation 5-54
Programming 5-51
Using This Manual iii

V

Vehicle
Alarm System 2-16
Canadian Owners iii
Control 9-3
Identification
Number (VIN) 12-1
Load Limits 9-10
Messages 5-34
Personalization 5-45
Reminder Messages 5-44
Remote Start 2-8
Security 2-16
Speed Messages 5-45
Towing 10-73
Vehicle Ahead Indicator 5-23
Vehicle Care
Storing the Tire Sealant
and Compressor Kit 10-64
Tire Pressure 10-41
Ventilation, Air 8-11
Visors 2-22

W

Warning
Brake System Light 5-21
Lane Departure (LDW) 9-53
Warning Lights, Gauges, and
Indicators 5-7
Warnings iii
Cautions and Danger iii
Hazard Flashers 6-5
Washer Fluid 10-17
Messages 5-45
Wheels
Alignment and Tire
Balance 10-53
Different Size 10-51
Replacement 10-54

When It Is Time for New
Tires 10-49
Where to Put the Restraint 3-42
Windows 2-20
Messages 5-45
Power 2-20
Windshield
Replacement 10-22
Wiper/Washer 5-3
Winter
Driving 9-7
Winter Tires 10-35
Wiper Blade Replacement 10-22

✍ NOTES