2018

# Escalade

cadillac.com (U.S.)
cadillac.ca (Canada)

# Contents

Introduction ..... 2
In Brief ..... 5
Keys, Doors, and Windows ..... 28
Seats and Restraints ..... 58
Storage ..... 116
Instruments and Controls ..... 120
Lighting ..... 164
Infotainment System ..... 172
Climate Controls ..... 173
Driving and Operating ..... 182
Vehicle Care ..... 263
Service and Maintenance ..... 345
Technical Data ..... 358
Customer Information ..... 362
Reporting Safety Defects ..... 372
OnStar ..... 376
Index ..... 387

# Introduction

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 Emblem, and ESCALADE are trademarks and/or service marks of General Motors LLC, its subsidiaries, affiliates, or licensors.

For vehicles first sold in Canada, substitute the name “General Motors of Canada Company” for Cadillac Motor Division wherever it appears in this manual.

This manual describes features that may or may not be on the vehicle because of optional equipment that was not purchased on the vehicle, model variants, country specifications, features/applications that may not be available in your region, or changes subsequent to the printing of this owner’s manual.

Refer to the purchase documentation relating to your specific vehicle to confirm the features.

Keep this manual in the vehicle for quick reference.

## Canadian Vehicle Owners

A French language manual can be obtained from your dealer, at www.helminc.com, or from:

### Propriétaires Canadiens

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
USA

## 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.

Litho in U.S.A.
Part No. 84016525 B Second Printing

©2017 General Motors LLC. All Rights Reserved.

## Danger, Warning, and Caution

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

**⚠ Danger**

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

**⚠ Warning**

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

**Caution**

Caution indicates a hazard that could result in property or vehicle damage.

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.

: Shown when the owner’s manual has additional instructions or information.

: Shown when the service manual has additional instructions or information.

⇨ : Shown when there is more information on another page — “see page.”

### Vehicle Symbol Chart

Here are some additional symbols that may be found on the vehicle and what they mean. See the features in this manual for information.

: Airbag Readiness Light

: Air Conditioning

: Antilock Brake System (ABS)

: Brake System Warning Light

: Charging System

: Cruise Control

: Do Not Puncture

: Do Not Service

: Engine Coolant Temperature

: Exterior Lamps

: Flame/Fire Prohibited

: Fuel Gauge

: Fuses

: Headlamp High/Low-Beam Changer

: ISOFIX/LATCH System Child Restraints

: Malfunction Indicator Lamp

: Oil Pressure

: Power

: Remote Vehicle Start

: Seat Belt Reminders

: Tire Pressure Monitor

: Traction Control/StabiliTrak

: Under Pressure

: Windshield Washer Fluid

# In Brief

## Instrument Panel

Instrument Panel ..... 6

## Initial Drive Information

Initial Drive Information ..... 8
Remote Keyless Entry (RKE) System ..... 8
Remote Vehicle Start ..... 8
Door Locks ..... 9
Liftgate ..... 9
Windows ..... 10
Seat Adjustment ..... 10
Memory Features ..... 13
Second Row Seats ..... 14
Third Row Seats ..... 14
Heated and Cooled Front Seats ... 14
Head Restraint Adjustment ..... 14
Seat Belts ..... 14
Passenger Sensing System ..... 15
Mirror Adjustment ..... 15
Steering Wheel Adjustment ..... 16
Throttle and Brake Pedal Adjustment ..... 16
Interior Lighting ..... 17
Exterior Lighting ..... 17
Windshield Wiper/Washer ..... 18
Climate Controls ..... 18
Transmission ..... 19
Four-Wheel Drive ..... 20

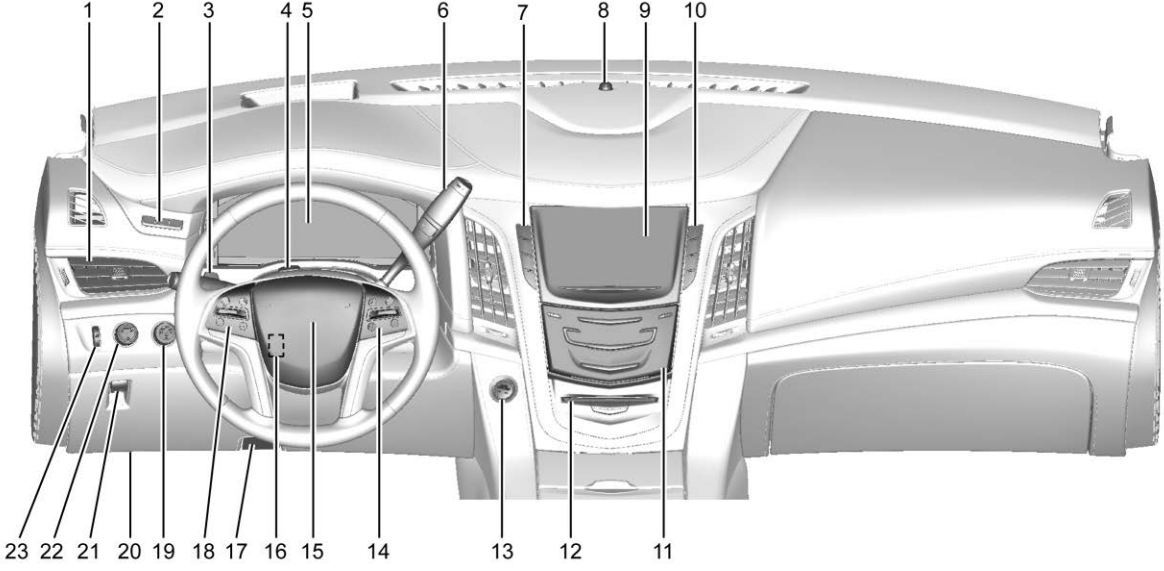
## Vehicle Features

Infotainment System ..... 21
Steering Wheel Controls ..... 21
Cruise Control ..... 21
Driver Information Center (DIC) ..... 21
Forward Collision Alert (FCA) System ..... 22
Forward Automatic Braking (FAB) ..... 22
Lane Keep Assist (LKA) ..... 22
Lane Change Alert (LCA) ..... 22
Surround Vision ..... 23
Rear Vision Camera (RVC) ..... 23
Rear Cross Traffic Alert (RCTA) System ..... 23
Parking Assist ..... 23
Automatic Parking Assist (APA) ..... 23
Reverse Automatic Braking (RAB) ..... 23
Power Outlets ..... 24
Universal Remote System ..... 24
Sunroof ..... 24

## Performance and Maintenance

Traction Control/Electronic Stability Control ..... 25
Tire Pressure Monitor ..... 25
Fuel ..... 26
E85 or FlexFuel ..... 26
Engine Oil Life System ..... 26
Driving for Better Fuel Economy ..... 27
Roadside Service ..... 27

# Instrument Panel



1. *Air Vents* ⇨ *179*.
2. *Head-Up Display (HUD)* ⇨ *147* (If Equipped).
3. Turn Signal Lever. See *Turn and Lane-Change Signals* ⇨ *168*.

   *Windshield Wiper/Washer* ⇨ *121*.

   *Rear Window Wiper/Washer* ⇨ *123*.
4. *Hazard Warning Flashers* ⇨ *168*.
5. *Instrument Cluster* ⇨ *130*.
6. Shift Lever. See *Automatic Transmission* ⇨ *206*.

   Tow/Haul Mode Selector Button. See *Tow/Haul Mode* ⇨ *210*.

   Range Selection Mode Buttons (If Equipped). See *Manual Mode* ⇨ *209*.
7. Magnetic Ride Control Button. See *Magnetic Ride Control* ⇨ *221*.

   Pedal Adjust Switch (If Equipped). See *Adjustable Throttle and Brake Pedal* ⇨ *198*.

   *Traction Control/Electronic Stability Control* ⇨ *218*.
8. Light Sensor. See *Automatic Headlamp System* ⇨ *167*.
9. *Infotainment* ⇨ *172*.
10. Glove Box Button. See *Glove Box* ⇨ *116*.

    *Lane Keep Assist (LKA)* ⇨ *246* (If Equipped).

    Parking Assist Button. See *Assistance Systems for Parking or Backing* ⇨ *233*.
11. *Dual Automatic Climate Control System* ⇨ *173*.

    *Instrument Panel Storage* ⇨ *116*.
12. CD Player. See the infotainment manual.
13. ENGINE START/STOP Button. See *Ignition Positions* ⇨ *199*.
14. *Steering Wheel Controls* ⇨ *121*.

    Driver Information Center (DIC) Controls. See *Driver Information Center (DIC)* ⇨ *145*.
15. *Horn* ⇨ *121*.
16. *Steering Wheel Adjustment* ⇨ *121*.
17. Hood Release. See *Hood* ⇨ *266*.
18. *Cruise Control* ⇨ *222* (If Equipped).

    *Adaptive Cruise Control* ⇨ *225* (If Equipped).

    *Forward Collision Alert (FCA) System* ⇨ *240* (If Equipped).

    *Heated Steering Wheel* ⇨ *121* (If Equipped).

    Phone Button. See the infotainment manual.
19. Automatic Transfer Case Knob (If Equipped). See *Four-Wheel Drive* ⇨ *211*.
20. Data Link Connector (DLC) (Out of View). See *Malfunction Indicator Lamp (Check Engine Light)* ⇨ *137*.
21. *Electric Parking Brake* ⇨ *216* (If Equipped).
22. *Exterior Lamp Controls* ⇨ *164*.
23. *Instrument Panel Illumination Control* ⇨ *169*.

# 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's manual.

## Remote Keyless Entry (RKE) System

The Remote Keyless Entry (RKE) transmitter is used to remotely lock and unlock the doors from up to 60 m (197 ft) away from the vehicle.

**:** Press to unlock the driver door. Press again within three seconds to unlock all remaining doors.

**:** Press to lock all doors.

Lock and unlock feedback can be personalized. See *Vehicle Personalization* ⇨ *152*.

**:** Press twice to open or close the liftgate. Press once to stop the liftgate from moving.

**:** Press twice to open the liftglass.

**:** Press and release to initiate vehicle locate. The turn signal lamps flash and the horn sound three times.

Press and hold for more than three seconds to sound the panic alarm.

Press again to cancel the panic alarm.

See *Keys* ⇨ *28* and *Remote Keyless Entry (RKE) System* ⇨ *29*.

## Remote Vehicle Start

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 four seconds or until the turn signal lamps flash.

Start the vehicle normally after entering.

When the vehicle starts, the parking lamps will turn on.

Remote start can be extended.

### Canceling a Remote Start

To cancel a remote start, do one 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* ⇨ *36*.

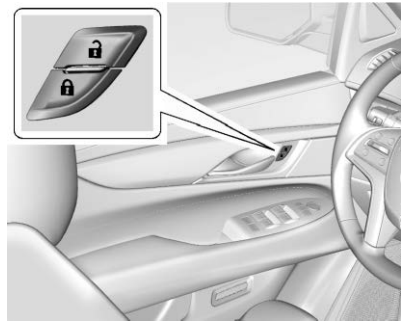
## Door Locks

To lock or unlock the doors from inside the vehicle:

- Press or on a power door lock switch.
- Push down the manual lock knob on the driver door to lock all doors. Push down the lock knob on a passenger door to lock that door only.
- Pull the door handle once to unlock that door. Pull the handle again to unlatch it.

To lock or unlock the doors from outside the vehicle press or on the RKE transmitter or use the key in the front doors. The key cylinder is covered by a cap. See *Door Locks* ⇨ *37*. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

### Power Door Locks



**:** Press to lock the doors.

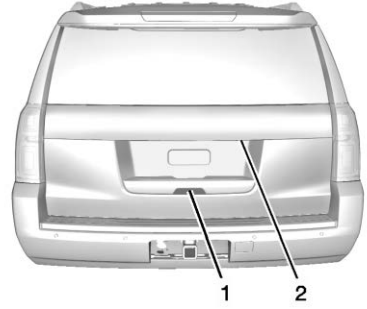
**:** Press to unlock the doors.

See *Door Locks* ⇨ *37*.

### Keyless Access

The RKE transmitter must be within 1 m (3 ft) of the liftgate or door being opened. Pressing the button on the driver door handle will unlock the driver door. If the handle button is pressed again within five seconds, the passenger doors and liftgate will unlock. See “Keyless Access Operation” in *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

## Liftgate



To open the liftgate, press on the power door lock switch or press on the Remote Keyless Entry (RKE) transmitter twice to unlock all doors. Press the touch pad (1) on the underside of the liftgate handle and lift up. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

Use the pull cup to lower and close the liftgate. Do not press the touch pad while closing the liftgate. This will cause the liftgate to be unlatched.

To open the liftglass, press the button (2) above the license plate. Close the liftglass before opening the liftgate to avoid damaging it.

### Power Liftgate Operation

If equipped with a power liftgate, the switch is on the overhead console. The vehicle must be in P (Park).

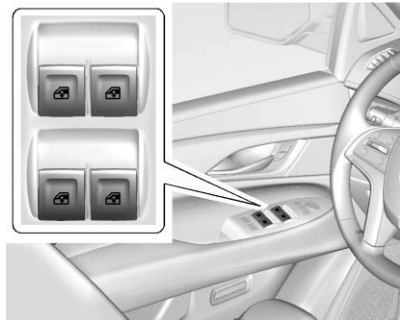
Choose the power liftgate mode by selecting MAX or 3/4. Press on the overhead console or on the RKE transmitter press twice quickly.

Press any liftgate button while the liftgate is moving to stop it. Pressing again reverses the direction.

To close, press on the bottom of the liftgate next to the latch.

To disable the power liftgate function, select OFF on the liftgate switch. See *Liftgate* ⇨ *41*.

## Windows



Power windows work when the ignition is on, in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* ⇨ *203*.

Using the window switch, press to open or pull to close the window.

The windows may be temporarily disabled if they are used repeatedly within a short time.

## Seat Adjustment

### Uplevel Seat Adjustment

If equipped, the ignition must be on to use all uplevel seat features.

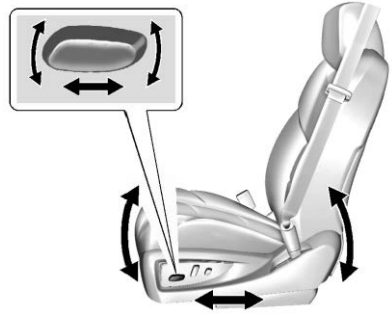
#### Uplevel Seat Control

1. Feature Select
2. Up
3. Rearward

4. Down
5. Forward

- Move Feature Select (1) to display seat adjustments on the infotainment display. Press and release or hold to scroll through features.
- Press Up (2) to make upward adjustments of the selected feature.
- Press Rearward (3) to make rearward adjustments of the selected feature.
- Press Down (4) to make downward adjustments of the selected feature.
- Press Forward (5) to make forward adjustments of the selected feature.

## Base Seat Adjustment



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.

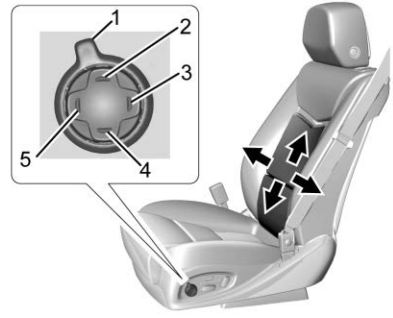
See *Power Seat Adjustment* ⇨ *60*.

## Lumbar and Bolster Support

### Uplevel Seat Adjustment

If equipped, the ignition must be on to use all uplevel seat features.

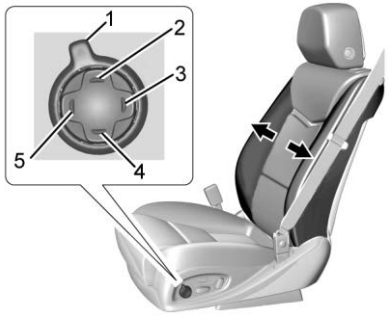
To adjust lumbar support, if equipped:




- Press and release or hold Feature Select (1) to scroll to lumbar support on the infotainment display.
- Press Forward (5) or Rearward (3) to adjust lumbar forward or rearward.
- Press Up (2) or Down (4) to adjust lumbar up or down.

See *Lumbar Adjustment* ⇨ *61*.

To adjust bolster support, if equipped:

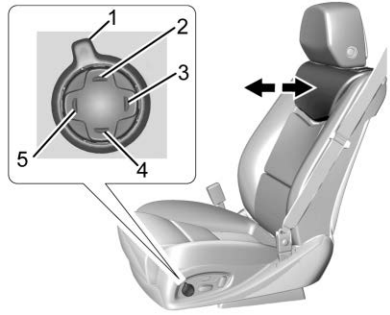



- Press and release or hold Feature Select (1) to scroll to bolster support on the infotainment display.
- Press Forward (5) or Rearward (3) to adjust bolster support inward or outward.

See *Lumbar Adjustment* ⇨ *61*.

## Upper Shoulder Support

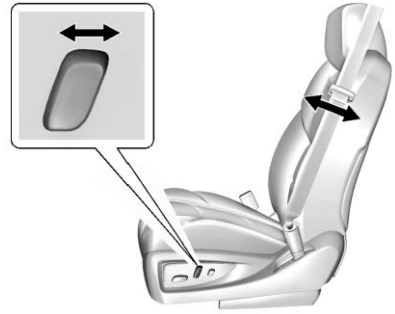
To adjust upper shoulder support, if equipped:




- Press and release or hold Feature Select (1) to scroll to upper shoulder support on the infotainment display.
- Press Forward (5) or Rearward (3) to adjust shoulder support forward or rearward.

See *Lumbar Adjustment* ⇨ *61*.

## Reclining Seatbacks



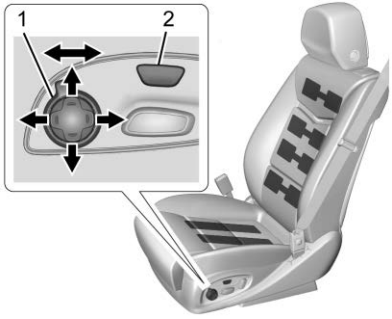
Base Shown, Uplevel Similar

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* ⇨ *63*.

### Massage




Driver Seat Shown, Passenger Seat Similar

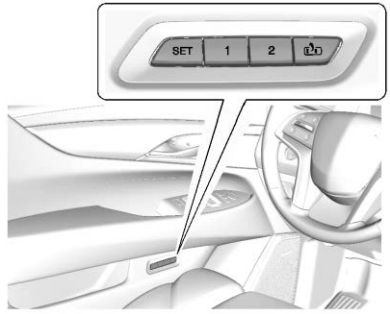
If equipped, the ignition must be on to use the massage feature.

To activate and adjust massage:

1. Turn the selection control (1) to view massage options on the infotainment display.
2. Select massage feature.
3. Press up or down to select massage type.
4. To activate massage at last massage type and intensity settings or to turn massage off, press the massage On/Off control (2).

See *Massage* ⇨ *66*.

## Memory Features




If equipped, memory seats allow two drivers to store and recall their unique seat positions for driving the vehicle, and a shared exit position for getting out of the vehicle. Other feature positions may also be set, such as power mirrors, power steering wheel, and adjustable pedals, if equipped.

Memory positions are linked to RKE transmitter 1 or 2 for automatic memory recalls.

Before storing, adjust all available memory feature positions. Turn the ignition on and then press and release SET; a beep will sound. Then immediately press and hold 1, 2, or (Exit) on the driver door until two beeps sound. To manually recall these positions, press and hold 1, 2, or until the saved position is reached.

When Auto Memory Recall is enabled in the personalization menu, positions previously stored to memory buttons 1 and 2 are recalled when the ignition is changed from off to on or ACC/ACCESSORY.

When Easy Exit Options is enabled in the personalization menu, the feature automatically recalls the previously stored exit position when exiting the vehicle. See *Memory Seats* ⇨ *63*.

## Second Row Seats

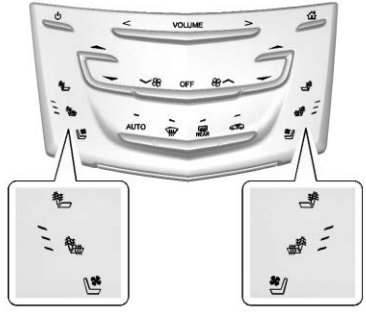
The second row seatbacks can be folded for additional cargo space, or the seats can be folded and tumbled for easy entry/exit to the third row seats. The seatbacks also recline.

See *Second Row Seats* ⇨ *69*.

## Third Row Seats

Third row seatbacks can be folded. See *Third Row Seats* ⇨ *73*.

## Heated and Cooled Front Seats




The buttons are near the climate controls on the center stack. To operate, the engine must be running.

Press or to heat the driver or passenger seatback only.

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

Press or to cool the driver or passenger seat.

See *Heated and Cooled Front Seats* ⇨ *67*.

## 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* ⇨ *59* and *Power Seat Adjustment* ⇨ *60*.

## Seat Belts

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

- *Seat Belts* ⇨ *75*.
- *How to Wear Seat Belts Properly* ⇨ *76*.
- *Lap-Shoulder Belt* ⇨ *77*.
- *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103*.

## Passenger Sensing System

United States

Canada and Mexico

The passenger sensing system will turn off the front outboard passenger frontal airbag under certain conditions. No other airbag is affected by the passenger sensing system. See *Passenger Sensing System* ⇨ *90*

The passenger airbag status indicator will light on the overhead console when the vehicle is started. See *Passenger Airbag Status Indicator* ⇨ *135*.

## Mirror Adjustment

### Interior Mirror

#### Adjustment

Adjust the rearview mirror for a clear view of the area behind the vehicle.

#### Automatic Dimming Rearview Mirror

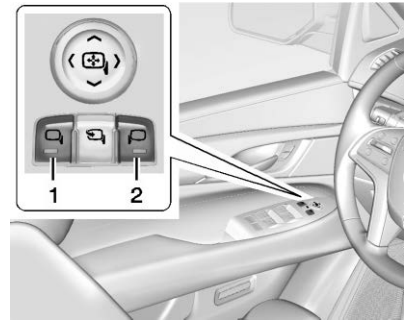
The mirror automatically dims to reduce the glare of headlamps from behind. The dimming feature comes on when the vehicle is started.

#### Rear Camera Mirror

If equipped, this automatic dimming rearview mirror provides a wide angle camera view of the area behind the vehicle. Adjust the mirror with the tab pushed forward so that the display is off. See *Rear Camera Mirror* ⇨ *52*.

### Exterior Mirrors

#### Power Mirrors

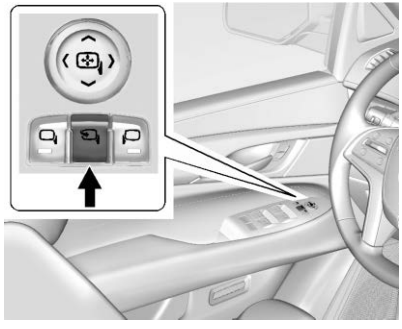


To adjust the mirrors:

1. Press (1) or (2) to select the driver or passenger side mirror.
2. Press the arrows on the control pad to move each mirror in the desired direction.
3. Press either (1) or (2) again to deselect the mirror.

See *Power Mirrors* ⇨ *50*.

### Power Folding Mirrors



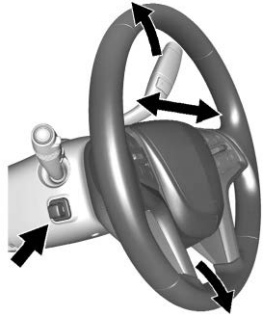
1. Press to fold the mirrors inward.
2. Press again to return the mirrors to the driving position.

### Heated Mirrors

Press REAR to heat the outside mirrors.

See “Rear Window Defogger” under *Dual Automatic Climate Control System* ⇨ *173*.

## Steering Wheel Adjustment



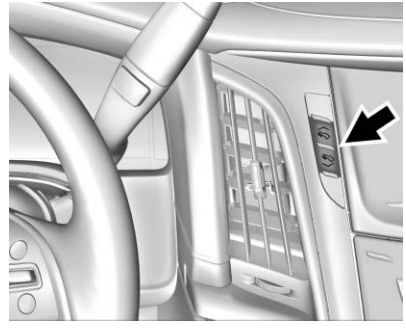
To adjust the power tilt and telescoping steering wheel:

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

Do not adjust the steering wheel while driving.

## Throttle and Brake Pedal Adjustment

If equipped, the position of the throttle and brake pedals can be changed.



Press the top of the switch to move the pedals closer to your body. Press the bottom of the switch to move the pedals away.

See *Adjustable Throttle and Brake Pedal* ⇨ *198*.

The vehicle may have a memory function, which lets pedal settings be saved and recalled. See *Memory Seats* ⇨ *63*.

## Interior Lighting

### Dome Lamps

There are dome lamps in the overhead console and the headliner, if equipped.

To change the dome lamp settings, press the following:

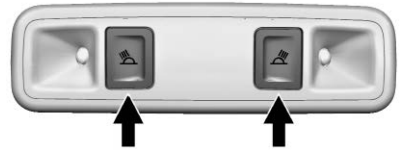
**OFF :** Turns the lamps off, even when a door is open.

**DOOR :** The lamps come on automatically when a door is opened.

**ON :** Turns all dome lamps on.

### Reading Lamps

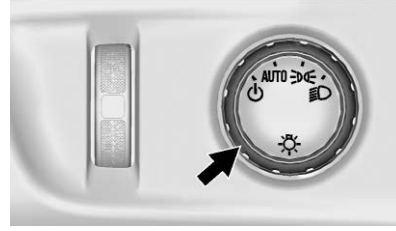
There are reading lamps in the overhead console and the headliner, if equipped. To operate, the ignition must be on or in ACC/ACCESSORY or using Retained Accessory Power (RAP).



Press or next to each reading lamp to turn it on or off.

For more information about interior lighting, see *Instrument Panel Illumination Control* ⇨ *169*.

## Exterior Lighting




The exterior lamp control is on the instrument panel to the left of the steering wheel.

⏻ **:** Turns off the automatic headlamps and Daytime Running Lamps (DRL). Turning the headlamp control to ⏻ again will turn the automatic headlamps and DRL back on.

For vehicles first sold in Canada, the off position only works when the vehicle is shifted into the P (Park) position.

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

**:** Turns on the parking lamps including all lamps, except the headlamps.

**:** Turns on the headlamps together with the parking lamps and instrument panel lights.

See:

- *Exterior Lamp Controls* ⇨ *164*
- *Daytime Running Lamps (DRL)* ⇨ *166*
- *Automatic Headlamp System* ⇨ *167*

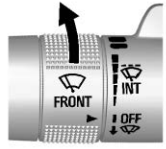
## Windshield Wiper/Washer

The windshield wiper control is on the turn signal lever.

The windshield wipers are controlled by turning the band with FRONT on it.

**:** Fast wipes.

**:** Slow wipes.




**INT :** Use this setting for intermittent wipes or Rainsense™. For intermittent wipes, turn the FRONT band up for more frequent wipes or down for less frequent wipes.

To turn on Rainsense, press AUTO on the lever, then turn the FRONT band on the wiper lever to adjust the sensitivity.

- Turn the band up to a higher INT setting for more sensitivity to moisture.
- Turn the band down to the lower INT setting for less sensitivity to moisture.

Move the band out of the INT position to deactivate Rainsense.

**OFF :** Turns the windshield wipers off.

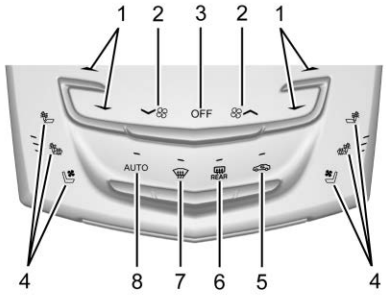
**:** For a single wipe, turn to , then release. For several wipes, hold the band on longer.

**:** Push the paddle at the top of the lever to spray washer fluid on the windshield.

See *Windshield Wiper/Washer* ⇨ *121*.

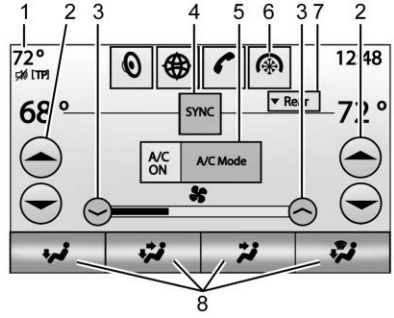
## Climate Controls

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




Center Stack Climate Controls

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



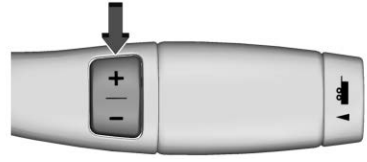

Climate Control Display

1. Outside Temperature Display
2. Driver and Passenger Temperature Controls
3. Fan Control
4. SYNC (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

See *Dual Automatic Climate Control System* ⇨ *173* and *Rear Climate Control System* ⇨ *178* (If Equipped).

# Transmission

## Range Selection Mode



The Range Selection Mode switch, if equipped, is on the shift lever.

1. To enable the Range Selection feature, move the shift lever to the L (Manual Mode) position. The current range will appear next to the L. This is the highest attainable range with all lower gears accessible. As an example, when 5 (Fifth) gear is selected, 1 (First) through 5 (Fifth) gears are available.

2. Press the plus/minus buttons on the shift lever to select the desired range of gears for current driving conditions. See *Manual Mode* ⇨ *209*.

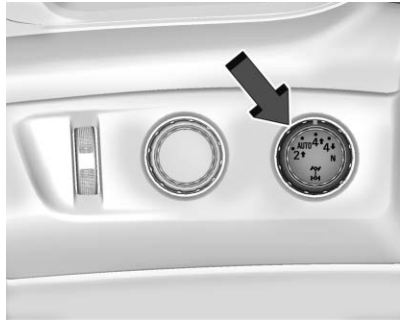
While using Range Selection Mode, cruise control and the Tow/Haul Mode can be used.

Grade Braking is not available when Range Selection Mode is active. See *Tow/Haul Mode* ⇨ *210*.

## Four-Wheel Drive

If equipped with four-wheel drive, the engine's driving power can be sent to all four wheels for extra traction.

### Automatic Transfer Case




This transfer case knob is to the left of the steering column.

The different drive options that may be available are the following:

**2 ↑ (Two-Wheel Drive High) :** This setting is used for driving in most street and highway situations.

**AUTO (Automatic Four-Wheel Drive) :** This setting is ideal for use when road surface traction conditions are variable.

Do not use AUTO mode to park on a steep grade with poor traction such as ice, snow, mud or gravel. In AUTO mode only the rear wheels will hold the vehicle from sliding when parked.

If parking on a steep grade, use 4 ↑ to keep all four wheels engaged.

**4 ↑ (Four-Wheel Drive High) :** Use this setting when extra traction is needed, such as on snowy or icy roads or in most off-road situations.

**N (Neutral) :** Shift to this setting only when towing the vehicle. See *Trailer Towing* ⇨ *255*.

**4 ↓ (Four-Wheel Drive Low) :** Choose 4 ↓ when driving in deep sand, mud, or snow, and while climbing or descending steep hills.

See *Four-Wheel Drive* ⇨ *211*.

# Vehicle Features

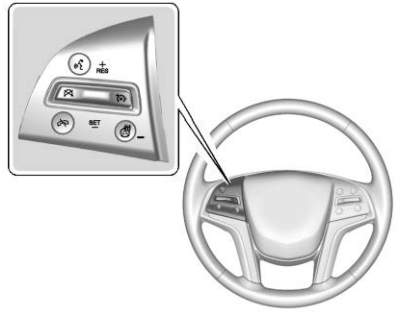
## Infotainment System

See the infotainment manual for information on the radio, audio players, phone, navigation system, Rear Seat Entertainment (RSE), and voice or speech recognition. It also includes information on settings.

## Steering Wheel Controls

The infotainment system can be operated by using the steering wheel controls. See "Steering Wheel Controls" in the infotainment manual.

## Cruise Control




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

**+RES :** If there is a set speed in memory, press the control up briefly to resume that speed or press and hold to accelerate. If the cruise control is already active, use to increase vehicle speed.

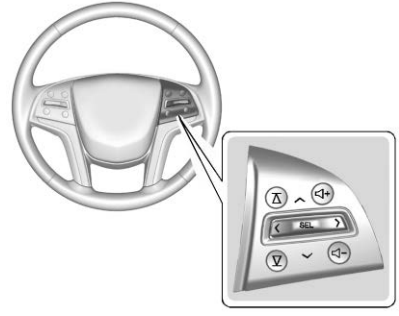
**SET– :** Press the control down briefly to set the speed and activate cruise control. If the cruise control is already active, use to decrease vehicle speed.

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

See *Cruise Control* ⇨ *222* or *Adaptive Cruise Control* ⇨ *225* (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)* ⇨ *145*.

## Forward Collision Alert (FCA) System

If equipped, FCA may help avoid or reduce the harm caused by front-end crashes. FCA provides a green indicator, , when a vehicle is detected ahead. This indicator displays amber if you follow a vehicle too closely. When approaching a vehicle ahead too quickly, FCA provides a flashing red alert on the windshield and rapidly beeps or pulses the driver seat.

See *Forward Collision Alert (FCA) System* ⇨ *240*.

## Forward Automatic Braking (FAB)

If the vehicle has Forward Collision Alert (FCA), it also has FAB, which includes Intelligent Brake Assist (IBA). When the system detects a vehicle ahead in your path that is traveling in the same direction that you may be about to crash into, it can provide a boost to braking or automatically brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear.

See *Forward Automatic Braking (FAB)* ⇨ *242*.

## Lane Keep Assist (LKA)

If equipped, LKA may help avoid crashes due to unintentional lane departures. It may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking without using a turn signal in that direction. It may also provide a Lane Departure Warning (LDW) alert as the lane marking is crossed. The system will not assist or alert if it detects that you are actively steering. Override LKA by turning the steering wheel. LKA uses a camera to detect lane markings between 60 km/h (37 mph) and 180 km/h (112 mph).

See *Lane Departure Warning (LDW)* ⇨ *246* and *Lane Keep Assist (LKA)* ⇨ *246*.

## Lane Change Alert (LCA)

If equipped, the LCA system is a lane-changing aid that assists drivers with avoiding lane change crashes that occur with moving vehicles in the side blind zone (or spot) areas or with vehicles rapidly approaching these areas from behind. The LCA warning display will light up in the corresponding outside mirror and will flash if the turn signal is on. The Side Blind Zone Alert (SBZA) system is included as part of the LCA system.

See *Side Blind Zone Alert (SBZA)* ⇨ *244* and *Lane Change Alert (LCA)* ⇨ *244*.

## Surround Vision

If equipped, views around the vehicle appear in the infotainment display to aid with parking and low-speed maneuvers.

See “Surround Vision” under *Assistance Systems for Parking or Backing* ⇨ *233*.

### Front Vision Camera

If equipped, a view of the area in front of the vehicle appears on the infotainment display to aid with parking and low-speed maneuvers.

See “Front Vision Camera” under *Assistance Systems for Parking or Backing* ⇨ *233*.

## Rear Vision Camera (RVC)

If equipped, RVC shows a view of the area behind the vehicle on the infotainment display when the vehicle is shifted into R (Reverse) to aid with parking and low-speed backing maneuvers.

See *Assistance Systems for Parking or Backing* ⇨ *233*.

## Rear Cross Traffic Alert (RCTA) System

If equipped, the RCTA system shows a triangle with an arrow on the infotainment display to warn of traffic behind your vehicle that may cross your vehicle's path while in R (Reverse). In addition, beeps will sound, or the driver seat will pulse.

See *Assistance Systems for Parking or Backing* ⇨ *233*.

## Parking Assist

If equipped, Front and Rear Parking Assist (FRPA) uses sensors on the front and rear bumpers to assist with parking and avoiding objects during low speed parking maneuvers.
It operates at speeds less than 8 km/h (5 mph). FRPA 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 seat pulses may occur if very close to an object.

The vehicle may also have a higher speed Backing Warning System and the Reverse Automatic Braking system.

See *Driver Assistance Systems* ⇨ *233*.

## Automatic Parking Assist (APA)

If equipped, the APA system helps to search for and maneuver the vehicle into parallel or perpendicular parking spots using automatic steering, displays, and beeps. When the vehicle speed is below 30 km/h (18 mph), touch P to enable the system.

See “Automatic Parking Assist (APA)” under *Assistance Systems for Parking or Backing* ⇨ *233*.

## Reverse Automatic Braking (RAB)

If the vehicle has Adaptive Cruise Control (ACC) it also has the RAB system, which is designed to help avoid or reduce the harm caused by backing crashes when the vehicle is shifted into R (Reverse). If the system

detects the vehicle is backing too fast to avoid a crash with a detected object behind your vehicle in your path, it may automatically brake hard to a stop.

See *Assistance Systems for Parking or Backing* ⇨ *233*.

## Power Outlets

### Power Outlets 12 Volt Direct Current

Accessory power outlets can be used to plug in electrical equipment, such as a cell phone, MP3 player, etc.

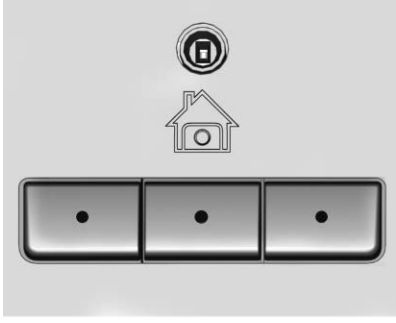
The vehicle has five accessory power outlets:

- One near the cupholders on the center console
- One inside the center console
- One on the rear of the center console
- One in the third row seat on the driver side
- One in the rear cargo area on the passenger side

Lift the cover to access and replace when not in use.

See *Power Outlets* ⇨ *125*.

## Universal Remote System

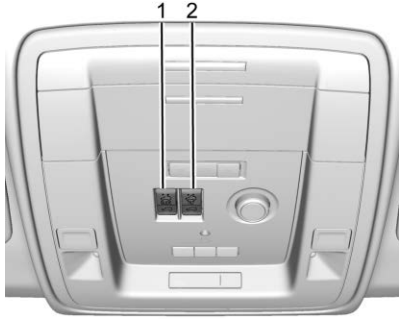


If equipped with the Universal Remote system, these buttons will be in the front overhead console.

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.

See *Universal Remote System* ⇨ *160*.

## Sunroof




1. SLIDE Switch
2. TILT Switch

If equipped, the sunroof only operates when the ignition is on or in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* ⇨ *203*.

### Slide Switch

**Express-Open/Express-Close :** To express-open the sunroof, fully press and release SLIDE (1). Press the switch again to stop the movement. To

express-close the sunroof, fully press and release (1). Press the switch again to stop the movement.

**Open/Close (Manual Mode) :** To open the sunroof, press and hold SLIDE (1). Release the switch to stop the movement. Press and hold (1) to close the sunroof. Release the switch to stop the movement.

### Tilt Switch

**Vent :** From the closed position, press TILT (2) to vent the sunroof. Press (2) to close the sunroof vent.

When the sunroof is opened, an air deflector will automatically raise. The air deflector will retract when the sunroof is closed.

The sunroof also has a sunshade which can be pulled forward to block sun rays. The sunshade must be opened and closed manually.

If an object is in the path of the sunroof while it is closing, the automatic reversal feature will detect the object and stop the sunroof.

See *Sunroof* ⇨ *56*.

# Performance and Maintenance

## Traction Control/Electronic Stability Control

The vehicle has a Traction Control System (TCS) that limits wheel spin and the StabiliTrak system that assists with directional control of the vehicle in difficult driving conditions. Both systems come on automatically when the vehicle is started and begins to move.

- To turn off TCS, press and release OFF on the center stack. The traction off light displays in the instrument cluster. The appropriate Driver Information Center (DIC) message displays.
- To turn off both TCS and StabiliTrak, press and hold OFF until and OFF illuminate in the instrument cluster and the appropriate DIC message displays.
- Press and release OFF again to turn on both systems.

StabiliTrak will automatically turn on if the vehicle exceeds 56 km/h (35 mph). Traction control will remain off.

See *Traction Control/Electronic Stability Control* ⇨ *218*.

## 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* ⇨ *193*. 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* ⇨ *307*.

### Tire Fill Alert (If Equipped)

This feature provides visual and audible alerts outside the vehicle to help when inflating an underinflated tire to the recommended cold tire pressure. See "Tire Fill Alert (If Equipped)" under *Tire Pressure Monitor Operation* ⇨ *308*.

## Fuel

### Premium Recommended Fuel

Use premium 93 octane unleaded gasoline in your vehicle. Unleaded gasoline with an octane rating as low as 87 may be used, but it will reduce performance and fuel economy. See *Fuel* ⇨ *248*.

## E85 or FlexFuel

### No E85 or FlexFuel

Gasoline-ethanol fuel blends greater than E15 (15% ethanol by volume), such as E85, cannot be used in this vehicle.

## 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 OIL LIFE on the DIC. See *Driver Information Center (DIC)* ⇨ *145*. When remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display.
2. Press and hold SEL on the DIC controls 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. Display OIL LIFE on the DIC. See *Driver Information Center (DIC)* ⇨ *145*.
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* ⇨ *270*.

## 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 Cadillac owners are automatically enrolled in the Roadside Service Program.

See *Roadside Service* ⇨ *366*.

# Keys, Doors, and Windows


## Keys and Locks

Keys ..... 28
Remote Keyless Entry (RKE) System ..... 29
Remote Keyless Entry (RKE) System Operation ..... 29
Remote Vehicle Start ..... 36
Door Locks ..... 37
Power Door Locks ..... 39
Delayed Locking ..... 39
Automatic Door Locks ..... 39
Lockout Protection ..... 40
Safety Locks ..... 40

## Doors

Liftgate ..... 41
Power Assist Steps ..... 45

## Vehicle Security

Vehicle Security ..... 46
Vehicle Alarm System ..... 46
Immobilizer ..... 48
Immobilizer Operation ..... 48

## Exterior Mirrors

Convex Mirrors ..... 49
Power Mirrors ..... 50
Folding Mirrors ..... 50
Heated Mirrors ..... 51
Reverse Tilt Mirrors ..... 51

## Interior Mirrors

Interior Rearview Mirrors ..... 51
Automatic Dimming Rearview Mirror ..... 51
Rear Camera Mirror ..... 52
Child-View Mirror ..... 53

## Windows

Windows ..... 54
Power Windows ..... 54
Sun Visors ..... 56

## Roof

Sunroof ..... 56


# 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.

The key is used for the driver door.

The transmitter has a button on the side used to remove the key. Do not pull the key out without pressing the button.

See your dealer if a replacement key or additional key is needed.

If locked out of the vehicle, see *Roadside Service* ⇨ *366*.

With an active OnStar service plan, an OnStar Advisor may remotely unlock the vehicle. See *OnStar Overview* ⇨ *376*.

## Remote Keyless Entry (RKE) System

See *Radio Frequency Statement* ⇨ *372*.

If there is a decrease in the Remote Keyless Entry (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 Keyless Access system allows for vehicle entry when the transmitter is within 1 m (3 ft). See “Keyless Access Operation” later in this section.

The RKE transmitter functions may work up to 60 m (197 ft) away from the vehicle.

Other conditions can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System* ⇨ *29*.

: If equipped, press and release , then immediately press and hold until the turn signals flash or for at least four seconds. The engine may be started from outside the vehicle using the RKE transmitter. See *Remote Vehicle Start* ⇨ *36*.

: Press to lock all doors.

If enabled, the turn signal lamps flash once on the second press to indicate locking has occurred. If enabled, the horn chirps when is pressed again within three seconds. See *Vehicle Personalization* ⇨ *152*.

If the driver door is open when is pressed, all door will lock and then the driver door will immediately unlock, if enabled. See *Vehicle Personalization* ⇨ *152*. If the passenger door is open when is pressed, all doors lock.

If the passenger door is open when is pressed, all doors lock.

Pressing arms the alarm system. See *Vehicle Alarm System* ⇨ *46*.

If equipped with auto mirror folding, pressing and holding for one second will fold the mirrors, if enabled. See *Vehicle Personalization* ⇨ *152*.

: Press once to unlock only the driver door. If is pressed again within three seconds, all remaining doors unlock. The interior lamps may come on and stay on for 20 seconds or until the ignition is turned on.

If enabled, the turn signal lamps flash twice to indicate unlocking has occurred. If enabled, the exterior lamps may turn on. See *Vehicle Personalization* ⇨ *152*.

Pressing on the RKE transmitter disarms the alarm system. See *Vehicle Alarm System* ⇨ *46*.

If equipped with auto mirror folding, pressing and holding for one second will unfold the mirrors, if enabled. See *Vehicle Personalization* ⇨ *152*.

Press and hold until the windows fully open, if remote window operation is emabled. See *Vehicle Personalization* ⇨ *152*.

x2 : Press twice to open the liftglass.

x2 : Press twice to open or close the liftgate. Press once to stop the liftgate from moving.

: Press and release to initiate vehicle locator. The turn signal lamps flash and the horn sounds three times.

Press and hold for more than three seconds to activate the panic alarm. The turn signal lamps flash and the horn sounds repeatedly for 30 seconds. The alarm turns off when the ignition is turned on or is pressed again. The ignition must be off for the panic alarm to work.

## Keyless Access Operation

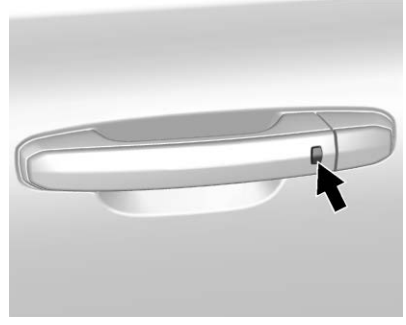
The Keyless Access system allows for the doors and liftgate to be accessed without pressing the RKE transmitter button. The RKE transmitter must be within 1 m (3 ft) of the liftgate or door being opened. If the vehicle has this feature, there will be a button on the outside door handles.

Keyless Access can be programmed to unlock all doors on the first lock/unlock press from the driver door. See *Vehicle Personalization* ⇨ *152*.

If equipped with memory seats, RKE transmitters 1 and 2 are linked to seating positions of memory 1 or 2. See *Memory Seats* ⇨ *63*.

### Keyless Unlocking/Locking from the Driver Door

When the doors are locked and the RKE transmitter is within 1 m (3 ft) 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 and the liftgate 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 1 m (3 ft) 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

Keyless Access will lock the vehicle several seconds after all doors are closed, if the vehicle is off and at least one RKE transmitter has been removed from the interior, or none remain in the interior.

If other electronic devices interfere with the RKE transmitter signal, the vehicle may not detect the RKE transmitter inside the vehicle.
If passive locking is enabled, the doors may lock with the RKE transmitter inside the vehicle. Do not leave the RKE transmitter in an unattended vehicle.

To customize the doors to automatically lock when exiting the vehicle, see “Remote Lock, Unlock, Start” under *Vehicle Personalization* ⇨ *152*.

### Temporarily Disable of Passive Locking Feature

Temporarily disable passive locking by pressing and holding 🔓 on the interior door switch with a door open for at least four seconds, or until three chimes are heard. Passive locking will then remain disabled until 🔒 on the interior door is pressed, or until the vehicle is turned on.

### Remote Left In Vehicle Alert

When the vehicle is turned off and an RKE transmitter is left in the vehicle, the horn will chirp three times after all doors are closed. To turn on or off see *Vehicle Personalization* ⇨ *152*.

### Remote No Longer in Vehicle Alert

If the vehicle is on, with a door open, and then all doors are closed, the vehicle will check for RKE transmitters inside. If an RKE transmitter is not detected, the DIC will display NO REMOTE DETECTED and the horn will chirp three times. This occurs only once each time the vehicle is driven. To turn on or off see *Vehicle Personalization* ⇨ *152*.

### Keyless Liftgate Opening

Press the touch pad on the rear of the liftgate above the license plate to open the liftgate when all doors are unlocked or when the transmitter is within 1 m (3 ft).

### Keyless Liftglass Opening

Press the exterior liftglass button to open the liftglass when all doors are unlocked or when the transmitter is within 1 m (3 ft).

### Key Access

To access a vehicle with a dead transmitter battery, see *Door Locks* ⇨ *37*.

## 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.

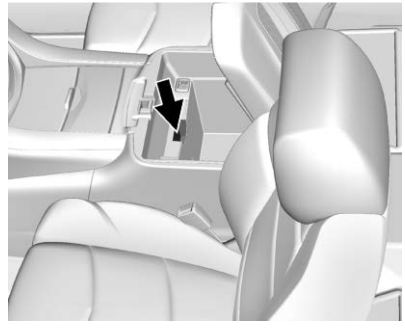
### Programming with Recognized Transmitters

A new transmitter can be programmed to the vehicle when there are two recognized transmitters.

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

1. Remove the key from the recognized transmitter.
2. Place the two recognized transmitters in the cupholder or on the passenger seat.
3. Remove the key lock cylinder cap on the driver door handle. See *Door Locks* ⇨ *37*. 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 FOR REMOTE #2, 3, 4, ETC.



4. Open the center console storage area and the storage tray.
5. Place the new transmitter in the transmitter pocket/insert, in front of the center console storage area.
6. Press ENGINE START/STOP. When the transmitter is learned, the DIC display will show that it is ready to program the next transmitter.
7. Remove the transmitter from the transmitter pocket/insert and press 🔓 or 🔒 on the transmitter.

   To program additional transmitters, repeat Steps 4–7.

   When all additional transmitters are programmed, press and hold ENGINE START/STOP for approximately 12 seconds to exit programming mode.
8. Put the key back into the transmitter.

### Programming without Recognized Transmitters

If two currently recognized transmitters are not available, follow this procedure to program up to eight transmitters. This feature is not

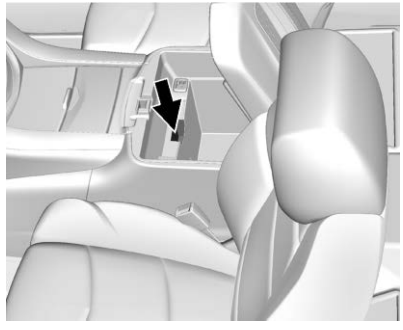
available in Canada. This procedure will take approximately 30 minutes to complete. The vehicle must be off and all transmitters to be programmed must be with you.

1. Remove the vehicle key from the transmitter.
2. Remove the key lock cylinder cap on the driver door handle. See *Door Locks* ⇨ *37*. 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.
3. Wait for 10 minutes until the DIC displays PRESS ENGINE START BUTTON TO LEARN, then press ENGINE START/STOP.

   The DIC display will again show REMOTE LEARN PENDING, PLEASE WAIT.
4. Repeat Step 3 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.



5. Place the new transmitter in the transmitter pocket/insert, in front of the center console storage area. The storage area will need to be opened to access the transmitter pocket/insert.
6. Press ENGINE START/STOP. When the transmitter is learned, the DIC display will show that it is ready to program the next transmitter.
7. Remove the transmitter from the transmitter pocket/insert and press 🔓 or 🔒 on the transmitter.

   To program additional transmitters, repeat Steps 5–7.

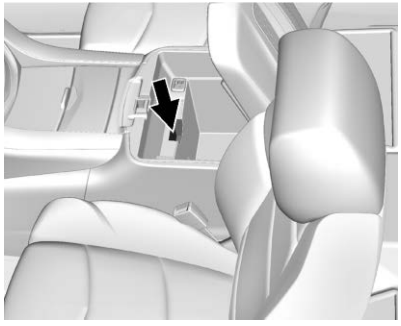
   When all additional transmitters are programmed, press and hold ENGINE START/STOP for approximately 12 seconds to exit programming mode.
8. Return the key back into the transmitter.

## 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 NO REMOTE DETECTED or NO REMOTE KEY WAS DETECTED PLACE KEY IN TRANSMITTER POCKET THEN START YOUR VEHICLE when starting the vehicle.

To start the vehicle:

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



2. Place the transmitter in the transmitter pocket/insert.
3. With the vehicle in P (Park) or N (Neutral) press the brake pedal and ENGINE START/STOP.

   Replace the transmitter battery as soon as possible.

## Battery Replacement

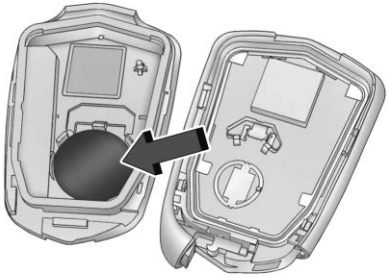
**Caution**

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 on the side of the transmitter near the bottom and pull the key out.

2. Separate the two halves of the transmitter using a flat tool inserted into the bottom center of the transmitter. Do not use the key slot.



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 front and back housing then snap the transmitter together.

## Remote Vehicle Start

The climate control system will come on when the vehicle is started remotely depending on the outside temperature.

The rear defog and heated and cooled seats, if equipped, may also come on. See *Heated and Cooled Front Seats* ⇨ *67* and *Vehicle Personalization* ⇨ *152*.

Laws in some communities may restrict the use of remote starters. Check local regulations for any requirements on remote starting of vehicles.

Do not use remote start if the vehicle is low on fuel.

The vehicle cannot be remote started if:

- The transmitter is in the vehicle.
- The hood is not closed.
- There is an emission control system malfunction and the malfunction indicator lamp is on.

The engine will turn off during a remote vehicle start if:

- The coolant temperature gets too high.
- The oil pressure gets low.

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* ⇨ *29* or *Vehicle Personalization* ⇨ *152*.

### Starting the Engine Using Remote Start

1. Press and release 🔒.
2. Immediately press and hold ⟲ until the turn signal lamps flash or for at least four seconds.

   When the vehicle starts, the parking lamps will turn on. The doors will be locked and the climate control system may come on.

   The engine will continue to run for 10 minutes. Repeat Steps 1 and 2 for one 10-minute time extension.

Turn the ignition on to operate the vehicle.

### Extending Engine Run Time

The engine run time can be extended by 10 minutes, for a total of 20 minutes, if during the first 10 minutes Steps 1 and 2 are repeated while the engine is still running. An extension can be requested 30 seconds after starting.

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

The vehicle's ignition must be turned on and then back off to use remote start again.

### Canceling a Remote Start

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

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

## Door Locks

**Warning**

Unlocked doors can be dangerous.

- Passengers, especially children, can easily open the doors and fall out of a moving vehicle. The doors can be unlocked and opened while the vehicle is moving. 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 seat 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 injuries or even death from heat stroke. Always lock the vehicle whenever leaving it.

(Continued)

**Warning (Continued)**

- 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.

To lock or unlock the doors from inside the vehicle:

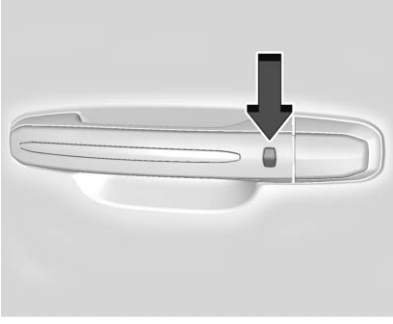
- Press or on a power door lock switch.
- Push down the manual lock knob on the driver door to lock all doors. Push down the lock knob on a passenger door to lock that door only.
- Pull the door handle once to unlock that door. Pull the handle again to unlatch it.

To lock or unlock the doors from outside the vehicle:

- Press or on the RKE transmitter

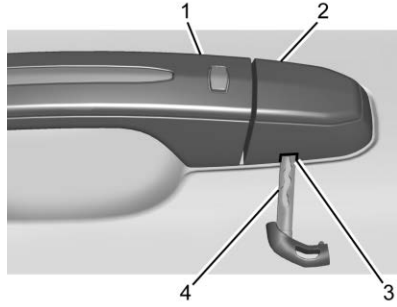
- Use the key in the front doors. The key cylinder is covered by a cap. See “Driver Door Key Lock Cylinder Access” later in this section.

### Keyless Access



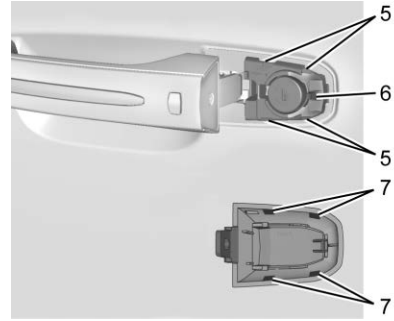
The RKE transmitter must be within 1 m (3 ft) of the liftgate or door being opened. Press the button on the door handle to open. See “Keyless Access Operation” in *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

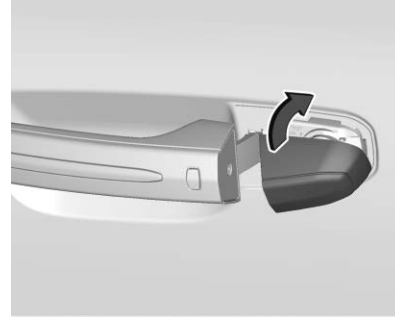
### Driver Door Key Lock Cylinder Access (Slotted Cap Access) (In Case of Dead Battery)




To access the driver door key lock cylinder:

1. Pull the door handle (1) to the open position and hold it open until cap installation is complete.
2. Insert the key (4) into the slot (3) on the bottom of the cap (2) and lift the key upward.
3. Remove the cap (2).
4. Use the key (4) in the cylinder.



To replace the slotted cap:

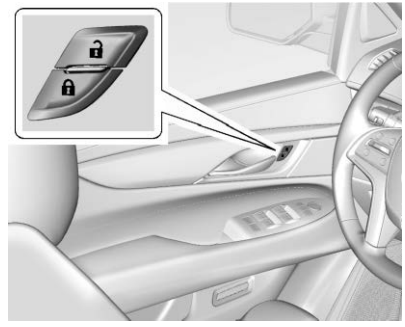
1. Position the bottom edge of the cap under the lower edge of the metal piece (6). The tabs (7) attach to metal piece (6) at the positions (5).
2. Rotate the cap upward to install into place.
3. Check that the cap is secure.
4. Release the door handle.

### Free-Turning Locks

The door key lock cylinder turns freely when either the wrong key is used, or the correct key is not fully inserted. The free turning door lock feature prevents the lock from being forced open. To reset the lock, turn it to the vertical position with the correct key fully inserted. Remove the key and insert it again. If this does not reset the lock, turn the key halfway around in the cylinder and repeat the reset procedure.

## Power Door Locks

Press 🔒 or 🔓 on the Remote Keyless Entry (RKE) transmitter. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.



🔒 **:** Press to lock the doors.

🔓 **:** Press to unlock the doors.

## Delayed Locking

This feature delays the locking of the doors until five seconds after all doors are closed.

Delayed locking can only be turned on when the Unlocked Door Anti-Lockout feature has been turned off.

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

The doors will lock automatically five seconds after all doors are closed. If a door is reopened before that time, the five-second timer will reset when all doors are closed again.

Press 🔒 on the door lock switch again or press 🔒 on the RKE transmitter to lock doors immediately.

This feature can also be programmed. See *Vehicle Personalization* ⇨ *152*.

## Automatic Door Locks

The doors will lock automatically when all doors are closed, the ignition is on, and the vehicle is shifted out of P (Park).

If a vehicle door is unlocked and then opened and closed, the doors will lock either when your foot is removed from the brake or the vehicle speed becomes faster than 13 km/h (8 mph).

To unlock the doors:

- Press on the power door lock switch.
- Shift the transmission into P (Park).

Automatic door locking cannot be disabled. Automatic door unlocking can be programmed. See *Vehicle Personalization* ⇨ *152*.

## Lockout Protection

If the ignition is on or in ACC/ACCESSORY 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 and locking is requested while a door is open, when all doors are closed the vehicle will check for RKE transmitters inside. If an RKE transmitter is detected and the number of RKE transmitters inside has not reduced, the driver door will unlock and the horn will chirp three times.

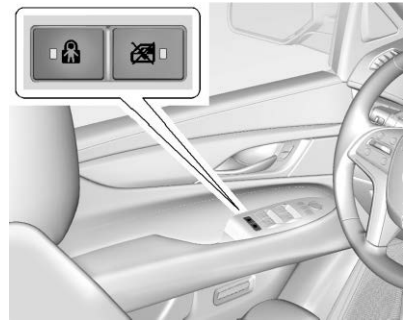
Lockout Protection can be manually overridden with the driver door open by pressing and holding on the power door lock switch.

### Unlocked Door Anti-Lockout

If Unlocked Door Anti-Lockout is turned on and the vehicle is off, the driver door is open, and locking is requested, all the doors will lock and the driver door will remain open. Press the button again to lock the driver door. The Unlocked Door Anti-Lockout feature can be turned on or off. See*Vehicle Personalization* ⇨ *152*.

## 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 comes on when activated.

Press again to deactivate the safety locks.

# Doors

## Liftgate

**⚠ 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.
- Adjust the climate control system to a setting that brings in only outside air and

(Continued)

**Warning (Continued)**

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* ⇨ *205*.

**Caution**

To avoid damage to the liftgate or liftgate glass, make sure the area above and behind the liftgate is clear before opening it.

### Power Liftgate Operation

**⚠ Warning**

You or others could be injured if caught in the path of the power liftgate. Make sure there is no one in the way of the liftgate as it is opening and closing.

**Caution**

Driving with an open and unsecured liftgate may result in damage to the power liftgate components.

The switch is on the overhead console. The vehicle must be in P (Park).

The modes are:

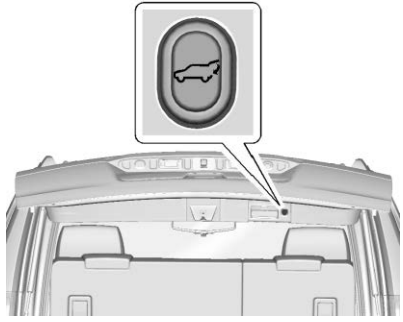
**MAX :** Opens to maximum height.

**3/4 :** Opens to a reduced height that can be set from 3/4 to fully open. Use to prevent the liftgate from opening into overhead objects such as a garage door or roof-mounted cargo. The liftgate can be opened all the way manually.

**OFF :** Opens manually only.

To open or close the liftgate, select MAX or 3/4 mode and then:

- Press x2 twice quickly on the RKE transmitter until the liftgate moves.
- Press on the overhead console. The driver door must be unlocked.
- Press the touch pad on the underside of the liftgate handle after unlocking all doors. A locked vehicle can be opened if the RKE transmitter is within 1 m (3 ft) of the touch pad.



- Press on the bottom edge of the liftgate next to the latch to close.

Press any liftgate button, the touch pad, or x2 on the RKE transmitter while the liftgate is moving to stop it. Pressing any liftgate button or pressing x2 twice quickly on the RKE transmitter restarts the operation in the reverse direction. Pressing the touch pad on the liftgate handle will restart the motion, but only in the opening direction.

**Caution**

Manually forcing the liftgate to open or close during a power cycle can damage the vehicle. Allow the power cycle to complete.

The power liftgate may be temporarily disabled in extremely low temperatures, or after repeated power cycling over a short period of time. If this occurs, the liftgate can still be operated manually. Select OFF on the liftgate switch.

If the vehicle is shifted out of P (Park) while the power function is in progress, the liftgate will continue to

completion. If the vehicle is accelerated before the liftgate has completed moving, the liftgate may stop or reverse direction. Check for Driver Information Center (DIC) messages and make sure the liftgate is closed and latched before driving.

### Falling Liftgate Detection

If the power liftgate automatically closes after a power opening cycle, it indicates that the system is reacting to excess weight on the liftgate or a possible support strut failure. Remove any excess weight. If the liftgate continues to automatically close after opening, see your dealer for service before using the power liftgate.

Interfering with the power liftgate motion or manually closing the liftgate too quickly after power opening may resemble a support strut failure. This could also activate the falling liftgate detection feature. Allow the liftgate to complete its operation and wait a few seconds before manually closing the liftgate.

## Obstacle Detection Features

If the liftgate encounters an obstacle during a power open or close cycle, the liftgate will automatically reverse direction and move a short distance away from the obstacle. After removing the obstruction, the power liftgate operation can be used again. If the liftgate encounters multiple obstacles on the same power cycle, the power function will deactivate. After removing the obstructions, manually close the liftgate. This will allow normal power operation functions to resume.

If the vehicle is locked while the liftgate is closing, and an obstacle prevents the liftgate from completely closing, the horn will sound as an alert that the liftgate did not close.

Pinch sensors are on the side edges of the liftgate. If an object is caught between the liftgate and the vehicle and presses against a sensor, the liftgate will reverse direction and stop at a partially open position. The liftgate will remain open until it is activated again or closed manually.

## Setting the 3/4 Mode

To change the position the liftgate stops at when opening:

1. Select MAX or 3/4 mode and open the liftgate.
2. Stop the liftgate movement at the desired height by pressing any liftgate button. Manually adjust the liftgate position if needed.
3. Press and hold on the bottom edge of the liftgate next to the latch on the outside of the liftgate until the turn signals flash and a beep sounds. This indicates the setting has been recorded.

The liftgate cannot be set below a minimum programmable height. If there is no light flash or sound, then the height adjustment may be too low.

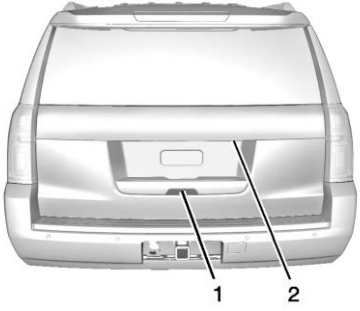
## Manual Operation

Select OFF to manually operate the liftgate.

**Caution**

Attempting to move the liftgate too quickly and with excessive force may result in damage to the vehicle.

Operate the liftgate manually with a smooth motion and moderate speed. The system includes a feature which limits the manual closing speed to protect the components.




To open the liftgate, press on the power door lock switch or press on the RKE transmitter twice to unlock all doors. Press the touch pad (1) on the underside of the liftgate handle and lift up.

Press the button (2) above the license plate to open the liftglass, or press x2 twice quickly on the RKE transmitter. Do not leave the liftglass open when raising the liftgate.

There will be a delay in the release of the liftglass if there is an attempt to open it while the rear wiper is in motion.

Use the pull cup to lower and close the liftgate. Do not press the touch pad while closing the liftgate. This will cause the liftgate to be unlatched.

The RKE transmitter must be within 1 m (3 ft) of the liftgate to automatically unlock it. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

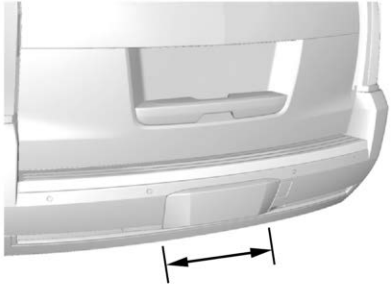
The liftgate has an electric latch. If the battery is disconnected or has low voltage, the liftgate will not open. The liftgate will resume operation when the battery is reconnected and charged.

## Hands-Free Operation

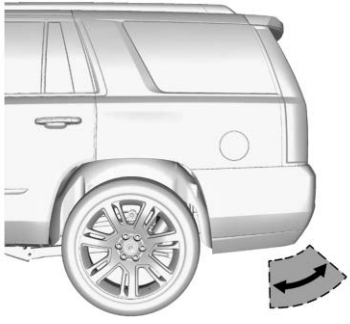
The liftgate may be operated with a kicking motion under the rear bumper.

The liftgate will not operate if the RKE transmitter is not within 1 m (3 ft).

The hands-free feature will not work while the liftgate is moving. To stop the liftgate while in motion use one of the liftgate switches.



Length of Kick Zone



To operate, move your foot in a forward kicking motion under the center of the rear bumper, then pull it back.

**Caution**

Splashing water may cause the liftgate to open. Keep the RKE transmitter away from the rear bumper detection area or turn the liftgate mode to OFF when cleaning or working near the rear bumper to avoid accidental opening.

- Do not sweep your foot side to side.
- Do not keep your foot under the bumper; the liftgate will not activate.
- Do not touch the liftgate until it has stopped moving.
- This feature may be temporarily disabled under some conditions. If the liftgate does not respond to the kick, open or close the liftgate by another method or start the vehicle. The feature will be re-enabled.

When closing the liftgate using this feature, there will be a short delay. The rear lights will flash and a chime will sound. Step away from the liftgate before it starts moving.

## Power Assist Steps

**⚠ Warning**

Never place hands or other body parts between the deployed power assist steps and the vehicle. You or others could be seriously injured.

**⚠ Warning**

Never step on a moving assist step. You or others could be seriously injured.

Disable the assist steps before jacking or placing any object under the vehicle.

Too much ice buildup may prevent deployment of the power assist steps. Check the step position before exiting the vehicle. If this happens, disable the power assist steps, clear the ice, then enable the assist steps and confirm normal function prior to use.

Keep hands, children, pets, objects, and clothing clear of the power assist steps when in motion. The steps will reverse direction if they encounter an obstruction when opening or closing. Remove the obstruction, then open and close the door on the same side to complete the motion of the assist steps. If the obstruction is not cleared, the assist steps remain extended while driving.

To change the settings:

1. Touch ⌂.
2. Touch Running Boards icon.

The options are:

**OFF :** Disables the power assist steps, so they will not deploy.

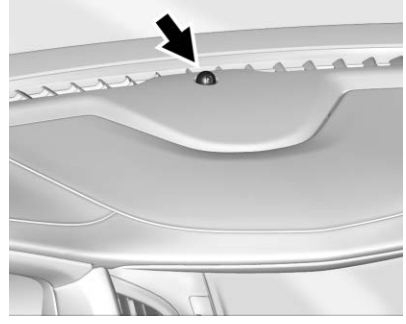
**ON :** Power assist steps will deploy when a door is opened. When a door is closed the assist steps will automatically retract after three seconds.

**Extended :** Keeps the steps deployed when the vehicle is in P (Park) or N (Neutral). This setting may be used when cleaning the steps.

# Vehicle Security

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

## Vehicle Alarm System



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

**Off :** Alarm system is disarmed.

**On Solid :** Vehicle is secured during the delay to arm the system.

**Fast Flash :** Vehicle is unsecured. A door, the liftgate or the hood is open.

**Slow Flash :** Alarm system is armed.

## Arming the Alarm System

1. Turn off the vehicle.
2. Lock the vehicle in one of three ways:
   - Use the RKE transmitter.
   - Use the Keyless Access system.
   - With a door open, press 🔓 on the interior of the door.
3. After 30 seconds, the alarm system will arm and the indicator light will begin to slowly flash. Pressing 🔓 on the RKE transmitter a second time will bypass the 30-second delay and immediately arm the alarm system.

The vehicle alarm system will not arm if the doors are locked with the key.

If the driver door is opened without first unlocking with the RKE transmitter, the horn will chirp and the lights will flash to indicate pre-alarm. If the vehicle is not started, or the door is not unlocked by pressing 🔓 on the RKE transmitter during the 10-second pre-alarm, the alarm will be activated.

The alarm will also be activated if a passenger door, the liftgate, or the hood is opened without first disarming the system. When the alarm is activated, the turn signals flash and the horn sounds for about 30 seconds. The alarm system will then re-arm to monitor for the next unauthorized event.

## Disarming the Alarm System

To disarm the alarm system or turn off the alarm if it has been activated:

- Press 🔓 on the RKE transmitter.
- Unlock the vehicle using the Keyless Access system.
- Start the vehicle.

To avoid setting off the alarm by accident:

- Lock the vehicle after all occupants have exited.
- Always unlock a door with the RKE transmitter, or use the Keyless Access system.

  Unlocking the driver door with the key will not disarm the system or turn off the alarm.

## How to Detect a Tamper Condition

If 🔓 is pressed on the RKE transmitter and the horn chirps three times, an alarm occurred previously while the alarm system was armed.

If the alarm has been activated, a message will appear on the DIC.

## Power Sounder, Inclination Sensor and Intrusion Sensor

In addition to the standard theft-deterrent system features, this system may also have a power sounder, inclination sensor and intrusion sensor.

The power sounder provides an audible alarm which is distinct from the vehicle's horn. It has its own power source, and can sound an alarm if the vehicle's battery is compromised.

The inclination sensor can set off the alarm if it senses movement of the vehicle, such as a change in vehicle orientation.

The intrusion sensor monitors the vehicle interior, and can activate the alarm if it senses unauthorized entry into the vehicle's interior. Do not allow passengers or pets to remain in the vehicle when the intrusion sensor is activated.

Before arming the theft-deterrent system and activating the intrusion sensor:

- Make sure all doors and windows are completely closed.
- Secure any loose items such as sunshades.
- Make sure there are no obstructions blocking the sensors in the front overhead console.
- Close DVD screens before leaving the vehicle.

### Inclination and Intrusion Sensors Disable Switch

It is recommended that the intrusion and inclination sensors be deactivated if pets are left in the vehicle or the vehicle is being transported.

With the vehicle turned off, press in the front overhead console. The indicator light will come on momentarily, indicating that these sensors have been disabled for the next alarm system arming cycle.

## Immobilizer

See *Radio Frequency Statement* ⇨ *372*.

## 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 ignition is on and a valid transmitter is found 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 transmitters matched to an immobilizer control unit in the vehicle. Only a correctly matched transmitter will start the vehicle. If the transmitter is ever damaged, you may not be able to start the vehicle.

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

If the RKE transmitter appears to be undamaged, try another transmitter or place the transmitter in the transmitter pocket/insert next to the center console storage area between the driver and front passenger seats. See “Starting the Vehicle with a Low Transmitter Battery” under *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

If the engine does not start with the other transmitter or when the transmitter is in the pocket/insert, the vehicle needs service. See your dealer who can service the theft-deterrent system and have a new transmitter programmed to the vehicle.

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

# Exterior Mirrors

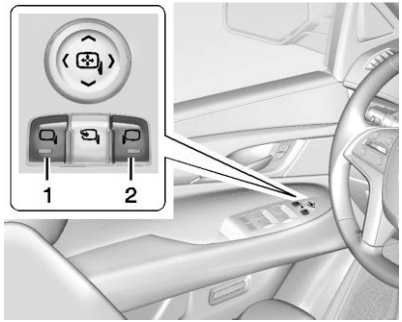
## Convex Mirrors

**⚠ Warning**

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




To adjust the mirrors:

1. Press (1) or (2) to select the driver or passenger side mirror. The indicator light comes on.
2. Press the arrows on the control pad to move the mirror up, down, right, or left.
3. Adjust the outside mirror so that the side of the vehicle and the area behind are seen.
4. Press either (1) or (2) again to deselect the mirror. The indicator light goes off.

### Exterior Automatic Dimming Mirror

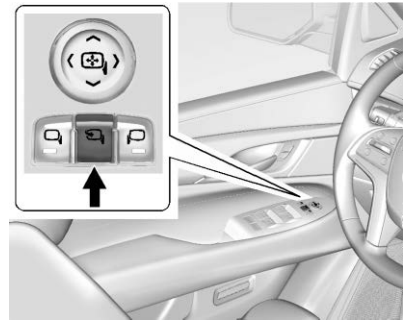
If equipped, the driver outside mirror automatically adjusts for the glare of headlamps behind. This feature comes on when the vehicle is started. See *Automatic Dimming Rearview Mirror* ⇨ *51*.

### Turn Signal Indicator

The vehicle may have a turn signal indicator on the mirrors that flashes in the direction of the turn or lane change.

## Folding Mirrors

### Power Folding



1. Press to fold the mirrors inward.
2. Press again to return the mirrors to the driving position.

#### Resetting the Power Folding Mirrors

Reset the power folding mirrors if:

- The mirrors are accidentally obstructed while folding.
- They are accidentally manually folded/unfolded.

- The mirrors will not stay in the unfolded position.
- The mirrors vibrate at normal driving speeds.

Fold and unfold the mirrors one time using the mirror controls to reset them to their normal position.
A popping noise may be heard during the resetting of the power folding mirrors. This sound is normal after a manual folding operation.

### Auto Mirror Folding

If equipped, with the ignition off, press and hold 🔒 on the RKE transmitter for approximately one second to automatically fold the exterior mirrors. Press and hold 🔓 on the RKE transmitter for approximately one second to unfold. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

This feature is turned on or off through vehicle personalization. See *Vehicle Personalization* ⇨ *152*.

## Heated Mirrors

REAR : Press to heat the outside mirrors.

See “Rear Window Defogger” under *Dual Automatic Climate Control System* ⇨ *173*.

## Reverse Tilt Mirrors

If equipped with memory seats, the passenger and/or driver mirror tilts to a preselected position when the vehicle is in R (Reverse). This allows the curb to be seen when parallel parking.

The mirror(s) return to the original position when:

- The vehicle is shifted out of R (Reverse), or remains in R (Reverse) for about 30 seconds.
- The ignition is turned off.
- The vehicle is driven in R (Reverse) above a set speed.

To turn this feature on or off, see *Vehicle Personalization* ⇨ *152*.

# Interior Mirrors

## Interior Rearview Mirrors

Adjust the rearview mirror for a clear view of the area behind your vehicle.

If equipped with OnStar, there may be three buttons at the bottom of the mirror. See your dealer for more information on the system and how to subscribe to OnStar. See *OnStar Overview* ⇨ *376*.

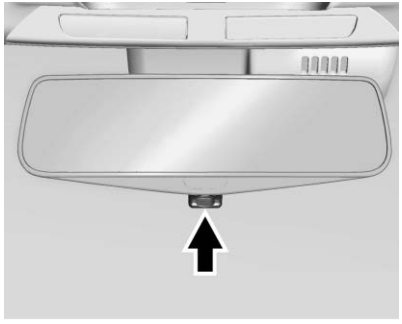
To avoid accidental OnStar calls, clean the mirror with the ignition off. Do not spray glass cleaner directly on the mirror. Use a soft towel dampened with water.

## Automatic Dimming Rearview Mirror

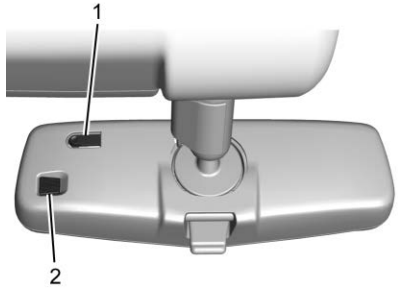
The rearview mirror automatically dims to reduce the glare of the headlamps from behind. This feature comes on when the vehicle is started.

## Rear Camera Mirror

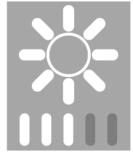
If equipped, this automatic dimming mirror provides a wide angle camera view of the area behind the vehicle.



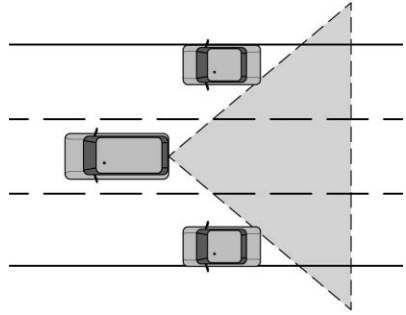
Pull the tab rearward to turn on the display. Push the tab forward to turn it off. When off, the mirror is automatic dimming. Adjust the mirror for a clear view of the area behind the vehicle while the display is off.




To adjust the brightness, press the button (1) on the back of the rearview mirror without covering the light sensor (2).



Each button press cycles the brightness between five settings.



**⚠ Warning**

The Rear Camera Mirror (RCM) has a limited view. Portions of the road, vehicles, and other objects may not be seen. Do not drive or park the vehicle using only this camera. Objects may appear closer than they are. Check the outside mirrors or glance over your shoulder when making lane changes or merging. Failure to use proper care may result in injury, death, or vehicle damage.

The camera that provides the Rear Camera Mirror (RCM) image is above the license plate, next to the Rear Vision Camera (RVC).

To clean the rear camera, see *Rear Window Wiper/Washer* ⇨ *123*.

### Troubleshooting

If the tab is in the rearward position and a blue screen and are displayed in the mirror and the display shuts off, see your dealer for service.

The RCM may not work properly or display a clear image if:

- There is glare from the sun or headlamps. This may obstruct objects from view.
- Dirt, snow, or other debris blocks the camera lens. Clean the lens with a soft damp cloth.
- The back of the vehicle has been damaged and the position and mounting angle of the camera has changed.

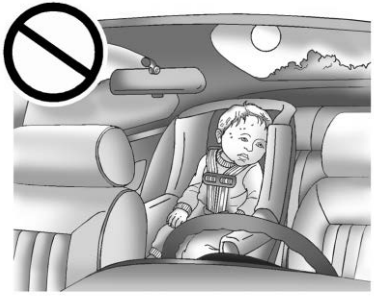
## Child-View Mirror

If equipped, the child-view mirror is on the overhead console. Press the fixed button on the cover to release. Push the mirror back up when not in use.

# 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.

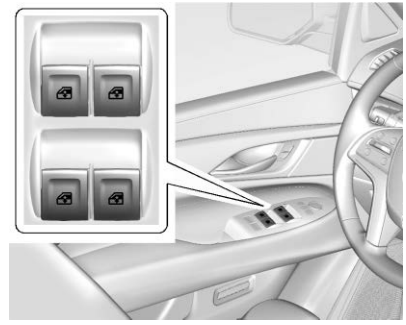


The vehicle aerodynamics are designed to improve fuel economy performance. This may result in a pulsing sound when either rear window is down and the front windows are up. To reduce the sound, open either a front window or the sunroof, if equipped.

## 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* ⇨ *28*.



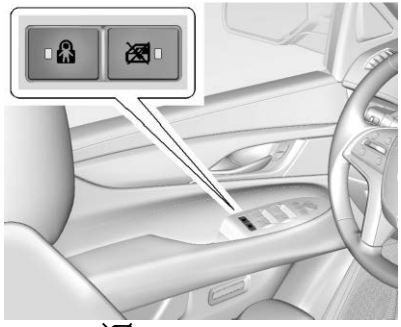
Power windows work when the ignition is on, in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* ⇨ *203*.

Using the window switch, press to open or pull to close the window.

The windows may be temporarily disabled if they are used repeatedly within a short time.

### Window Lockout

This feature stops the rear passenger window switches from working.



- Press to engage the rear window lockout feature. The indicator light is on when engaged.
- Press again to disengage.

## Window Express Movement

All windows can be opened without holding the window switch. Press the switch down fully and quickly release to express open the window.

If equipped, pull the window switch up fully and quickly release to express close the window.

Briefly press or pull the window switch in the same direction to stop that window's express movement.

## Window Automatic Reversal System

The express-close feature will reverse window movement if it comes in contact with an object. Extreme cold or ice could cause the window to auto-reverse. The window will operate normally after the object or condition is removed.

## Automatic Reversal System Override

**⚠ Warning**

If automatic reversal system override is active, the window will not reverse automatically. You or others could be injured and the window could be damaged. Before using automatic reversal system override, make sure that all people and obstructions are clear of the window path.

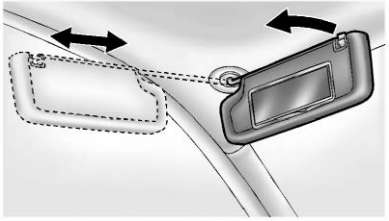
When the engine is on, override the automatic reversal system by pulling and holding the window switch if conditions prevent it from closing.

## Programming the Power Windows

Programming may be necessary if the vehicle battery has been disconnected or discharged. If the window is unable to express-up, program each express-close window:

1. Close all doors.
2. Turn the ignition on or to ACC/ACCESSORY.
3. Partially open the window to be programmed. Then close it and continue to pull the switch briefly after the window has fully closed.
4. Open the window and continue to press the switch briefly after the window has fully opened.

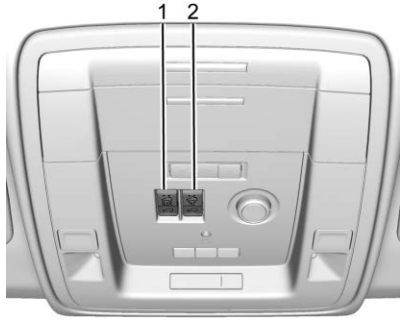
## Sun Visors



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

# Roof

## Sunroof




1. SLIDE Switch
2. TILT Switch

If equipped, the sunroof only operates when the ignition is on or in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* ⇨ *203*.

### Slide Switch

**Express-Open/Express-Close :** To express-open the sunroof, fully press and release (1). Press the switch again to stop the movement. To express-close the sunroof, fully press and release (1). Press the switch again to stop the movement.

**Open/Close (Manual Mode) :** To open the sunroof, press and hold (1). Release the switch to stop the movement. Press and hold (1) to close the sunroof. Release the switch to stop the movement.

### Tilt Switch

**Vent :** From the closed position, press (2) to vent the sunroof. Press (2) to close the sunroof vent.

When the sunroof is opened, an air deflector will automatically raise. The air deflector will retract when the sunroof is closed.

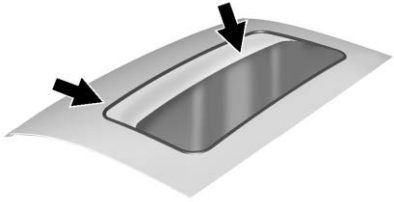
The sunroof also has a sunshade which can be pulled forward to block sun rays. The sunshade must be opened and closed manually when the sunroof is in the vent or fully closed position.

## Automatic Reversal System

The sunroof has an automatic reversal system that is only active when the sunroof is operated in express-close mode.

If an object is in the path while express closing, the reversal system will detect an object, stop, and open the sunroof again.

If frost or other conditions prevent closing, override the feature by closing the sunroof in manual mode. To stop movement, release the switch.



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.

If water is seen dripping into the water drainage system, this is normal.

# Seats and Restraints

## Head Restraints

Head Restraints ..... 59

## Front Seats

Power Seat Adjustment ..... 60
Lumbar Adjustment ..... 61
Reclining Seatbacks ..... 63
Memory Seats ..... 63
Massage ..... 66
Heated and Cooled Front Seats ... 67

## Rear Seats

Rear Seats ..... 68
Heated Rear Seats ..... 68
Second Row Seats ..... 69
Third Row Seats ..... 73

## Seat Belts

Seat Belts ..... 75
How to Wear Seat Belts Properly ..... 76
Lap-Shoulder Belt ..... 77
Seat Belt Use During Pregnancy ..... 82
Seat Belt Extender ..... 82
Safety System Check ..... 83
Seat Belt Care ..... 83
Replacing Seat Belt System Parts after a Crash ..... 83

## Airbag System

Airbag System ..... 84
Where Are the Airbags? ..... 86
When Should an Airbag Inflate? ..... 87
What Makes an Airbag Inflate? ... 88
How Does an Airbag Restrain? ... 88
What Will You See after an Airbag Inflates? ..... 89
Passenger Sensing System ..... 90
Servicing the Airbag-Equipped Vehicle ..... 94
Adding Equipment to the Airbag-Equipped Vehicle ..... 94
Airbag System Check ..... 95
Replacing Airbag System Parts after a Crash ..... 95

## Child Restraints

Older Children ..... 96
Infants and Young Children ..... 98
Child Restraint Systems ..... 100
Where to Put the Restraint ..... 102
Lower Anchors and Tethers for Children (LATCH System) ..... 103
Replacing LATCH System Parts After a Crash ..... 110
Securing Child Restraints (With the Seat Belt in the Rear Seat) ..... 111
Securing Child Restraints (With the Seat Belt in the Front Seat) ..... 113

# Head Restraints

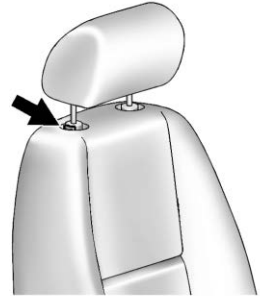
## Front Seats

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

**⚠ 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.



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.

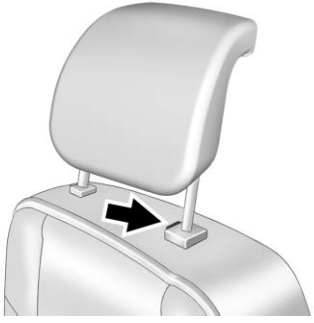
The front seat outboard head restraints are not removable.

### Second Row Seats

The vehicle's second row seats have head restraints in the outboard seating positions that cannot be adjusted.

The second row seat outboard head restraints are not removable.

### Third Row Seats



The third row seat head restraint can be lowered to allow for better visibility when the rear seat is unoccupied.

To lower the head restraint, press the button located on the top of the seatback and push the head restraint down.

Return the lowered head restraint to the upright position until it locks into place. Push and pull on the head restraint to make sure it is locked.

If you are installing a child restraint in the third row seat, see “Securing a Child Restraint Designed for the LATCH System” under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103*.

# Front Seats

## Power Seat Adjustment

### Uplevel 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.

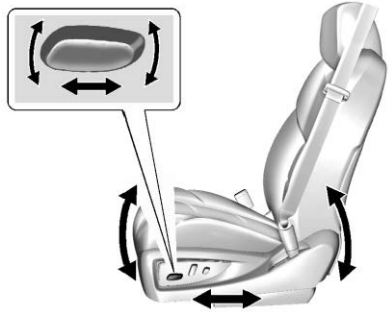
If equipped, the ignition must be on to use all uplevel seat features.

### Uplevel Seat Control

1. Feature Select
2. Up
3. Rearward
4. Down
5. Forward

- Move Feature Select (1) to display seat adjustments on the infotainment display. Press and release or hold to scroll through features.
- Press Up (2) to make upward adjustments of the selected feature.
- Press Rearward (3) to make rearward adjustments of the selected feature.
- Press Down (4) to make downward adjustments of the selected feature.
- Press Forward (5) to make forward adjustments of the selected feature.

### Base Seat Adjustment



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.

## Lumbar Adjustment

### Lumbar and Bolster Support

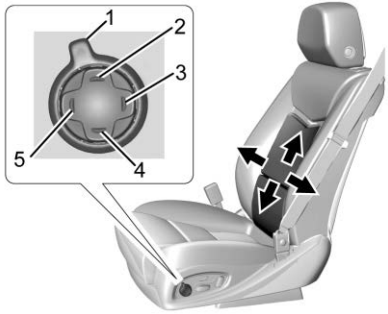
Base Seat Adjustment

To adjust lumbar support:

- Press and hold the control forward to increase or rearward to decrease upper and lower lumbar support at the same time.

- Press and hold the control up to increase upper lumbar support and decrease lower lumbar support.

  Press and hold the control down to increase lower lumbar support and decrease upper lumbar support.

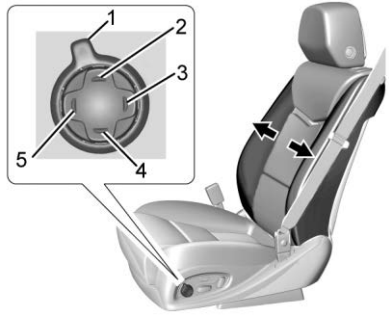



Uplevel Seat Adjustment

To adjust lumbar support, if equipped:

- Press and release or hold Feature Select (1) to scroll to lumbar support on the infotainment display.
- Press Forward (5) or Rearward (3) to adjust lumbar forward or rearward.
- Press Up (2) or Down (4) to adjust lumbar up or down.

To adjust bolster support, if equipped:

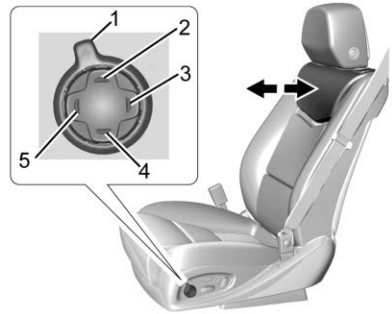



Uplevel Seat Adjustment

- Press and release or hold Feature Select (1) to scroll to bolster support on the infotainment display.
- Press Forward (5) or Rearward (3) to adjust bolster support inward or outward.

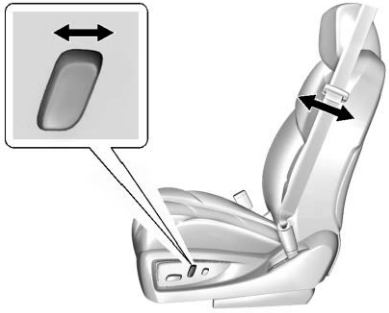
## Upper Shoulder Support

To adjust upper shoulder support, if equipped:




- Press and release or hold Feature Select (1) to scroll to upper shoulder support on the infotainment display.
- Press Forward (5) or Rearward (3) to adjust shoulder support forward or rearward.

## Reclining Seatbacks



Base Shown, Uplevel Similar

To recline 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 seat belts cannot do their job.

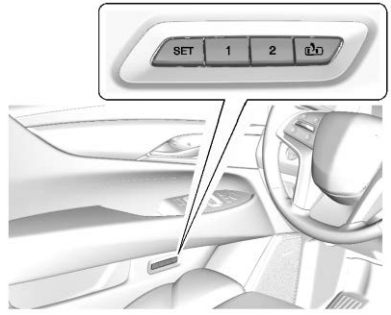
The shoulder belt will not be against your body. Instead, it will be in front of you. In a crash, you could go into it, receiving neck or other injuries.

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 seat belt properly.

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

## Memory Seats



If equipped, memory seats allow two drivers to store and recall their unique seat positions for driving the vehicle, and a shared exit position for getting out of the vehicle. Other feature positions may also be set, such as power mirrors, power steering wheel, and adjustable pedals, if equipped. Memory positions are linked to RKE transmitter 1 or 2 for automatic memory recalls.

Before storing, adjust all available memory feature positions. Turn the ignition on and then press and release SET; a beep will sound. Then immediately press and hold 1, 2, or (Exit) on the driver door until two beeps sound. To manually recall these positions, press and hold 1, 2, or until the saved position is reached.

The vehicle identifies the current driver's RKE transmitter number (1–8). See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*. Only RKE transmitters 1 and 2 can be used for automatic memory recalls. A Driver Information Center (DIC) welcome message indicating the transmitter number may display for the first few ignition cycles following a transmitter change. For Auto Memory Recall to work properly, save the positions to the memory button (1 or 2) matching the RKE transmitter number displayed in the DIC welcome message. Carry the linked RKE transmitter when entering the vehicle.

### Vehicle Personalization Settings

- To have the Auto Memory Recall movement begin when the vehicle is started, select the Settings menu, then Vehicle, then Comfort and Convenience, and then Auto Memory Recall. Select On or Off. See "Auto Memory Recall" later in this section.
- To begin Easy Exit Recall movement when the ignition is turned off and the driver door is opened, or when the ignition is turned off with the driver door already opened, select the Settings menu, then Vehicle, then Comfort and Convenience, and then Easy Exit Options. Select On or Off. See "Easy Exit Recall" later in this section.
- See *Vehicle Personalization* ⇨ *152* for additional setting information.

### Identifying Driver Number

To identify the driver number:

1. Start the vehicle with the other key or RKE transmitter. The DIC should display the driver number; 1 or 2. Turn the ignition off and remove the key or RKE transmitter from the vehicle.
2. Start the vehicle with the initial key or RKE transmitter. The DIC should display the other driver number not shown in step 1.

### Saving Memory Positions

Read these instructions completely before saving memory positions.

To save preferred driving positions 1 and 2:

1. Turn the ignition on or to ACC/ACCESSORY.

   A DIC welcome message may be displayed indicating number 1 or 2 for memory recalls.

2. Adjust all available memory features to the desired driving position.
3. Press and release SET; a beep will sound.
4. Immediately press and hold the 1 or 2 memory button matching the above DIC welcome message until two beeps sound.

   If too much time passes between releasing SET and pressing 1, the memory position will not be saved and two beeps will not sound. Repeat Steps 3 and 4.

   1 or 2 corresponds to the driver number. See “Identifying Driver Number” in this section.
5. Repeat Steps 1–4 for a second driver using 1 or 2.

To save positions for and easy exit features, repeat Steps 1–4 using . This stores the positions for getting out of the vehicle.

Save preferred memory feature positions to both 1 and 2 if you are the only driver.

### Manually Recalling Memory Positions

Press and hold 1, 2, or to recall the previously stored memory positions.

To stop manual recall movement, release 1, 2, or B. Recall can also be stopped by pressing a power seat, SET, power mirror control, power steering wheel control, or adjustable pedal control, if memory equipped. The driver or passenger side mirror must be selected.

### Auto Memory Recall

The vehicle identifies the number of the current driver’s RKE transmitter (1–8). See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*. If the RKE transmitter is 1 or 2, and Auto Memory Recall is programmed on in vehicle personalization, the positions saved to the same memory button number 1 or 2 are automatically recalled when the ignition is turned on, or turned from off to ACC/ACCESSORY. RKE transmitters 3–8 will not provide automatic memory recalls.

To turn Auto Memory Recall on or off, see "Vehicle Personalization Settings" previously in this section and *Vehicle Personalization* ⇨ *152*.

The transmission must be in P (Park) to initiate Auto Memory Recall. Auto Memory Recall will complete if the vehicle is shifted out of P (Park) prior to reaching the stored memory position.

To stop Auto Memory Recall movement, turn the ignition off or press any of the following memory controls:

- Power seat
- Memory SET, 1, 2, or
- Power mirror, with the driver or passenger side mirror selected
- Power steering wheel, if equipped
- Adjustable pedals, if equipped

If the stored memory seat position does not automatically recall or recalls to the wrong positions, the driver’s RKE transmitter number (1 or 2) may not match the memory button number that positions were saved to.

Try storing the position to the other memory button or try the other RKE transmitter.

### Easy Exit Recall

Easy Exit Recall is not linked to an RKE transmitter. The position stored to is used for all drivers. To turn Easy Exit Recall on or off, see "Vehicle Personalization Settings" previously in this section and *Vehicle Personalization* ⇨ *152*.

If turned on, the positions saved to are automatically recalled 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.

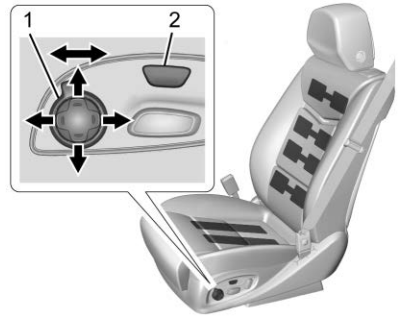
To stop Easy Exit Recall movement, press any of the following memory controls:

- Power seat
- Memory SET, 1, 2, or
- Power mirror, with the driver or passenger side mirror selected
- Power steering wheel, if equipped
- Adjustable pedals, if equipped

### Obstructions

If something has blocked the driver seat and/or power steering wheel while recalling a memory position, the recall may stop. Remove the obstruction and try the recall again. If the memory position still does not recall, see your dealer for service.

## Massage




Driver Seat Shown, Passenger Seat Similar

If equipped, the ignition must be on to use the massage feature.

To activate and adjust massage:

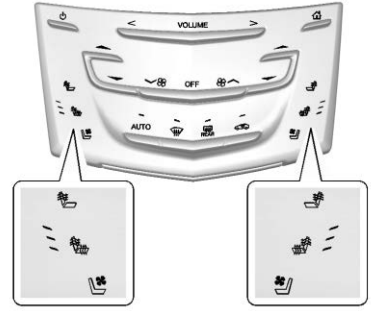
1. Turn the selection control (1) to view massage options on the infotainment display.
2. Select massage feature.
3. Press up or down to select the massage type.
4. Press forward or rearward to change the intensity.

5. To activate massage at last massage type and intensity settings or to turn massage off, press the massage On/Off control (2).

## Heated and Cooled Front Seats

**⚠ Warning**

If temperature change or pain to the skin cannot be felt, the seat heater may cause burns. To reduce the risk of burns, use care when using the seat heater, 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.




To operate, the engine must be running.

Press or to heat the driver or passenger seatback only.

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

Press or to cool the driver or passenger seat.

When this feature is off, the heated and cooled seat symbols on the buttons are white. When a heated seat is turned on, the symbol turns red. When a cooled 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 heated seats are on high for an extended time, their level may automatically be lowered.

The passenger seat may take longer to heat up.

### Remote Start Auto Heated and Cooled Seats

During a remote start, the heated or cooled seats will turn on if enabled in vehicle personalization. When it is cold outside, the heated seats turn on; when it is hot outside, the cooled seats turn on. The seats will continue to operate depending on the vehicle's internal temperature. If auto heated or cooled seats are not equipped or enabled, seat operation is canceled when the ignition is turned on. Press the heated or cooled seat button to

use the heated or cooled seats after the vehicle is started.
See *Remote Vehicle Start* ⇨ *36* and *Vehicle Personalization* ⇨ *152*.

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

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

### Auto Heated and Cooled Seats

When the ignition is on, the auto heated or cooled seats will automatically activate at the level determined by the vehicle's interior temperature, if enabled in vehicle personalization. See *Vehicle Personalization* ⇨ *152*. The indicator lights next to the buttons indicate the level of operation. Use the heated or cooled seat buttons to turn off auto heated or cooled seats. If the passenger seat is unoccupied, this feature will not activate that seat.

# Rear Seats

### Rear Seat Reminder

If equipped, the message REAR SEAT REMINDER LOOK IN REAR SEAT displays under certain conditions indicating there may be an item or passenger in the rear seat. Check before exiting the vehicle.

This feature will activate when a second row door is opened while the vehicle is on or up to 10 minutes before the vehicle is turned on. There will be an alert when the vehicle is turned off. The alert does not directly detect objects in the rear seat; instead, under certain conditions, it detects when a rear door is opened and closed, indicating that there may be something in the rear seat.

The feature is active only once each time the vehicle is turned on and off, and will require reactivation by opening and closing the second row doors. There may be an alert even when there is nothing in the rear seat; for example, if a child entered the vehicle through the rear door and left the vehicle without the vehicle being shut off.

The feature can be turned on or off.
See *Vehicle Personalization* ⇨ *152*.

## Heated Rear Seats

**⚠ Warning**

If temperature change or pain to the skin cannot be felt, the seat heater may cause burns. See the Warning under *Heated and Cooled Front Seats* ⇨ *67*.

The buttons are on the rear of the center console.

With the ignition on, press or to heat the left or right outboard seat cushion. An indicator on the rear climate control display appears when this feature is on.

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.

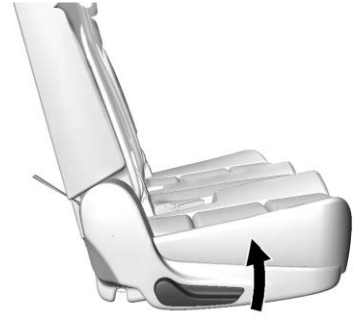
If the heated seats are on high for an extended time, their level may automatically be lowered.

## Second Row Seats

The second row seats can be folded for additional cargo space or folded and tumbled for easy entry and exit to the third row seat.

### Reclining Seatbacks

To recline the seatback:



1. Lift the lever on the outboard side of the seat.
2. Move the seatback to the desired position, and then release the lever to lock the seatback in place.
3. Push and pull on the seatback to make sure it is locked.

To return the seatback to the upright position:

**⚠ 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.

1. Lift the lever fully while applying pressure to the seatback, and the seatback will return to the upright position. If the lever is lifted without applying pressure, the seat will release to a folded position.
2. Push and pull on the seatback to make sure it is locked.

## Manual Fold and Tumble Feature

**⚠ Warning**

Do not leave the second row seat in a tumbled position while the vehicle is in motion. A tumbled seat is not locked. It can move when the vehicle is in motion. People in the vehicle could be injured in a sudden stop or crash. Be sure to return the seat to the passenger seating position before driving the vehicle. Push and pull on the seat to make sure it is locked into place.

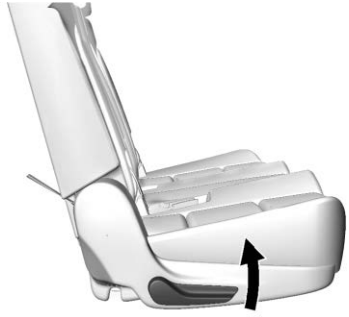
**Caution**

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

### Folding and Tumbling the Seat

To fold and tumble the seat:

1. Make sure that there is nothing under, in front of, or on the seat.



2. Lift the lever on the outboard side of the seat to release the seatback.

The seatback will fold forward to create a flat load floor.

If the seatback cannot fold flat, try moving the front seat forward and/or put the front seatback in the upright position.

3. Lift the lever again to release the rear of the seat from the floor. The seat will tumble forward.

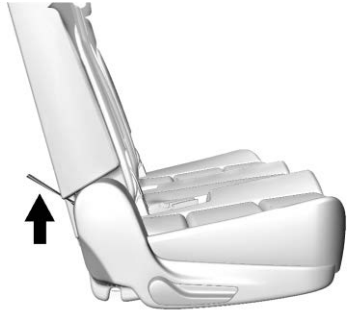
### Folding and Tumbling the Seat from the Third Row Seat

**⚠ Warning**

Using the third row seating position while the second row is folded, or folded and tumbled, could cause injury in a sudden stop or crash. Be sure to return the seat to the passenger seating position. Push and pull on the seat to make sure it is locked into place.

To fold and tumble the seat from the third row seat:

1. Make sure that there is nothing under, in front of, or on the seat.



2. Pull the strap on the bottom rear of the second row seat to release the seatback. The seatback will fold forward.

3. Pull the strap again to release the rear of the seat from the floor. The seat will tumble forward.

### Automatic Fold and Tumble Feature

**⚠ Warning**

Do not leave the second row seat in a tumbled position while the vehicle is in motion. A tumbled seat is not locked. It can move when the vehicle is in motion. People in the vehicle could be injured in a sudden

(Continued)

**Warning (Continued)**

stop or crash. Be sure to return the seat to the passenger seating position before driving the vehicle. Push and pull on the seat to make sure it is locked into place.

**⚠ Warning**

Automatically folding and tumbling the seat when someone is sitting in the seat, could cause injury to the person sitting there. Always make sure there is no one sitting in the seat before pressing the automatic seat release switch.

**Caution**

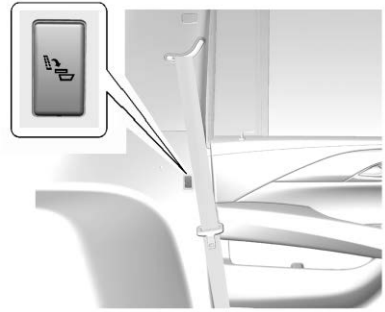
Folding a rear seat with the seat belts still fastened may cause damage to the seat or the seat belts. Always unbuckle the seat belts and return them to their normal stowed position before folding a rear seat.

The transmission must be in P (Park) for this feature to work.

### Folding and Tumbling the Seat

To fold and tumble the seat:

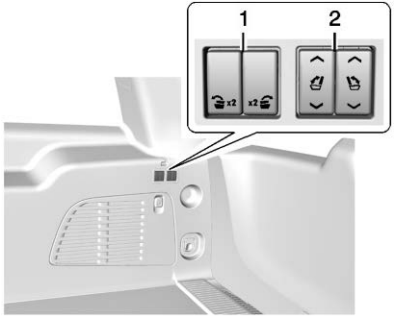
1. Make sure that there is nothing under, in front of, or on the seat.



Driver Side Rear Panel Switch

2. Press the automatic seat release switch on the panel behind the rear doors. The seatback automatically folds flat.
3. Press the switch again to release the rear of the seat from the floor. The seat will tumble forward.

### Folding and Tumbling the Second Row Seat from the Cargo Area




1. Second Row Power Seat Fold and Tumble Switches
2. Third Row Power Seat Fold and Raise Switches

To fold and tumble the seat from the cargo area:

1. Make sure that there is nothing under, in front of, or on the seat.
2. Press the switch (1) on the side trim of the cargo area to fold the second row seatback. The left switch folds the left seatback, and the right switch folds the right seatback.
3. Press the switch again to release the rear of the seat from the floor. The seat will tumble forward.

The switches (2) can be used to fold the third row seatbacks from the cargo area. See *Third Row Seats* ⇨ *73*.

### Returning the Seat to the Sitting Position

**⚠ 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.

To return the seat to the sitting position from the tumbled position:

1. Pull the seat down until it latches to the floor. The seatback cannot be raised if the seat is not latched to the floor.
2. Lift the seatback and push it rearward. Push and pull on the seatback to make sure it is locked.
3. For the 60/40 split-bench seat, make sure the seat belt in the center seating position is not caught between the two seats and is not twisted.

## Third Row Seats

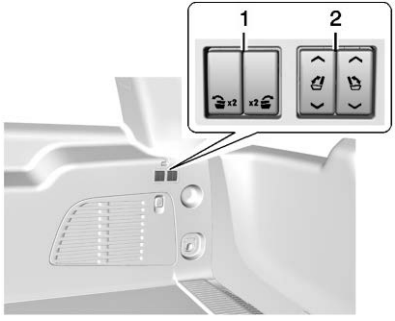
### Folding the Seatback

**Caution**

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

The transmission must be in P (Park) for this feature to work.

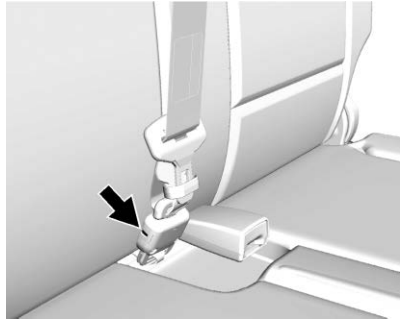
The third row seatbacks can be folded to increase cargo space.



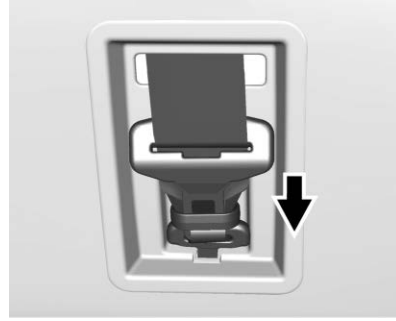

1. Second Row Power Seat Fold and Tumble Switches
2. Third Row Power Seat Fold and Raise Switches

To fold the seatback:

1. Open the liftgate to access the controls for the third row seat.
2. Make sure that there is nothing under, in front of, or on the seat.
3. Fully lower the head restraints. See *Head Restraints* ⇨ *59*. Put the second row seatback in the upright position. See *Second Row Seats* ⇨ *69*.



4. Disconnect the rear seat belt mini-latch, using a key in the slot on the mini-buckle, and let the belt retract into the headliner.

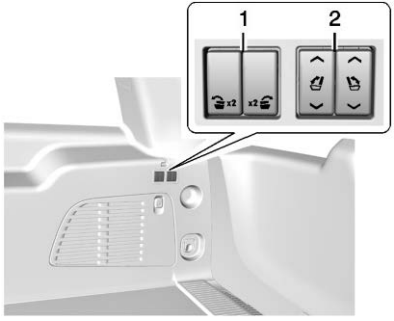


5. Stow the mini-latch in the holder in the headliner.
6. Press and hold the switch (2) on the side trim of the cargo area to fold the third row seatback.

   The left switch folds the left seatback, and the right switch folds the right seatback.
7. Repeat the steps for the other seatback, if desired.

The switches (1) can be used to fold or fold and tumble the second row seats from the cargo area. See *Second Row Seats* ⇨ *69*.

### Returning the Third Row Seatback to the Upright Position




1. Second Row Power Seat Fold and Tumble Switches
2. Third Row Power Seat Fold and Raise Switches

To return the third row seatback to the upright position:

1. Open the liftgate to access the controls for the seat.
2. Press and hold the switch (2) on the side trim of the cargo area to raise the third row seatback. The left switch raises the left seatback, and the right switch raises the right seatback.

> **⚠ Warning**
>
> A seat 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 seat belts are properly routed and attached, and are not twisted.

3. Reconnect the center seat belt mini-latch to the mini-buckle. Do not let it twist.
4. Pull on the seat belt to be sure the mini-latch is secure.
5. Repeat the steps for the other seatback, if desired.

## Seat Belts

This section describes how to use seat belts properly, and some things not to do.

> **⚠ Warning**
>
> Do not let anyone ride where a seat belt cannot be worn properly. In a crash, if you or your passenger(s) are not wearing seat belts, injuries can be much worse than if you are wearing seat 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 are more likely to be seriously injured or killed. Do
>
> (Continued)

**Warning (Continued)**

not allow passengers to ride in any area of the vehicle that is not equipped with seats and seat belts.

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

This vehicle has indicators as a reminder to buckle the seat belts. See *Seat Belt Reminders* ⇨ *134*.

### Why Seat 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 seat belts!

When you wear a seat 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 seat belts. That is why wearing seat belts makes such good sense.

### Questions and Answers About Seat Belts

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

**A:** You *could* be — whether you are wearing a seat 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 seat belts?**

**A:** Airbags are supplemental systems only. They work *with* seat 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 seat belts.

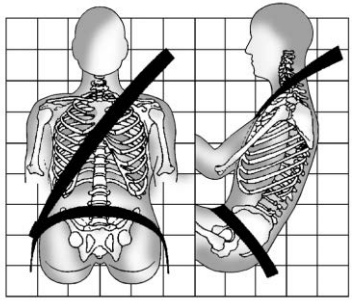
## How to Wear Seat Belts Properly

This section is only for people of adult size.

There are special things to know about seat 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* ⇨ *96* or *Infants and Young Children* ⇨ *98*. 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 seat belts.

There are important things to know about wearing a seat 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 seat 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.

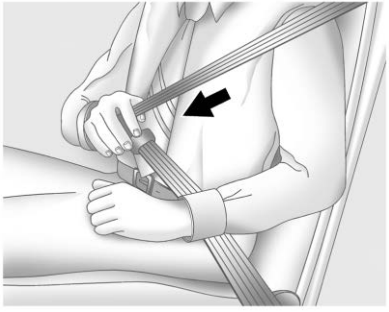
## Lap-Shoulder Belt

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

If you are using a rear seating position with a detachable seat belt, and the seat belt is not attached, see *Third Row Seats* ⇨ *73* for instructions on reconnecting the seat belt to the mini-buckle.

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.



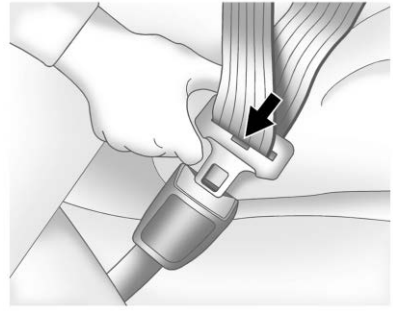
2. Pick up the latch plate and pull the belt across you. Do not let it get twisted.

   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.

   Engaging the child restraint locking feature in the front outboard seating position may affect the passenger sensing system. See *Passenger Sensing System* ⇨ *90*.

   For front seating positions, if the webbing locks in the latch plate before it reaches the buckle, tilt the latch plate flat to unlock.



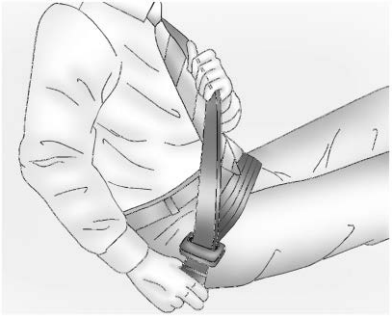
3. Push the latch plate into the buckle until it clicks. If the latch plate will not go fully into the buckle, check if the correct buckle is being used.

   Pull up on the latch plate to make sure it is secure. If the belt is not long enough, see *Seat Belt Extender* ⇨ *82*.

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

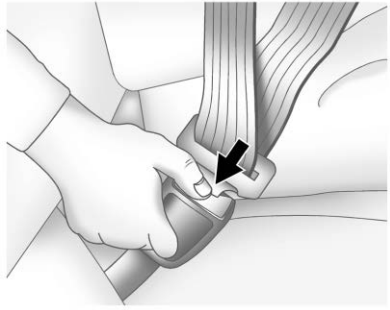
4. If equipped with a shoulder belt height adjuster, move it to the height that is right for you. See

"Shoulder Belt Height Adjuster" in this section for instructions on use and important safety information.



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

   For third row seats, it may be necessary to pull stitching on the seat belt through the latch plate to fully tighten the lap belt on smaller occupants.



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

For third row seats, slide the latch plate up the safety webbing when the seat belt is not in use. The latch plate should rest on the stitching on the seat belt.

Always stow the seat belt slowly. If the seat belt webbing returns quickly to the stowed position, the retractor may lock and cannot be pulled out. If this happens, pull the seat belt straight out firmly to unlock the webbing, and then release it. If the webbing is still locked in the retractor, see your dealer.

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

## Shoulder Belt Height Adjuster

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

Adjust the height 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 seat belt in a crash. See *How to Wear Seat Belts Properly* ⇨ *76*.

Push down on the release button to move the height adjuster to the desired position.

Move the adjuster up by pushing up on the shoulder belt guide.

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

## Automatic Seat Belt Tightening System

The vehicle may have the Automatic Seat Belt Tightening System.

The system activates during emergency braking and/or sudden driving maneuvers and releases when driving conditions return to normal.

The system will not activate if the Traction Control/Electronic Stability Control system is not functioning properly. See *Traction Control/ Electronic Stability Control* ⇨ *218*. If there is a problem with the Automatic Seat Belt Tightening System, a message displays on the Driver Information Center (DIC). If a system unavailable message displays repeatedly or a service message displays, see your dealer. Other seat belt functions are not affected by the Automatic Seat Belt Tightening System.

## Seat Belt Pretensioners

This vehicle has seat belt pretensioners for front outboard occupants. Although the seat belt pretensioners cannot be seen, they are part of the seat belt assembly. They can help tighten the seat 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. Seat belt pretensioners can also help tighten the seat belts in a side crash or a rollover event.

Pretensioners work only once. If the pretensioners activate in a crash, the pretensioners and probably other parts of the vehicle's seat belt system will need to be replaced. See *Replacing Seat Belt System Parts after a Crash* ⇨ *83*.

Do not sit on the outboard seat belt while entering or exiting the vehicle or at any time while sitting in the seat. Sitting on the seat belt can damage the webbing and hardware.

## Rear Seat Belt Comfort Guides

**⚠ Warning**

A seat 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

(Continued)

**Warning (Continued)**

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

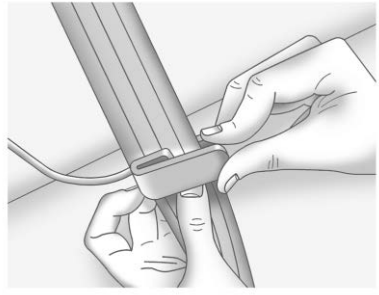
Rear seat belt comfort guides may provide added seat belt comfort for older children who have outgrown booster seats and for some adults. When installed on a shoulder belt, the comfort guide positions the shoulder belt away from the neck and head.

### Second Row Outboard Seating Positions

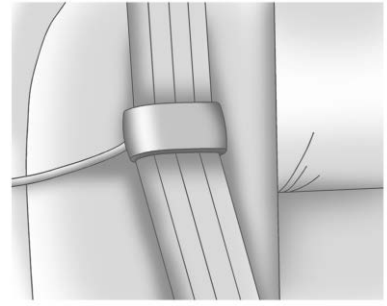
The vehicle has comfort guides for the second row outboard seating positions. The comfort guides are stored on a clip on the interior trim next to the outboard seatback.

To install:

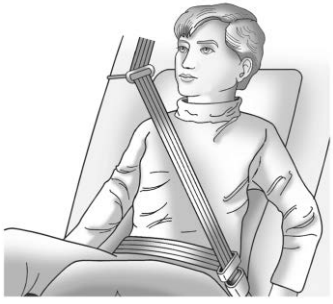
1. Remove the guide from its storage clip on the interior trim next to the outboard seatback.



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 behind the belt with the plastic guide on the front.



4. Buckle, position, and release the seat 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.

To remove and store the comfort guide, squeeze the belt edges together so that the seat belt can be removed from the guide. Slide the guide onto its storage clip.

### Third Row Seating Positions

Comfort guides are available through your dealer for third row seating positions. Instructions are included with the guides.

## Seat Belt Use During Pregnancy

Seat belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they do not wear seat 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 seat 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 seat belts effective is wearing them properly.

## Seat Belt Extender

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

But if a seat 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 restraints. For more information on

the proper use and fit of seat belt extenders see the instruction sheet that comes with the extender.

## Safety System Check

Periodically check the seat belt reminder, seat belts, buckles, latch plates, retractors, shoulder belt height adjusters (if equipped), and seat belt anchorages to make sure they are all in working order. Look for any other loose or damaged seat belt system parts that might keep a seat belt system from performing properly. See your dealer to have it repaired. Torn or frayed seat belts may not protect you in a crash. They can rip apart under impact forces. If a belt is torn or frayed, have it replaced immediately.

Make sure the seat belt reminder light is working. See *Seat Belt Reminders* ⇨ *134*.

Keep seat belts clean and dry. See *Seat Belt Care* ⇨ *83*.

## Seat Belt Care

Keep belts clean and dry.

**⚠ Warning**

Do not bleach or dye seat belt webbing. It may severely weaken the webbing. In a crash, they might not be able to provide adequate protection. Clean and rinse seat belt webbing only with mild soap and lukewarm water. Allow the webbing to dry.

Seat belts should be properly cared for and maintained.

Seat belt hardware should be kept dry and free of dust or debris. As necessary exterior hard surfaces and seat belt webbing may be lightly cleaned with mild soap and water. Ensure there is not excessive dust or debris in the mechanism. If dust or debris exists in the system please see the dealer. Parts may need to be replaced to ensure proper functionality of the system.

## Replacing Seat Belt System Parts after a Crash

**⚠ Warning**

A crash can damage the seat belt system in the vehicle. A damaged seat belt system may not properly protect the person using it, resulting in serious injury or even death in a crash. To help make sure the seat 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 seat belts may not be necessary. But the seat belt assemblies that were used during any crash may have been stressed or damaged. See your dealer to have the seat belt assemblies inspected or replaced.

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

Have the seat 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* ⇨ *135*.

## Airbag System

The vehicle has the following airbags:

- A frontal airbag for the driver
- A frontal airbag for the front outboard passenger
- A front center airbag for the driver and front outboard passenger
- A seat-mounted side impact airbag for the driver
- A seat-mounted side impact airbag for the front outboard passenger
- A roof-rail airbag for the driver and for the second and third row passengers seated directly behind the driver
- A roof-rail airbag for the front outboard passenger and the second and third row passengers seated directly behind the 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 the front center airbag, the word AIRBAG is on the inboard side of the driver seatback.

For seat-mounted side impact airbags, the word AIRBAG is on the side of the seat 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 seat 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 seat belt, even with airbags. Airbags are designed to work with seat belts, not replace them. Also, airbags are not designed to inflate in every crash. In some crashes seat belts are the only restraint. See *When Should an Airbag Inflate?* ⇨ *87*.

Wearing your seat belt during a crash helps reduce your chance of hitting things inside the vehicle or being ejected from it. Airbags are "supplemental restraints" to the seat belts. Everyone in the vehicle should wear a seat 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 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. Seat belts help keep you in position before and during a crash. Always wear a seat belt, even with airbags. The driver should sit as far back as possible while still maintaining control of the vehicle. The seat belts and the front outboard passenger airbags are most effective when you are sitting well back and upright in the seat with both feet on the floor.

Occupants should not lean on or sleep against the front center armrest or console in vehicles with a front center airbag.

(Continued)

**Warning (Continued)**

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. Always secure children properly in the vehicle. To read how, see *Older Children* ⇨ *96* or *Infants and Young Children* ⇨ *98*.

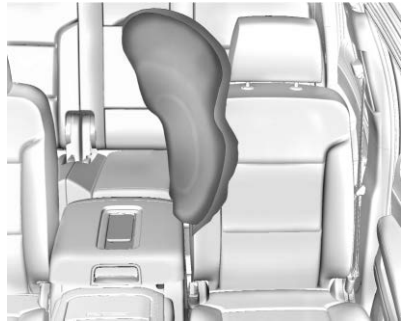
There is an airbag readiness light on the instrument cluster, which shows the airbag symbol.

The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light* ⇨ *135*.

## 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 front center airbag is in the inboard side of the driver seatback.

Driver Side Shown, Passenger Side Similar

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

Driver Side Shown, Passenger Side Similar

The roof-rail airbags for the driver, front outboard passenger, and second and third row outboard passengers are in the ceiling above the side windows.

**⚠ 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

(Continued)

**Warning (Continued)**

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 or console accessories that block the inflation path of a seat-mounted side impact airbag or the front center 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?

This vehicle is equipped with airbags. See *Airbag System* ⇨ *84*. 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. The vehicle has electronic sensors that help the airbag system determine the severity of the impact. 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.

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

In addition, the vehicle has advanced technology frontal airbags. Advanced technology frontal airbags adjust the restraint according to crash severity.

The vehicle also has a seat position sensor that enables the sensing system to monitor the position of the driver seat. The seat position sensor provides information that is used to adjust the deployment of the driver frontal airbag.

The front center airbag is designed to inflate in moderate to severe side crashes depending upon the location of the impact, when either side of the vehicle is struck. In addition, the front center airbag is designed to inflate when the sensing system predicts that the vehicle is about to roll over on its side. The front center airbag is not designed to inflate in frontal impacts, near frontal impacts, or rear impacts.

Seat-mounted side impact airbags are designed to inflate in moderate to severe side crashes depending on the location of the impact. Seat-mounted side impact airbags are not designed to inflate in frontal impacts, near frontal impacts, rollovers, or rear impacts. A seat-mounted side impact airbag is designed to inflate on the side of the vehicle that is struck.

Roof-rail airbags are designed to inflate in moderate to severe side crashes depending on the location of the impact. In addition, these roof-rail airbags are designed to inflate during a rollover or in a severe frontal impact. Roof-rail airbags are not designed to inflate in rear impacts. Both roof-rail airbags will inflate when either side of the vehicle is struck, if the sensing system predicts that the vehicle is about to roll over on its side, or in a severe frontal impact.

In any particular crash, no one can say whether an airbag should have inflated simply because of the vehicle damage or the 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 locations, see *Where Are the Airbags?* ➪ *86*.

## 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 seat 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, second, and third 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?* ⇨ *87*.

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

## What Will You See after an Airbag Inflates?

After frontal and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize the airbags inflated. The front center airbag and 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?* ⇨ *86*.

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

(Continued)

**Warning (Continued)**

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 and hazard warning flashers, and shut off the fuel system after the airbags inflate. The feature may also activate, without airbag inflation, after an event that exceeds a predetermined threshold. After turning the ignition off and then on again, the fuel system will return to normal operation; the doors can be locked, the interior lamps can be turned off, and the hazard warning flashers can be turned off using the controls for those features. If any of these systems are damaged in the crash they may not operate as normal.

**⚠ 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* ⇨ *374* and *Event Data Recorders* ⇨ *374*.
- 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 and Mexico

The words ON and OFF, or the symbols 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 or off, will be visible. See *Passenger Airbag Status Indicator* ⇨ *135*.

The passenger sensing system turns off the front outboard passenger frontal 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 and seat belt. The sensors are designed to detect the presence of a properly seated occupant and determine if the front outboard passenger frontal airbag should be allowed to inflate or not.

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

Whenever possible, children aged 12 and under should be secured in a rear seating position.

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

(Continued)

**Warning (Continued)**

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

Never put a rear-facing child restraint in the front seat, even if the airbag is off. If securing 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 child restraints in the rear seat. Consider using another vehicle to transport the child when a rear seat is not available.

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

- The front outboard passenger seat is unoccupied.
- The system determines 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.
- 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, the off indicator will light and stay lit as a reminder that the airbag is off. See *Passenger Airbag Status Indicator* ⇨ *135*.

The passenger sensing system is designed to turn on the front outboard passenger frontal 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 airbag to be enabled, the on indicator will light and stay lit as a reminder that the airbag is 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, depending upon the person's seating posture and body build. Everyone in the vehicle who has outgrown child restraints should wear a seat 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* ➪ *135* for more information, including important safety information.

## If the On Indicator Is Lit for a Child Restraint

The passenger sensing system is designed to turn off the front outboard passenger frontal airbag if the system determines that an infant is present in 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 (With the Seat Belt in the Front Seat)* ➪ *113* or *Securing Child Restraints (With the Seat Belt in the Rear Seat)* ➪ *111*.

   Make sure the seat belt retractor is locked by pulling the shoulder belt all the way out of the retractor when installing the child restraint, even if the child restraint is equipped with a seat belt lock off. When the retractor lock is set, the belt can be tightened but not pulled out of the retractor.
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* ➪ *59*.
6. Restart the vehicle.

The passenger sensing system may or may not turn off the airbag for a child in a child restraint depending upon the child's size. It is better to secure the child restraint in a rear seat. Never put a rear-facing child restraint in the front seat, even if the on indicator is not lit.

### If the Off Indicator Is Lit for an Adult-Sized 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 or that the child restraint locking feature is engaged.

Use the following steps to allow the system to detect that person and enable the front outboard passenger frontal 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.
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. If the shoulder portion of the belt is pulled out all the way, the child restraint locking feature will be engaged. This may unintentionally cause the passenger sensing system to turn the airbag off for some adult-sized occupants. If this happens, unbuckle the belt, let the belt go back all the way, and then buckle the belt again without pulling the belt out all the way.
6. Restart the vehicle and have the person remain in this position for two to three minutes after the on indicator is lit.

**⚠ Warning**

If the front outboard passenger airbag is turned off for an adult-sized occupant, the airbag will not be able to inflate and help protect that person in a crash, resulting in an increased risk of serious injury or even death. An adult-sized occupant should not ride in the front outboard passenger seat, if the passenger airbag off indicator is lit.

### Additional Factors Affecting System Operation

Seat 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 "Seat 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* ⇨ *94* for more information about modifications that can affect how the system operates.

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 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* ⇨ *371*.

**⚠ Warning**

For up to 10 seconds after the vehicle is turned off and the battery is disconnected, an airbag can still

(Continued)

**Warning (Continued)**

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 any parts of the front seats, seat belts, airbag sensing and diagnostic module, steering wheel, instrument panel, inner door seals including the speakers, any of the airbag modules, ceiling or pillar garnish trim, overhead

console, front sensors, side impact sensors, airbag wiring, or front center console.

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's 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* ⇨ *90*.

If the vehicle has rollover roof-rail airbags, see *Different Size Tires and Wheels* ⇨ *315* 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* ⇨ *364*.

## 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* ⇨ *135*.

**Caution**

If an airbag covering is damaged, opened, or broken, the airbag may not work properly. Do not open or

(Continued)

**Caution (Continued)**

break the airbag coverings. If there are any opened or broken airbag coverings, have the airbag covering and/or airbag module replaced. For the location of the airbags, see *Where Are the Airbags?* ⇨ *86*. See your dealer for service.

## Replacing Airbag System Parts after a Crash

**⚠ Warning**

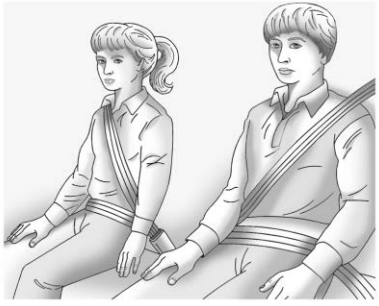
A crash can damage the airbag systems in the vehicle. A damaged airbag system may not properly protect you and your passenger(s) in a crash, resulting in serious injury or even death. To help make sure the airbag systems are working properly after a crash, have them inspected and any necessary replacements 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* ⇨ *135*.

# Child Restraints

## Older Children



Older children who have outgrown booster seats should wear the vehicle's seat 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 seat belt comfort guide, if available. See "Rear Seat Belt Comfort Guides" under *Lap-Shoulder Belt* ⇨ *77*. If a comfort guide is not available, or 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 seat 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 seat 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 Seat Belt Comfort Guides” under *Lap-Shoulder Belt* ⇨ *77*.

According to accident statistics, children are safer when properly restrained 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 seat belts properly.

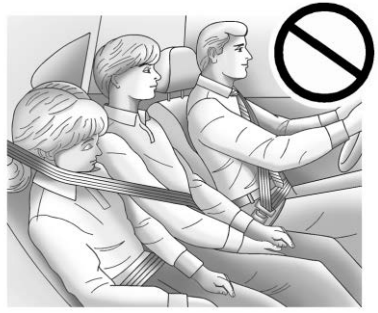
**⚠ Warning**

Never allow more than one child to wear the same seat belt. The seat belt cannot properly spread the impact forces. In a crash, they can

(Continued)

**Warning (Continued)**

be crushed together and seriously injured. A seat belt must be used by only one person at a time.



**⚠ Warning**

Never allow a child to wear the seat belt with the shoulder belt behind their back. A child can be seriously injured by not wearing the lap-shoulder belt properly. In a

(Continued)

**Warning (Continued)**

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 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. The shoulder belt can tighten but cannot be loosened if it is locked. The shoulder belt locks when it is pulled all the way out of the retractor. It unlocks when the shoulder belt is allowed to go all the way back into the retractor, but it cannot do this if it is wrapped around a child's neck. If the shoulder belt is locked and

(Continued)

**Warning (Continued)**

tightened around a child's neck, the only way to loosen the belt is to cut it.

Never leave children unattended in a vehicle and never allow children to play with the seat belts.

Every time infants and young children ride in vehicles, they should have the protection provided by appropriate child restraints. Neither the vehicle's seat belt system nor its airbag system is designed for them.

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.

(Continued)

**Warning (Continued)**

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 arms. An infant or child 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 child restraint in the front outboard 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 front outboard seat, always move the front passenger seat as far back as it will go.

Child restraints are devices used to restrain, seat, or position children in the vehicle and are sometimes called child seats or car seats.

**There are three basic types of child restraints:**

- Forward-facing child restraints
- Rearward-facing child restraints
- Belt-positioning booster seats

The proper child restraint for your child depends on their size, weight, and age, and also on whether the child restraint is compatible with the vehicle in which it will be used.

For each type of child restraint, 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's 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.

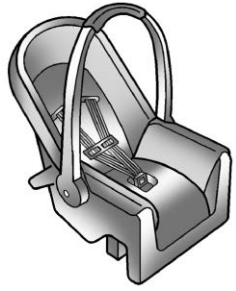
**⚠ Warning**

To reduce the risk of neck and head injury in a crash, infants and toddlers should be secured in a rear-facing child restraint until age two, or until they reach the maximum height and weight limits of their child restraint.

**⚠ Warning**

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



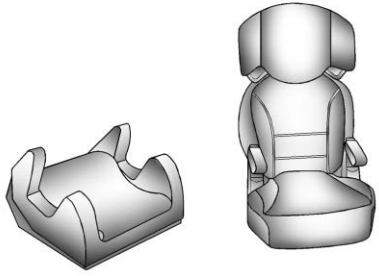
Rear-Facing Infant Restraint

A rear-facing child restraint 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 Restraint

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



Booster Seats

A belt-positioning booster seat is used for children who have outgrown their forward-facing child restraint. Boosters are designed to improve the fit of the vehicle's seat belt system until the child is large enough for the vehicle seat belts to fit properly without a booster seat. See the seat belt fit test in *Older Children* ⇨ *96*.

## 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's seat 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 restraints 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)* ⇨ *103* for more information. 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 an appropriate child restraint secured in a rear seating position.

Whenever possible, children aged 12 and under should be secured in a rear seating position.

The vehicle is equipped with a front center airbag in the inboard side of the driver seat. Even with a front center airbag, a child restraint can be installed in any second row seating position.

Never put a rear-facing child restraint 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* ⇨ *90* for additional information.

When securing a child restraint with the seat belts in a rear seat 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.

Depending on where you place the child restraint and the size of the child restraint, you may not be able to access adjacent seat belts 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 seat belt.

Wherever a child restraint is installed, be sure to follow the instructions that came with the child restraint system and secure the child restraint system 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.

The LATCH system is designed to make installation of a child restraint easier.

In order to use the LATCH system in your vehicle, you need a child restraint that has LATCH attachments. LATCH-compatible rear-facing and forward-facing child seats can be properly installed using either the LATCH anchors or the vehicle's seat belts. Do not use both the seat belts and the LATCH anchorage system to secure a rear-facing or forward-facing child seat.

Booster seats use the vehicle's seat belts to secure the child and the booster seat. If the manufacturer recommends that the booster seat be secured with the LATCH system, this can be done as long as the booster seat can be positioned properly and there is no interference with the proper positioning of the lap-shoulder belt on the child.

Make sure to follow the instructions that came with the child 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 seat belts to properly secure the child restraint. A child restraint must never be installed using only the top tether and anchor.

The LATCH anchorage system can be used until the combined weight of the child plus the child restraint is 29.5 kg (65 lbs). Use the seat belt alone instead of the LATCH anchorage system once the combined weight is more than 29.5 kg (65 lbs).

See *Securing Child Restraints (With the Seat Belt in the Front Seat)* ⇨ *113* or *Securing Child Restraints (With the Seat Belt in the Rear Seat)* ⇨ *111*.

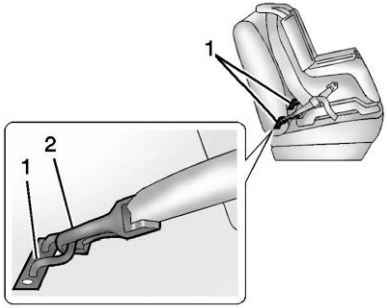
Child restraints built after March 2014 will be labeled with the specific child weight up to which the LATCH system can be used to install the restraint.

The following explains how to attach a child restraint with these attachments in the vehicle.

Not all vehicle seating positions have lower anchors. In this case, the seat belt must be used (with top tether

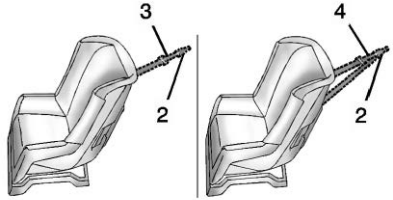
where available) to secure the child restraint.
See *Securing Child Restraints (With the Seat Belt in the Front Seat)* ⇨ *113* or *Securing Child Restraints (With the Seat Belt in the Rear Seat)* ⇨ *111*.

## 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

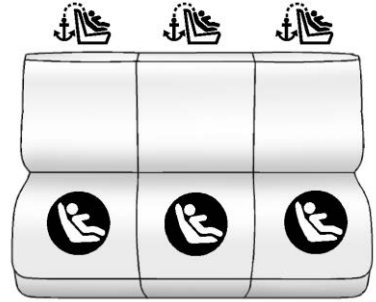



A top tether (3,4) is used to secure the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment hook (2) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child 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 hook (2) to secure the top tether to the anchor.

Some child restraints with top tethers 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 your child restraint.

## Lower Anchor and Top Tether Anchor Locations



Second Row — 60/40

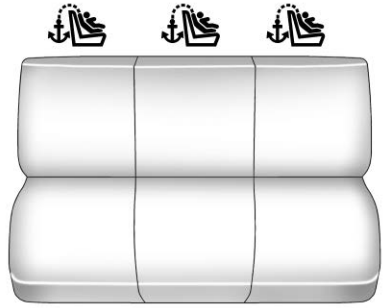
: Seating positions with two lower anchors.

: Seating positions with top tether anchors.

Second Row — Bucket

: Seating positions with two lower anchors.

: Seating positions with top tether anchors.

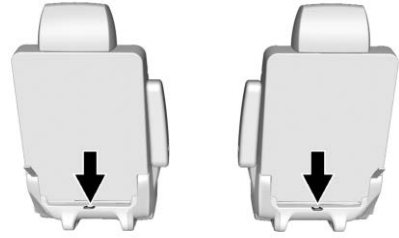


Third Row Seat

: Seating positions with top tether anchors.

To assist in locating the lower anchors, each seating position with lower anchors has two labels, near the crease between the seatback and the seat cushion.

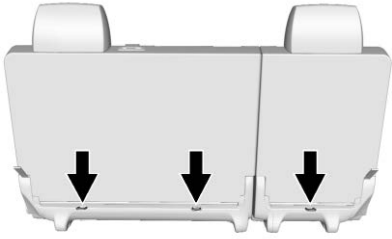
To assist in locating the top tether anchors, the top tether anchor symbol is near the top tether anchors for second row seats. For third row seats, the top tether anchor symbol is on the flipper panel.



Second Row Seat — Bucket

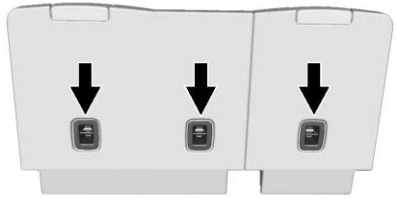
For models with bucket second row seating, the top tether anchors are at the bottom rear of the seat cushion for each seating position in the second

row. Be sure to use an anchor on the same side of the vehicle as the seating position where the child restraint will be placed.



Second Row Seat — 60/40

For models with 60/40 second row seating, the top tether anchors are at the bottom rear of the seat cushion for each seating position in the second row. Be sure to use an anchor on the same side of the vehicle as the seating position where the child restraint will be placed.



Third Row Seat

For the third row seat, the top tether anchors are on the back of the seatback. Move the flipper panel rearward to access the anchors. 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* ⇨ *102* for additional information.

## Securing a Child Restraint Designed for the LATCH System

**⚠ Warning**

A child could be seriously injured or killed in a crash if the child restraint is not properly attached to the vehicle using either the LATCH anchors or the vehicle seat belt. Follow the instructions that came with the child restraint and the instructions in this manual.

**⚠ Warning**

To reduce the risk of serious or fatal injuries during a crash, 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.

**⚠ Warning**

Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck. The shoulder belt can tighten but cannot be loosened if it is locked. The shoulder belt locks when it is pulled all the way out of the retractor. It unlocks when the shoulder belt is allowed to go all the way back into the retractor, but

(Continued)

**Warning (Continued)**

it cannot do this if it is wrapped around a child's neck. If the shoulder belt is locked and tightened around a child's neck, the only way to loosen the belt is to cut it.

Buckle any unused seat belts behind the child restraint so children cannot reach them. Pull the shoulder belt all the way out of the retractor to set the lock, and tighten the belt behind the child restraint after the child restraint has been installed.

**Caution**

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

(Continued)

**Caution (Continued)**

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

The vehicle is equipped with a front center airbag in the inboard side of the driver seat. Even with a front center airbag, a child restraint can be installed in any second row seating position.

If you need to secure more than one child restraint in the rear seat, see *Where to Put the Restraint ⇨ 102*.

This system is designed to make installation of child restraints easier. When using lower anchors, do not use the vehicle's seat 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 seat belts and top tether when recommended by the child restraint manufacturer. Refer to your child restraint manufacturer instructions and the instructions in this manual. For the third row outboard seating positions, if the head restraint interferes with the proper installation of the child restraint, then the head restraint may be removed. See "Head Restraint Removal and Reinstallation under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103*.

   1.1. Find the lower anchors for the desired seating position.

   1.2. Put the child restraint on the seat.

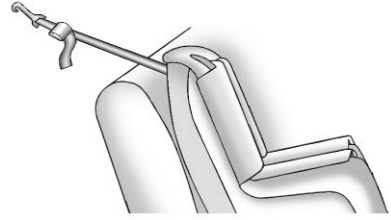
   1.3. Attach and tighten the lower attachments on the child restraint to the lower anchors.

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

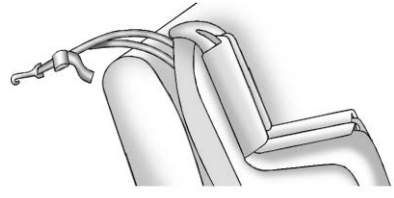
   2.1. Find the top tether anchor.

   For the third row seat, move the flipper panel rearward to access the top tether anchors.

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

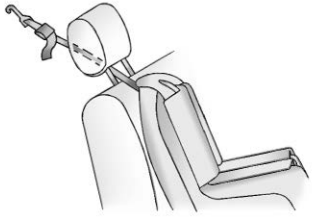


If the position you are using does not have a headrest or head restraint and you are using a single tether, route the tether over the seatback.



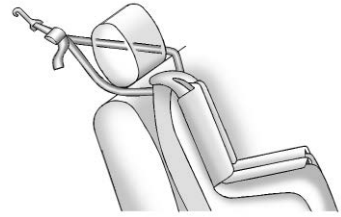
If the position you are using does not have a headrest or head restraint

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 a fixed headrest or head restraint and you are using a single tether, route the tether around the inboard or outboard side of the headrest or head restraint.

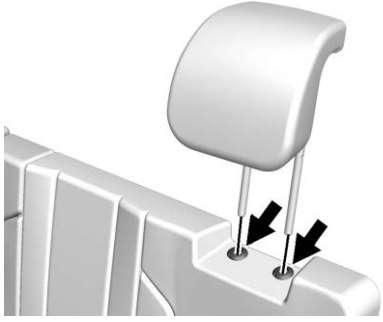


If the position you are using has a fixed or an adjustable head restraint and you are using a dual tether, route the tether around the head restraint.

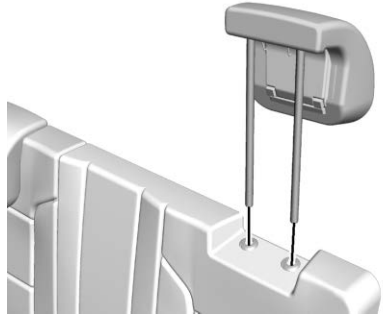
3. Before placing a child in the child restraint, make sure it is securely held in place. To check, grasp the child restraint at the LATCH path and attempt to move it side to side and back and forth. There should be no more than 2.5 cm (1 in) of movement, for proper installation.

### Head Restraint Removal and Reinstallation

1. Partially fold the seatback forward. See *Third Row Seats* ⇨ *73* for additional information.



2. Press the buttons on the head restraint posts and pull up on the head restraint.
3. Route the top tether of the child restraint under the head restraint.



4. With the head restraint facing rearward, insert the head restraint posts into the holes in the top of the seatback.
5. Push the head restraint down.
6. Try to move the head restraint to make sure that it is locked in place.
7. When the child restraint is removed, reinstall the head restraint before the seating position is used.

**⚠ 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.

## 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 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 (With the Seat Belt in the Rear Seat)

When securing a child restraint with the seat belts in a rear seat 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)* ⇨ *103* for how and where to install the child restraint using LATCH. If a child restraint is secured in the vehicle using a seat belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103* 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.

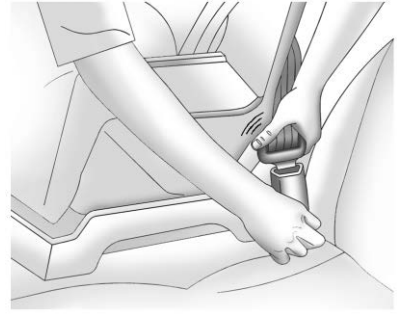
If the child restraint or vehicle seat position does not have the LATCH system, you will be using the seat belt to secure the child restraint. Be sure to follow the instructions that came with the child restraint.

If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint* ⇨ *102*.

1. Put the child restraint on the seat.

   For the third row outboard seating positions, if the head restraint interferes with the proper installation of the child restraint, the head restraint may be removed. See “Head Restraint Removal and Reinstallation” under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103*.

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

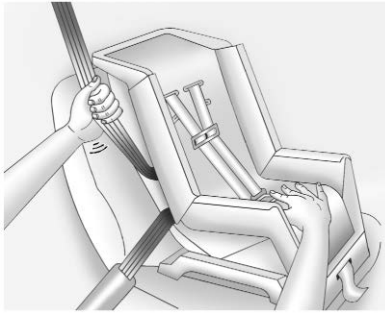


3. Push the latch plate into the buckle until it clicks.

   If the latch plate will not go fully into the buckle, check to see if the correct buckle is being used.

Position the release button on the buckle, away from the child restraint system, so that the seat 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's instructions regarding the use of the top tether. Refer to the instructions that came with the child restraint and see *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103*.

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 seat 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 seat belt and let it return to the stowed position. If the top tether is attached to a top tether anchor, disconnect it.

If the head restraint was removed for a third row outboard seating position, reinstall it before the seating position

is used. See “Head Restraint Removal and Reinstallation” under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103* for additional information on reinstalling the head restraint properly.

## Securing Child Restraints (With the Seat Belt in the Front 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* ⇨ *102*.

In addition, the vehicle has a passenger sensing system which is designed to turn off the front outboard passenger frontal airbag under certain conditions. See *Passenger Sensing System* ⇨ *90* and *Passenger Airbag Status Indicator* ⇨ *135* for more information, including important safety information.

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 outboard 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 front outboard 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 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

(Continued)

**Warning (Continued)**

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.

See *Passenger Sensing System* ⇨ *90* for additional information.

If the child restraint uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* ⇨ *103* 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.

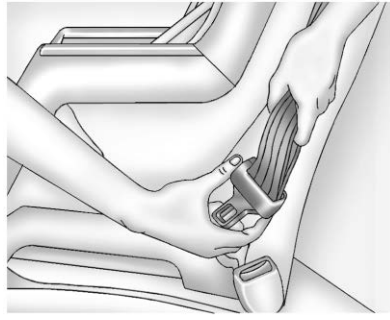
When using the lap-shoulder belt to secure the child restraint in this position, follow the instructions that came with the child restraint and the following instructions:

1. Move the seat as far back as it will go before securing the forward-facing child restraint. Move the seat upward or the seatback to an upright position, if needed, to get a tight installation of the child restraint.

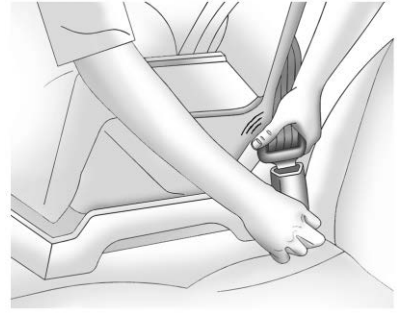
   When the passenger sensing system has turned off the front outboard passenger frontal airbag, the off indicator on the passenger airbag status indicator should light and stay lit when you start the vehicle. See *Passenger Airbag Status Indicator* ⇨ *135*.

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 seat belt through or around the restraint. The child restraint instructions will show you how.



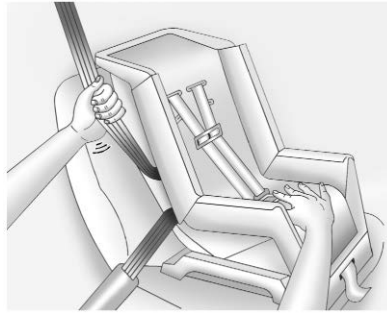
   Tilt the latch plate to adjust the belt, if needed.



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

   Position the release button on the buckle, away from the child restraint system, so that the seat 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 seat 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* ⇨ *90*.

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

# Storage

## Storage Compartments

Storage Compartments ..... 116
Instrument Panel Storage ..... 116
Glove Box ..... 116
Cupholders ..... 117
Sunglasses Storage ..... 117
Armrest Storage ..... 117
Rear Storage ..... 117
Center Console Storage ..... 118

## Additional Storage Features

Cargo Tie-Downs ..... 118
Convenience Net ..... 118

## Roof Rack System

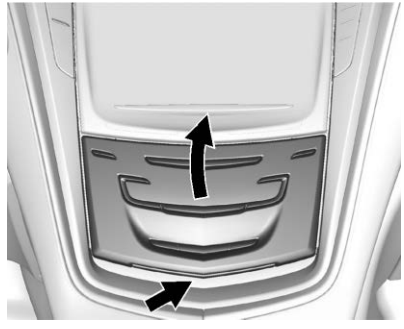
Roof Rack System ..... 119

# Storage Compartments

**⚠ Warning**

Do not store heavy or sharp objects in storage compartments. In a crash, these objects may cause the cover to open and could result in injury.

## Instrument Panel Storage

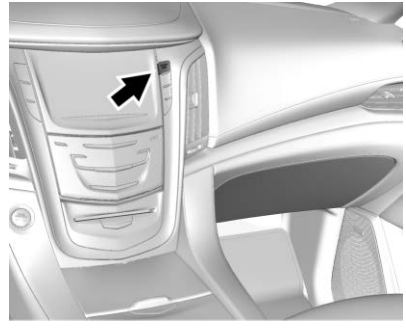


Touch the bottom of the climate control system panel until the door automatically starts to open. The storage area may contain a USB port. See the infotainment manual.

Keep the storage area door closed while driving.

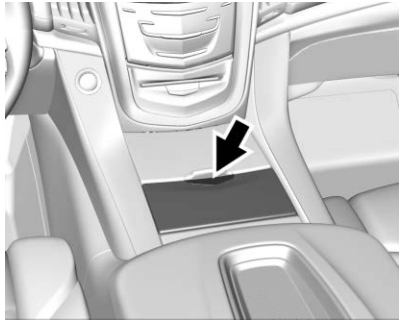
Touch the bottom of the climate control system again until the door automatically starts to close.

## Glove Box



To open, press the button. Close the glove box manually.

## Cupholders



To access the cupholders, press the cover and release.

There is storage in front of the cupholders. Push forward on the handle to open.

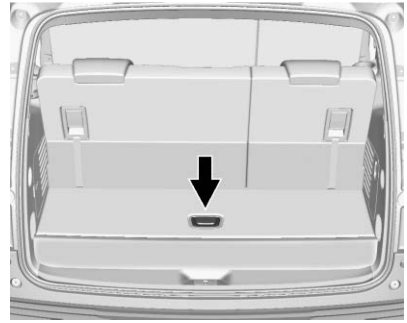
## Sunglasses Storage

If equipped, sunglasses storage is on the overhead console. Press the fixed button on the cover and release to access.

## Armrest Storage

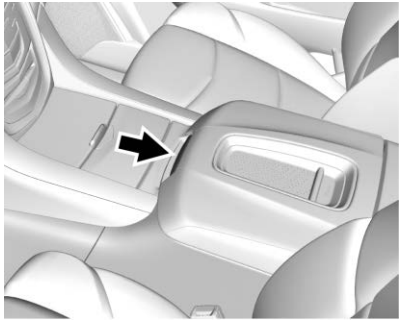
For vehicles with a rear seat armrest, pull the loop at the top of the armrest down to access the cupholders.

## Rear Storage



There is storage in the floor of the rear cargo area. Lift the handle to access. There is a removable divider to help organize.

## Center Console Storage



Pull the handle and lift to access. There are auxiliary jacks, USB ports, an accessory power outlet, a tote compartment, and a device holder inside.

On the rear of the console there are auxiliary jacks, a power outlet, and a storage area.

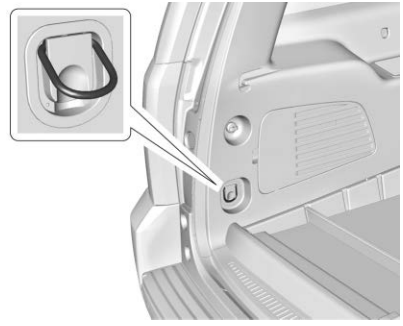
See *Power Outlets* ⇨ *125* and the infotainment manual.

If equipped, press to turn on the cooled compartment inside the center console storage.

The cooled compartment will help keep cold liquids cold, but is not intended to chill warm liquids. Do not use for items that need to be refrigerated.

# Additional Storage Features

## Cargo Tie-Downs



There are four cargo tie-downs in the rear cargo area. These can be used to strap cargo down and keep it from moving inside the vehicle.

## Convenience Net

Use the convenience net, located in the rear, to store small loads as far forward as possible. The net should not be used to store heavy loads.

## Roof Rack System

**⚠ Warning**

If something is carried on top of the vehicle that is longer or wider than the roof rack — like paneling, plywood, or a mattress — the wind can catch it while the vehicle is being driven. The item being carried could be violently torn off, and this could cause a collision and damage the vehicle. Never carry something longer or wider than the roof rack on top of the vehicle unless using a GM certified accessory carrier.

If equipped, the roof rack can be used to load items. For roof racks that do not have crossrails included, GM Certified crossrails can be purchased as an accessory. See your dealer for additional information.

**Caution**

Loading cargo on the roof rack that weighs more than 100 kg (220 lb) or hangs over the rear or sides of the vehicle may damage the vehicle. Load cargo so that it rests evenly between the crossrails, making sure to fasten cargo securely.

To prevent damage or loss of cargo when driving, check to make sure crossrails and cargo are securely fastened. Loading cargo on the roof rack will make the vehicle's center of gravity higher. Avoid high speeds, sudden starts, sharp turns, sudden braking, or abrupt maneuvers, otherwise it may result in loss of control. If driving for a long distance, on rough roads, or at high speeds, occasionally stop the vehicle to make sure the cargo remains in its place.

Do not exceed the maximum vehicle capacity when loading the vehicle. For more information on vehicle capacity and loading, see *Vehicle Load Limits* ➪ *193*.

A Center High-Mounted Stoplamp (CHMSL) is located above the rear window glass. Make sure items loaded on the roof of the vehicle do not block or damage the CHMSL.

# Instruments and Controls

## Controls

Steering Wheel Adjustment .... . 121
Steering Wheel Controls ..... 121
Heated Steering Wheel ..... 121
Horn ..... 121
Windshield Wiper/Washer ..... 121
Rear Window Wiper/Washer .... 123
Compass ..... 124
Clock ..... 124
Power Outlets ..... 125
Wireless Charging ..... 127
Cigarette Lighter ..... 129
Ashtrays ..... 129

## Warning Lights, Gauges, and Indicators

Warning Lights, Gauges, and Indicators ..... 129
Instrument Cluster ..... 130
Speedometer ..... 132
Odometer ..... 132
Trip Odometer ..... 133
Tachometer ..... 133
Fuel Gauge ..... 133
Engine Coolant Temperature Gauge ..... 134
Seat Belt Reminders ..... 134
Airbag Readiness Light ..... 135
Passenger Airbag Status Indicator ..... 135
Charging System Light ..... 136
Malfunction Indicator Lamp (Check Engine Light) ..... 137
Brake System Warning Light .... 138
Electric Parking Brake Light ..... 139
Service Electric Parking Brake Light ..... 139
Antilock Brake System (ABS) Warning Light ..... 140
Sport Mode Light ..... 140
Tow/Haul Mode Light ..... 140
Winter Driving Mode Light ..... 140
Lane Keep Assist (LKA) Light ... 140
Vehicle Ahead Indicator ..... 141
Traction Off Light ..... 141
StabiliTrak OFF Light ..... 141
Traction Control System (TCS)/ StabiliTrak Light ..... 142
Engine Coolant Temperature Warning Light ..... 142
Tire Pressure Light ..... 142
Engine Oil Pressure Light ..... 143
Low Fuel Warning Light ..... 143
Security Light ..... 143
High-Beam On Light ..... 144
Lamps On Reminder ..... 144
Cruise Control Light ..... 144
Door Ajar Light ..... 145

## Information Displays

Driver Information Center (DIC) ..... 145
Head-Up Display (HUD) ..... 147

## Vehicle Messages

Vehicle Messages ..... 151
Engine Power Messages ..... 151
Vehicle Speed Messages ..... 152

## Vehicle Personalization

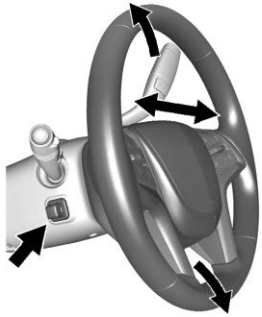
Vehicle Personalization ..... 152

## Universal Remote System

Universal Remote System ..... 160
Universal Remote System Programming ..... 160
Universal Remote System Operation ..... 163

# Controls

## Steering Wheel Adjustment



To adjust the power tilt and telescoping steering wheel:

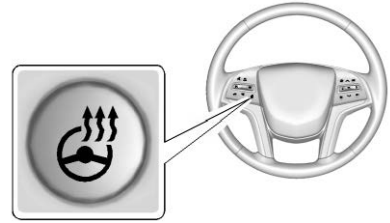
Press the control to move the steering wheel up and down or forward and rearward.

Do not adjust the steering wheel while driving.

## Steering Wheel Controls

The infotainment system can be operated by using the steering wheel controls. See "Steering Wheel Controls" in the infotainment manual.

## Heated Steering Wheel



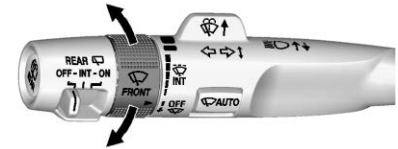
**:** If equipped, press to turn the heated steering wheel on or off. An indicator next to the button is lit when the feature is turned on.

The steering wheel takes about three minutes to start heating.

## Horn

To sound the horn, press on the steering wheel.

## Windshield Wiper/Washer




The windshield wiper control is on the turn signal lever.

The windshield wipers are controlled by turning the band with FRONT on it.

**:** Fast wipes.

**:** Slow wipes.

**INT :** If Rainsense is turned off, turn the FRONT band up for more frequent wipes or down for less frequent wipes. If Rainsense is turned on, see Rainsense later in this section.

**OFF :** Turns the windshield wipers off.

**:** For a single wipe, turn to , then release. For several wipes, hold the band on longer.

Clear ice and snow from the wiper blades before using them. If frozen to the windshield, carefully loosen or thaw them. Damaged wiper blades should be replaced. See *Wiper Blade Replacement* ➪ *284*.

Heavy snow or ice can overload the wiper motor. An internal circuit breaker to the motor will stop the motor until it cools down.

### Wiper Parking

If the ignition is turned off while the wipers are on ▬, ▬, or INT, they will immediately stop.

If FRONT 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.

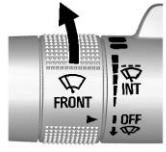
If the ignition is turned off while the wipers are performing wipes due to windshield washing or Rainsense, the wipers continue to run until they reach the base of the windshield.

## Rainsense

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.

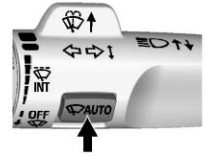
Keep this area of the windshield clear of debris to allow for best system performance.

**INT :** Turn the FRONT band on the wiper lever to adjust the sensitivity when Rainsense is turned on.




- Turn the band up for more sensitivity to moisture.
- Turn the band down to lower INT setting for less sensitivity to moisture.

Move the band out of the INT position to deactivate Rainsense.




**AUTO :** Press to turn Rainsense on or off. When turned on and FRONT is in one of the Rainsense wipe sensitivity positions the wipers can be adjusted for more or less sensitivity to moisture. When turned off, the wipers operate as timed intermittent wipers and can be adjusted for more or less frequent wipes.

If AUTO is turned on when the ignition is turned on, or if the ignition is in on and the FRONT band is in one of the sensitivity settings when AUTO is turned on or off, a message may display indicating if Rainsense was turned on or off.

If the ignition is in on and FRONT is not in one of the sensitivity settings when AUTO is turned on,

a message may display indicating that the wiper band must be in one of the sensitivity settings for Rainsense to operate.

### 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

**⚠ 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.

**: Push the paddle marked with the windshield washer symbol at the top of the turn signal lever to spray washer fluid and activate the wipers. The wipers will continue until the paddle is released or the maximum wash time is reached. When the paddle is released, additional wipes may occur depending on how long the windshield washer had been activated. See *Washer Fluid* ⇨ *278* for information on filling the windshield washer fluid reservoir.

## Rear Window Wiper/ Washer

The rear wiper control is on the turn signal lever.

To turn the rear wiper on, slide the lever to a wiper position.

**OFF :** Turns the wiper off.

**INT :** Turns on the rear wiper with a delay between wipes.

**ON :** Turns on the rear wiper.

**REAR :** Press this button on the end of the lever to spray washer fluid on the rear window. The wipers will clear the rear window and either stop or return to your preset speed. For more washer cycles, press and hold the button.

The rear window wiper/washer will not operate if the liftgate or liftglass is open or ajar. If the liftgate or liftglass is opened while the rear wiper is on, the wiper returns to the parked position and stops.

**Rear Camera Mirror Washer :**

If equipped, press REAR on the end of the lever to spray washer fluid on the rear mirror camera lens. See *Rear Camera Mirror* ⇨ *52*.

### Rear Wiper Arm Assembly Protection

When using an automatic car wash, move the rear wiper control to OFF to disable the rear wiper. In some vehicles, if the transmission is in N (Neutral) and the vehicle speed is very slow, the rear wiper will automatically park under the rear spoiler.

The wiper operations return to normal when the transmission is no longer in N (Neutral) or the vehicle speed has increased.

### Reverse Gear Wipes

If the rear wiper control is off, the rear wiper will automatically operate continuously when the shift lever is in R (Reverse), and the front windshield wiper is performing low or high speed wipes. If the rear wiper control is off, the shift lever is in R (Reverse), and the front windshield wiper is performing interval wipes, then the rear wiper automatically performs interval wipes.

This feature can be turned on or off. See *Vehicle Personalization* ⇨ *152*.

The windshield washer reservoir is used for the windshield and the rear window. Check the fluid level in the reservoir if either washer is not working. See *Washer Fluid* ⇨ *278*.

## 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.

## Clock

The infotainment system controls are used to access the time and date settings through the menu system. See “Home Page” in the infotainment manual for information about how to use the menu system.

### Setting the Clock

#### Time

To set the time:

1. From the Home Page, touch SETTINGS, then touch Time and Date.
2. Touch Set Time, then touch + or – to increase or decrease hours or minutes, and change AM or PM.
3. Touch 12-24 Hr for a 12 or 24 hour clock.
4. Touch ❮ Back to go back to the previous menu.

#### Date

To set the date:

1. From the Home Page, touch SETTINGS, then touch Time and Date.
2. Touch Set Date, then touch + or – to increase or decrease month, day, or year.
3. Touch ❮ Back to go back to the previous menu.

### Auto Set

When on, the time and date will automatically update.

To set auto set:

1. From the Home Page, touch SETTINGS, then touch Time and Date.
2. Touch Set Time or Set Date.
3. Touch Auto Set, then select On-Cell Network or Off-Manual to manually set the time and date.
4. Touch ❮ Back to go back to the previous menu.

If auto set is on, the time displayed on the clock may not update immediately when driving into a new time zone. In some regions, auto set may require an active OnStar service plan, if available.

### Clock Display

When on, the digital clock will display on the infotainment screen.

To set the clock display:

1. From the Home Page, touch SETTINGS, then touch Time and Date.
2. Touch Clock Display, then select Off or On.
3. Touch ❮ Back to go back to the previous menu.

## Power Outlets

### Power Outlets 12-Volt Direct Current

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

The vehicle has five accessory power outlets:

- One near the cupholders on the center console
- One inside the center console
- One on the rear of the center console
- One in the third row seat on the driver side
- One in the rear cargo area on the passenger side

Lift the cover to access and replace when not in use.

The accessory power outlets are powered as follows:

- The power outlet near the cupholders on the center console is powered in Retained Accessory Power (RAP) mode. This outlet can be configured to operate using RAP or battery power. If the power outlet is used while in the battery power mode, this could cause interference between the RKE transmitter and the vehicle, and the vehicle may not start. See *Ignition Positions* ⇨ *199*.
- The power outlets inside the center console and on the rear of the center console are powered when the vehicle is started or the ignition is in ACC/ACCESSORY,

or until the driver door is opened within 10 minutes of turning off the vehicle. See *Retained Accessory Power (RAP)* ⇨ *203*.

- The power outlets in the third row seat and in the rear cargo area are powered at all times.

**⚠ Warning**

Power is always supplied to the outlets. Do not leave electrical equipment plugged in when the vehicle is not in use because the vehicle could catch fire and cause injury or death.

**Caution**

Leaving electrical equipment plugged in for an extended period of time while the vehicle is off will drain the battery. Always unplug electrical equipment when not in use and do not plug in equipment that exceeds the maximum 15 amp rating.

Certain power accessory 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* ⇨ *262*.

**Caution**

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.

## Power Outlet 110/120 Volt Alternating Current

This power outlet can be used to plug in electrical equipment that uses a maximum limit of 150 watts.

The 110/120 volt power outlet is on the rear of the center console.

An indicator light on the outlet turns on to show it is in use. The light comes on when the vehicle is started, 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 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 ignition off and then back to on. 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 the following, and may not work properly if they 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 and touch sensor lamps
- Medical equipment.

## Wireless Charging

The vehicle may have wireless charging on top of the center console. See *Center Console Storage* ⇨ *118*. The system operates at 145 kHz and wirelessly charges one Qi compatible mobile device. The power output of the system is capable of charging at a rate up to 1 amp (5W), as requested by the compatible mobile device. See *Radio Frequency Statement* ⇨ *372*.

To check for phone or other device compatibility:

- In the U.S., see my.cadillac.com/learn.
- In Canada, see gmtotalconnect.ca.
- Or, see your dealer for details.

**⚠ Warning**

Wireless charging can affect the operation of an implanted pacemaker or other medical devices. If you have one, it is recommended to consult with your doctor before using the wireless charging system.

The vehicle must be on, in ACC/ACCESSORY, or Retained Accessory Power (RAP) must be active. The wireless charging feature may not correctly indicate charging when the vehicle is in RAP. See *Retained Accessory Power (RAP)* ⇨ *203*.

The operating temperature is –20 °C (–4 °F) to 60 °C (140 °F) for the charging system and 0 °C (32 °F) to 35 °C (95 °F) for the phone.

**⚠ Warning**

Remove all objects from the charging pad before charging your mobile device. Objects, such as

(Continued)

**Warning (Continued)**

coins, keys, rings, paper clips, or cards, between the phone and charging pad will become very hot. On the rare occasion that the charging system does not detect an object, and the object gets wedged between the phone and charger, remove the phone and allow the object to cool before removing it from the charging pad, to prevent burns.

To charge a mobile device:

1. Remove all objects from the charging pad. The system may not charge if there are any objects between the mobile device and charging pad.
2. Place the mobile device face up against the alignment rib on the charge pad.
3. The ⚡ will display on the ☎ on the infotainment screen. This indicates that the mobile device is properly positioned and charging. If a mobile device is placed on the charging pad and ⚡ does not display, remove the mobile device from the pad, turn it 180 degrees, and wait three seconds before placing/aligning the mobile device on the pad again.

### Software Acknowledgements

Certain Wireless Charging Module product from LG Electronics, Inc. ("LGE") contains the open source software detailed below. Refer to the indicated open source licenses (as are included following this notice) for the terms and conditions of their use.

### OSS Notice Information

To obtain the source code that is contained in this product, please visit http://opensource.lge.com. In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download. LG Electronics will also provide open source code to you on CD-ROM for a charge covering the cost of performing such distribution (such as the cost of media, shipping, and handling) upon email request to opensource@lge.com. This offer is valid for three (3) years from the date on which you purchased the product.

### Freescale-WCT library

Copyright (c) 2012-2014 Freescale Semiconductor, Inc.. All rights reserved.

1. Redistributions of source code must retain the above copyright notice, this list of conditions and the following disclaimer.
2. Redistributions in binary form must reproduce the above copyright notice, this list of conditions and the following disclaimer in the documentation and/or other materials provided with the distribution.
3. Neither the name of the copyright holder nor the names of its contributors may be used to endorse or promote products derived from this software without specific prior written permission.

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE COPYRIGHT HOLDER OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED

AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

## Cigarette Lighter

If equipped with a cigarette lighter, it is in the center console near the cupholders. Press on the access door to open it and use the lighter.

To use the cigarette lighter, push it in, and let go. When it is ready, it will pop back out by itself.

**Caution**

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

(Continued)

**Caution (Continued)**

could be blown. Do not hold a cigarette lighter in while it is heating.

## Ashtrays

If equipped, the ashtray is in the center console cupholder.

**Caution**

If papers, pins, or other flammable items are put in the ashtray, hot cigarettes or other smoking materials could ignite them and possibly damage the vehicle. Never put flammable items in the ashtray.

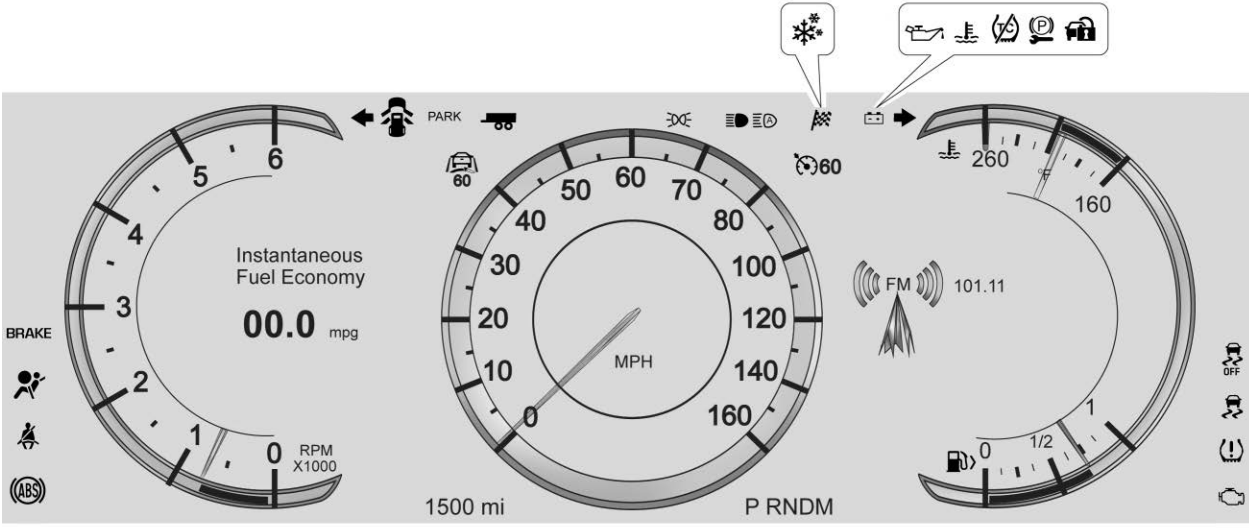
To remove the ashtray, pull it from the cupholder. Push it back down to be sure it is secure.

# 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.

Some warning lights come on briefly when the engine is started to indicate they are working. 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. Waiting to do repairs can be costly and even dangerous.

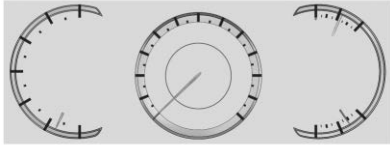
## Instrument Cluster




English Balanced Cluster Shown, Metric Similar

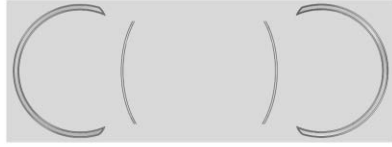
## Reconfigurable Instrument Cluster

The cluster display layout can be changed.



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 Options page in one of the interactive display zones on the cluster.
2. Press SEL to enter the Options 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, select from favorites, 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, select from favorites, or scroll through contacts. If there is an active call, mute the phone or switch to handset operation.

### Cluster Options Menu

To enter the cluster Options menu:

1. Use the five-way control on the right side of the steering wheel to find the Options 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 Options menu.

**Units :** Press SEL while Units is highlighted to enter the Unit menu. Choose US 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)* ⇨ *145*.

**Fav Button Options :** Press SEL while Fav Button Options is highlighted to select between FAV Primary and SEEK Primary. This selection allows for configuration of the △ and ▽ steering wheel controls. When FAV Primary is selected, pressing △ and ▽ will go to the next or previous favorite and pressing and holding △ and ▽ will seek. When SEEK Primary is selected, pressing △ and ▽ will seek and pressing and holding △ and ▽ will go to the next or previous favorite.

**Display Layout :** Press SEL while Display Layout is highlighted to change the configuration of the cluster. See “Reconfigurable Instrument Cluster” earlier in this section.

**Head-up Display (HUD) Rotation :** This feature allows for adjusting the angle of the HUD image. Press SEL on the steering wheel controls while Head-up Display Rotation is highlighted to enter Adjust Mode. Press ∧ or ∨ to adjust the angle of the HUD display. Press < or > to highlight OK, then press SEL to save the setting. Cancel can also be selected to cancel the setting. The vehicle must be in P (Park).

**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.

## Trip Odometer

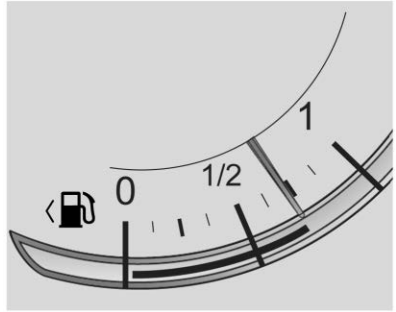
The trip odometer shows how far the vehicle has been driven since the trip odometer was last reset.

The trip odometer is accessed and reset through the Driver Information Center (DIC). See *Driver Information Center (DIC)* ⇨ *145*.

## Tachometer

The tachometer displays the engine speed in revolutions per minute (rpm).

## Fuel Gauge




Balanced Configuration

When the ignition is on, the fuel gauge indicates about how much fuel is left in the tank.

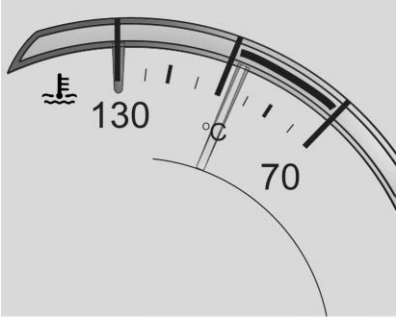
There is an arrow near the fuel gauge pointing to the side of the vehicle the fuel door is on.

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.

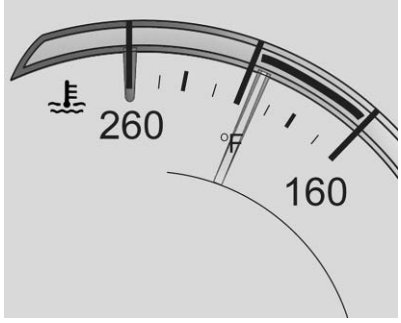
Here are four things that some owners ask about. None of these show a problem with the fuel gauge:

- 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 Balanced Configuration




English Balanced Configuration

This gauge measures the temperature of the vehicle's engine.

While driving under normal operating conditions, if the needle moves into the red area, the engine is too hot. Pull off the road, stop the vehicle, and turn off the engine as soon as possible.

## Seat Belt Reminders

### Driver Seat Belt Reminder Light

There is a driver seat 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 seat 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 seat belt is buckled, neither the light nor the chime comes on.

### Passenger Seat Belt Reminder Light

There is a passenger seat belt reminder light near the passenger airbag status indicator. See *Passenger Sensing System* ⇨ *90*.

When the vehicle is started, this light flashes and a chime may come on to remind passengers to fasten their seat 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 seat belt is buckled, neither the chime nor the light comes on.

The front passenger seat belt reminder 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 reminder light and/or chime, remove the object from the seat or buckle the seat 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), the 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* ⇨ *84*.

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 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.

## Passenger Airbag Status Indicator

The vehicle has a passenger sensing system. See *Passenger Sensing System* ⇨ *90* for important safety information. The passenger airbag status indicator is in the overhead console.

United States

Canada and Mexico

When the vehicle is started, the passenger airbag status indicator will light ON and OFF, or the symbols 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.

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 is allowed to inflate.

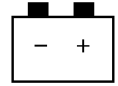
If the word OFF or the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the front outboard passenger frontal airbag.

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, have the vehicle serviced right away. See *Airbag Readiness Light* ⇨ *135* for more information, including important safety information.

## Charging System Light




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.

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.

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 (Check Engine Light)

This light is part of the vehicle's emission control on-board diagnostic system. If this light is on while the engine is running, a malfunction has been detected and the vehicle may require service. The light should come on to show that it is working when the ignition is in Service Mode. See *Ignition Positions* ⇨ *199*.

Malfunctions are often indicated by the system before any problem is noticeable. Being aware of the light and seeking service promptly when it comes on may prevent damage.

**Caution**

If the vehicle is driven continually with this light on, the emission control system may not work as well, the fuel economy may be lower, and the vehicle may not run smoothly. This could lead to costly repairs that might not be covered by the vehicle warranty.

**Caution**

Modifications to the engine, transmission, exhaust, intake, or fuel system, or the use of replacement tires that do not meet the original tire specifications, can cause this light to come on. This could lead to costly repairs not covered by the vehicle warranty. This could also affect the vehicle's ability to pass an Emissions Inspection/Maintenance test. See *Accessories and Modifications* ⇨ *265*.

**If the light is flashing :** A malfunction has been detected that could damage the emission control system and increase vehicle emissions. Diagnosis and service may be required.

To help prevent damage, reduce vehicle speed and avoid hard accelerations and uphill grades. If towing a trailer, reduce the amount of cargo being hauled as soon as possible.

If the light continues to flash, find a safe place to park. Turn the vehicle off and wait at least 10 seconds before restarting the engine. If the light is still flashing, follow the previous guidelines and see your dealer for service as soon as possible.

**If the light is on steady :** A malfunction has been detected. Diagnosis and service may be required.

Check the following:

- If fuel has been added to the vehicle using the capless fuel funnel adapter, make sure that it has been removed. See "Filling the

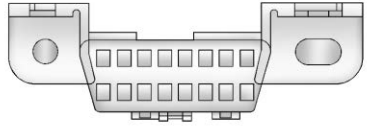
Tank with a Portable Gas Can" under *Filling the Tank* ⇨ *249*. The diagnostic system can detect if the adapter has been left installed in the vehicle, allowing fuel to evaporate into the atmosphere. A few driving trips with the adapter removed may turn off the light.

- Poor fuel quality can cause inefficient engine operation and poor driveability, which may go away once the engine is warmed up. If this occurs, change the fuel brand. It may require at least one full tank of the proper fuel to turn the light off. See *Fuel* ⇨ *248*.

If the light remains on, see your dealer.

### Emissions Inspection and Maintenance Programs

If the vehicle requires an Emissions Inspection/Maintenance test, the 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. Connecting devices that are not used to perform an Emissions Inspection/Maintenance test or to service the vehicle may affect vehicle operation. See *Add-On Electrical Equipment* ⇨ *262*. See your dealer if assistance is needed.

The vehicle may not pass inspection if:

- The light is on when the engine is running.
- The light does not come on when the ignition is in Service Mode.
- Critical emission control systems have not been completely diagnosed. If this happens, the vehicle would not be ready for inspection and might require several days of routine driving before the system is ready for inspection. This can happen if the 12-volt battery has recently been replaced or run down, or if the vehicle has been recently serviced.

See your dealer if the vehicle will not pass or cannot be made ready for the test.

## 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.

Metric

BRAKE

English

This light should come on briefly when the engine is started. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

If the light comes on and stays on, there is a 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

Metric

PARK

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. A message may also display in the Driver Information Center (DIC).

If the light does not come on, or remains flashing, see your dealer.

## Service Electric Parking Brake Light

If this light comes on and 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* ⇨ *216*. A message may also display in the Driver Information Center (DIC).

## 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 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* ⇨ *138*.

## Sport Mode Light

This light comes on when Sport mode is selected. See *Magnetic Ride Control* ⇨ *221*.

## Tow/Haul Mode Light

For vehicles with the Tow/Haul Mode feature, this light comes on when the Tow/Haul Mode has been activated.

See *Tow/Haul Mode* ⇨ *210*.

## Winter Driving Mode Light

This light comes on when Snow/Ice mode is selected. See *Magnetic Ride Control* ⇨ *221*.

## Lane Keep Assist (LKA) Light

This light is green if LKA is available to assist.

LKA may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking without using the turn signal in that direction. The LKA light will turn amber.

This light is amber and flashes as a Lane Departure Warning (LDW) alert, to indicate that the lane marking has been crossed.

See *Lane Keep Assist (LKA)* ⇨ *246*.

## Vehicle Ahead Indicator

If equipped, this indicator will display green when a vehicle is detected ahead and amber when you are following a vehicle ahead much too closely.

See *Forward Collision Alert (FCA) System* ⇨ *240*.

## 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.

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/Electronic Stability Control* ⇨ *218*.

## 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 StabiliTrak and TCS are 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/Electronic Stability Control* ⇨ *218*.

## Traction Control System (TCS)/StabiliTrak Light

This 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 Driver Information Center (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 light is on and flashing, the TCS and/or the StabiliTrak system is actively working.

See *Traction Control/Electronic Stability Control* ⇨ *218*.

## Engine Coolant Temperature Warning Light

This light comes on briefly while starting the vehicle.

If it does not, have the vehicle serviced by your dealer. If the system is working normally the indicator light goes off.

**Caution**

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* ⇨ *276*.

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* ⇨ *276*.

## 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. Stop as soon as possible, and inflate

the tires to the pressure value shown on the Tire and Loading Information label. See *Tire Pressure* ⇨ *305*.

### 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* ⇨ *308*.

## Engine Oil Pressure Light

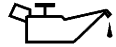
**Caution**

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

(Continued)

**Caution (Continued)**

vehicle serviced. Always follow the maintenance schedule for changing engine oil.



This 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.

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

The security 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.

If the light stays on and the engine does not start, there could be a problem with the theft-deterrent system. See *Immobilizer Operation* ➪ *48*.

## High-Beam On Light

This light comes on when the high-beam headlamps are in use. See *Headlamp High/Low-Beam Changer* ➪ *166*.

### IntelliBeam Light

This light comes on when the IntelliBeam system, if equipped, is enabled. See *Exterior Lamp Controls* ➪ *164*.

## Lamps On Reminder

This light comes on when the exterior lamps are in use. See *Exterior Lamp Controls* ➪ *164*.

## 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* ➪ *222*.

### Adaptive Cruise Control Light

This light is white when the Adaptive Cruise Control (ACC, if equipped) is on and ready, and turns green when the ACC is set and active. See *Adaptive Cruise Control* ➪ *225*.

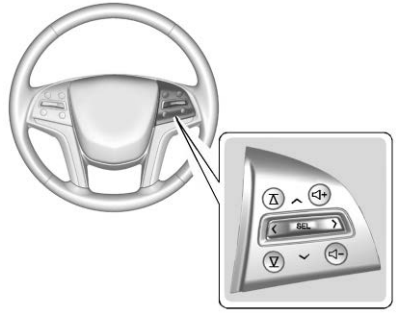
## Door Ajar Light

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.

# 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 :** 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.

**Trip 1 or Trip 2 and Average Fuel Economy :** 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. This number reflects only the approximate average fuel economy that the vehicle has right now, and will change as driving conditions change. The Average Fuel Economy can be reset along with the trip odometer by pressing and holding SEL while this display is active.

Also shows if the Active Fuel Management is active and in V4 mode, or inactive and in V8 mode. See *Active Fuel Management* ⇨ *205*.

**Fuel Range :** 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.

**Instantaneous Fuel Economy :** Shows the current fuel economy in either liters per 100 kilometers (L/100 km) or miles per gallon (mpg). This number reflects only the approximate fuel economy that the vehicle has right now and changes frequently as driving conditions change.

**Average Speed :** 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.

**Turn Arrow :** Shows the next maneuver when using route guidance.

**Estimated Time to Arrival :** Shows the estimated time until arrival at your destination.

**Distance to Destination :** Shows the distance to the destination when using route guidance.

**Speed Limit :** Shows the current speed limit. The information for this page comes from a roadway database.

**Speed Warning :** 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 :** Shows the speed the cruise control or Adaptive Cruise Control is set to.

**Follow Distance Indicator :** When Adaptive Cruise Control (ACC) is not engaged, the current follow time to the vehicle ahead is displayed as a time value on this page. When ACC has been engaged, the display switches to the gap setting page. This page shows the current gap setting along with the vehicle ahead indicator.

**Battery Voltage :** Shows the current battery voltage.

**Oil Life :** 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. The oil should be changed as soon as possible. See *Engine Oil* ⇨ *268*. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended. See *Maintenance Schedule* ⇨ *347*.

The Oil Life display must be reset after each oil change. It will not reset itself. Do not 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* ⇨ *270*.

**Oil Pressure :** Shows the engine oil pressure in kPa (kilopascals) or psi (pounds per square inch).

**Engine Hours :** Shows the total number of hours the engine has run.

**Transmission Fluid Temperature :** Shows the temperature of the automatic transmission fluid in either degrees Celsius (°C) or degrees Fahrenheit (°F).

**Tire Pressure :** 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* ⇨ *307* and *Tire Pressure Monitor Operation* ⇨ *308*.

**Blank Page :** 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.

If equipped with HUD, some information concerning the operation of the vehicle is projected onto the windshield. The image is projected through the HUD lens on top of the

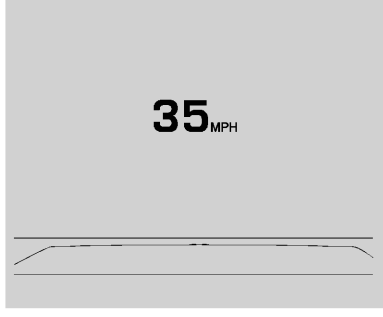
instrument panel. The information appears as an image focused out toward the front of the vehicle.

**Caution**

If you try to use the HUD image as a parking aid, you may misjudge the distance and damage your vehicle. Do not use the HUD image as a parking aid.

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* ⇨ *152* and "Cluster Settings Menu" under *Instrument Cluster* ⇨ *130*.




HUD Display on the Vehicle Windshield

The HUD may display some of the following vehicle information and vehicle messages or alerts:

- Speed
- Tachometer
- Audio
- Phone
- Navigation
- Collision Alert
- Cruise Control
- Lane Departure
- Low Fuel

Some vehicle messages or alerts displayed in the HUD may be cleared by using the steering wheel controls. See *Vehicle Messages* ⇨ *151*.

Some information shown may not be available on your vehicle if it is not equipped with these features.

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.
3. Use the following settings to adjust the HUD.

HUD : 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 : Press to select the display view. Each press will change the display view.

±☼ : Lift up and hold to brighten the display. Press down and hold to dim the display. Hold down to turn the display off.

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.

### Head-Up Display (HUD) Rotation Option

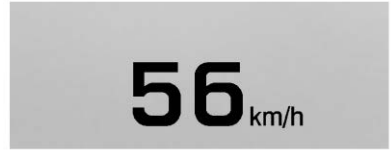
This feature allows for adjusting the angle of the HUD image.

Press SEL on the steering wheel controls while Head-up Display Rotation is highlighted to enter Adjust Mode. Press ∧ or ∨ to adjust the angle of the HUD display. Press < or > to highlight OK, then press SEL to save the setting. CANCEL can also be selected to cancel the setting. The vehicle must be in P (Park). See *Instrument Cluster* ⇨ *130*.

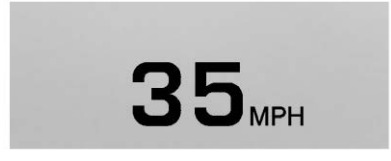
Press SEL on the steering wheel controls while Head-up Display Rotation is highlighted to enter Adjust Mode. Press ∧ or ∨ to adjust the angle of the HUD display. Press < or > to highlight OK, then press SEL to save the setting. CANCEL can also be selected to cancel the setting. The vehicle must be in P (Park). See *Instrument Cluster* ⇨ *130*.

### HUD Views

There are four views in the HUD. Some vehicle information and vehicle messages or alerts may be displayed in any view.



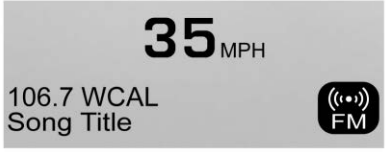

Metric




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



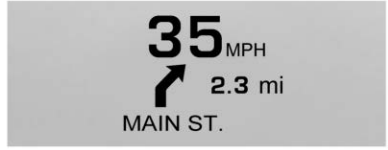

English

**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.

All HUD views may briefly display audio information when the driver uses the steering wheel controls to adjust the audio settings appearing in the instrument cluster.

Incoming phone calls appearing in the instrument cluster may also display in any HUD view.

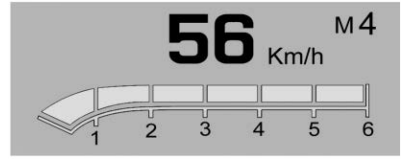
Metric



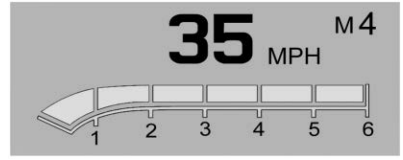

English

**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.

Navigation Turn-by-Turn Alerts shown in the instrument cluster may also be displayed in any HUD view.




Metric




English

**Performance View :** This displays the speedometer reading, rpm reading, transmission positions, and gear shift indicator.

## 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* ⇨ *285*.

# 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 appear one after another.

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; clearing the message does not correct the problem.

If a SERVICE message appears, see your dealer.

Follow the instructions given in the messages. The system displays messages regarding the following topics:

- Service Messages
- Fluid Levels
- Vehicle Security
- Brakes
- Ride Control Systems
- Driver Assistance Systems
- Cruise Control
- Lighting and Bulb Replacement
- Wiper/Washer Systems
- Doors and Windows
- Seat Belts
- Airbag Systems
- Engine and Transmission
- Tire Pressure
- Battery

## Engine Power Messages

### ENGINE POWER IS REDUCED

This message displays when the vehicle's propulsion power is reduced. Reduced propulsion power can affect the vehicle's ability to accelerate.
If this message is on, but there is no observed reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven while this message is

on, but maximum acceleration and speed may be reduced. Anytime this message stays on, or displays repeatedly, the vehicle should be taken to your dealer for service as soon as possible.

## Vehicle Speed Messages

### SPEED LIMITED TO XXX KM/H (MPH)

This message shows that the vehicle speed has been limited to the speed displayed. The limited speed is a protection for various propulsion and vehicle systems, such as lubrication, thermal, suspension, Teen Driver if equipped, or tires.

# Vehicle Personalization

Use the audio system controls to access the personalization menus for customizing vehicle features.

The following are all possible personalization features. Depending on the vehicle, some may not be available.

### Audio System Controls

1. Touch the desired feature to display a list of available options.
2. Touch to select the desired feature setting.
3. Touch < Back to return to the previous menu or exit.

Touch SETTINGS from the Home Page on the infotainment display.

### Personalization Menus

The following list of menu items may be available:

- Time and Date
- Rear Seat Reminder
- Language
- Video Voice-Over
- Valet Mode
- Teen Driver
- Radio
- Vehicle
- Bluetooth
- Apple CarPlay
- Android Auto
- Voice
- Display
- Rear Camera
- Return to Factory Settings
- Software Information
- Wi-Fi

Detailed information for each menu follows.

### Time and Date

Manually set the time and date. See *Clock* ⇨ *124*.

### Rear Seat Reminder

This allows for a chime and a message when the rear door has been opened before or during operation of the vehicle.

Select Off or On.

### Language

Select Language, then select from the available language(s).

The selected language will display on the system, and voice recognition will reflect the selected language.

### Video Voice-Over

When activated, the RSI will read aloud menu titles, menu listings, pop-ups, alerts, and file titles from audio and video media.

Select Off or On.

### Valet Mode

This will lock the infotainment system and steering wheel controls. It may also limit access to vehicle storage locations, if equipped.

To enable valet mode:

1. Enter a four-digit code on the keypad.
2. Select Enter to go to the confirmation screen.
3. Re-enter the four-digit code.

Touch LOCK or UNLOCK to lock or unlock the system. Touch Back to go back to the previous menu.

### Teen Driver

See “Teen Driver” under “Settings” in the infotainment manual.

### Radio

Select to display the Radio menu and the following may display:

- Manage Favorites
- Number of Favorites Shown
- Audible Touch Feedback
- Bose AudioPilot
- Auto Volume
- Maximum Startup Volume
- Audio Cue Volume

#### Manage Favorites

This allows favorites to be edited. See “Manage Favorites” in “Settings” under “Radio” in the infotainment manual.

#### Number of Favorites Shown

Touch to set the number of favorites to display.

Select the desired number or select Auto and the infotainment system will automatically adjust the number of favorites shown.

#### Audible Touch Feedback

This allows Audible Touch Feedback to be turned on or off.

Select Off or On.

#### Bose AudioPilot

This allows Bose AudioPilot to be turned on or off.

Select Off or On.

#### Auto Volume

This feature adjusts the volume based on vehicle speed and ambient noise.

Select Off, Low, Medium-Low, Medium, Medium-High, or High.

### Maximum Startup Volume

This feature sets the maximum startup volume. If the vehicle is started and the volume is greater than this level, the volume is adjusted to this level. To set the maximum startup volume, touch + or – to increase or decrease.

### Audio Cue Volume

This feature sets the volume of audio files played at system startup and shutdown.

Select On, then touch + or – to increase or decrease the volume.

## Vehicle

Select and the following may display:

- Climate and Air Quality
- Collision/Detection Systems
- Comfort and Convenience
- Lighting
- Power Door Locks
- Remote Lock, Unlock, Start

## Climate and Air Quality

Select and the following may display:

- Auto Fan Speed
- Auto Cooled Seats
- Auto Heated Seats
- Auto Defog
- Auto Rear Defog

### Auto Fan Speed

This feature will set the auto fan speed.

Select Low, Medium, or High.

### Auto Cooled Seats

When enabled, this feature will automatically activate the cooled seats at the level required by the interior temperature. See *Heated and Cooled Front Seats* ⇨ *67*.

Select Off or On.

### Auto Heated Seats

When the vehicle is on, this feature will automatically activate the heated seats at the level required by the vehicle's interior temperature. See *Heated and Cooled Front Seats* ⇨ *67*.

Select Off or On.

### Auto Defog

When set to On, the auto defog comes on when the climate control sensor detects high interior humidity. Air will be directed to the windshield.

Select Off or On.

### Auto Rear Defog

If equipped, this feature will automatically turn on the rear window defogger when the vehicle is first started in cold weather and turn off when the vehicle is warmed.

Select Off or On.

## Collision/Detection Systems

Select the Collision/Detection Systems menu and the following may display:

- Alert Type
- Forward Collision System
- Rear Cross Traffic Alert
- Adaptive Cruise Go Notifier
- Park Assist
- Lane Change Alert

### Alert Type

This feature will set crash alerts to beeps or seat vibrations. This setting affects all crash alerts including Forward Collision Alert, Lane Departure Warning, and Park Assist alerts. See *Driver Assistance Systems* ⇨ *233*.

Select Beeps or Safety Alert Seat.

### Forward Collision System

This feature will turn on or off Forward Collision Alert (FCA) and Forward Automatic Braking (FAB). The Off setting disables all FCA and FAB functions. With the Alert and Brake setting, both FCA and FAB are available. The Alert setting disables FAB. See *Forward Automatic Braking (FAB)* ⇨ *242*.

Select Off, Alert and Brake, or Alert.

### Rear Cross Traffic Alert

This allows the Rear Cross Traffic Alert feature to be turned on or off. See *Assistance Systems for Parking or Backing* ⇨ *233*.

Select Off or On.

### Adaptive Cruise 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.

Select Off or On.

### Park Assist

If equipped, this allows the feature to be turned on or off. See *Assistance Systems for Parking or Backing* ⇨ *233*.

Select Off, On, or On with Towbar Attached.

### Lane Change Alert

This allows the feature to be turned on or off. See *Lane Change Alert (LCA)* ⇨ *244*.

Select Off or On.

## Comfort and Convenience

Select and the following may display:

- Auto Running Boards
- Auto Memory Recall
- Easy Exit Options
- Chime Volume
- Hands Free Liftgate Control
- Reverse Tilt Mirror
- Auto Mirror Folding
- Auto Wipe in Reverse Gear

### Auto Running Boards

This allows the feature to be turned on or off. See *Power Assist Steps* ⇨ *45*.

Select Off, On, or Extended.

### Auto Memory Recall

This feature automatically recalls the current driver's previously stored 1 or 2 button positions when the ignition is changed from off to on or ACC/ACCESSORY. See *Memory Seats* ⇨ *63*.

Select On or Off.

### Easy Exit Options

This feature automatically recalls the previously stored exit button position when exiting the vehicle. See *Memory Seats* ⇨ *63*.

Select Off or On.

### Chime Volume

This allows the selection of the chime volume level.

Touch + or – to adjust the volume.

### Hands Free Liftgate Control

The liftgate may be operated with a kicking motion under the rear bumper. See *Liftgate* ⇨ *41*.

Select Off, On-Open and Close, or On-Open Only.

### Reverse Tilt Mirror

When on, the driver and/or passenger mirrors will tilt downward when the vehicle is shifted to R (Reverse) to improve visibility of the ground near the rear wheels. See *Reverse Tilt Mirrors* ⇨ *51*.

Select Off, On - Driver and Passenger, On - Driver, or On - Passenger.

### Auto Mirror Folding

When on, the outside mirrors will automatically fold or unfold when the Remote Keyless Entry (RKE) transmitter 🔒 or 🔓 button is pressed and held. See *Folding Mirrors* ⇨ *50*.

Select Off or On.

### Auto Wipe in Reverse Gear

When on and the front wiper is on, the rear wiper will automatically activate when the vehicle is shifted to R (Reverse).

Select Off or On.

## Lighting

Select the Lighting menu and the following may display:

- Vehicle Locator Lights
- Exit Lighting

### Vehicle Locator Lights

This feature will flash the exterior lamps and allows some of the exterior lamps and most of the interior lamps to turn on briefly when 🔓 on the Remote Keyless Entry (RKE) transmitter is pressed to locate the vehicle.

Select On or Off.

### Exit Lighting

This allows the selection of how long the exterior lamps stay on when leaving the vehicle when it is dark outside.

Select Off, 30 Seconds, 60 Seconds, or 120 Seconds.

## Power Door Locks

Select Power Door Locks and the following may display:

- Unlocked Door Anti-Lockout
- Auto Door Unlock
- Delayed Door Lock

### Unlocked Door Anti-Lockout

When on, this feature will keep the driver door from locking when the vehicle is off, the driver door is open, and locking is requested. All the doors will lock and only the driver door will unlock. See *Lockout Protection* ⇨ *40*.

If Off is selected, the Delayed Door Lock menu will be available.

Select Off or On.

### Auto Door Unlock

This allows selection of which of the doors will automatically unlock when the vehicle is shifted into P (Park).

Select Off, All Doors, or Driver Door.

### 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.

Select Off or On.

## Remote Lock, Unlock, Start

Select Remote Lock, Unlock, Start and the following may display:

- Remote Unlock Light Feedback
- Remote Lock Feedback
- Remote Door Unlock
- Remote Start Auto Cool Seats
- Remote Start Auto Heat Seats
- Remote Window Operation
- Passive Door Unlock
- Passive Door Lock
- Remote Left in Vehicle Alert

### Remote Unlock Light Feedback

When on, the exterior lamps will flash when unlocking the vehicle with the RKE transmitter.

Select Off or Flash Lights.

### Remote Lock Feedback

This allows selection of what type of feedback is given when locking the vehicle with the RKE transmitter.

Select Off, Lights and Horn, Lights Only, or Horn Only.

### Remote Door Unlock

This allows selection of which doors will unlock when pressing 🔓 on the RKE transmitter.

Select All Doors or Driver Door.

### Remote Start Auto Cool Seats

If equipped and turned on, this feature will turn the cooled seats on when using remote start on warm days.

Select Off or On.

### 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.

Select Off or On.

### Remote Window Operation

This allows the windows to be opened when pressing 🔓 on the RKE transmitter. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

Select Off or On.

### Passive Door Unlock

This allows the selection of what doors will unlock when using the button on the driver door to unlock the vehicle.

Select All Doors or Driver Door.

### Passive Door Lock

This allows passive locking to be turned on or off and selects feedback. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

Select Off, On with Horn Chirp, or On.

### Remote Left in Vehicle Alert

This feature sounds an alert when the RKE transmitter is left in the vehicle. This menu also enables Remote No Longer in Vehicle Alert.

Select Off or On.

## Bluetooth

Select and the following may display:

- Pair New Device
- Device Management
- Ringtones
- Voice Mail Numbers
- Text Message Alerts

### Pair New Device

Select to pair a new device. See “Pairing” under “Bluetooth (Infotainment Controls)” in the infotainment manual.

### Device Management

Select to connect to a different phone source, disconnect a phone, or delete a phone.

### Ringtones

Select to change the ring tone for the specific phone. The phone does not need to be connected to change the ring tone.

### Voice Mail Numbers

This feature displays the voice mail number for all connected phones. To change the voice mail number, select EDIT. Type a new number, then select SAVE.

### Text Message Alerts

This feature allows text messages to be received. See “Text Messaging” under “Phone” in the infotainment manual.

Select Off or On.

## Apple CarPlay

Select and the following may display:

- Apple CarPlay
- Manage Apple CarPlay Devices

### Apple CarPlay

This feature allows Apple devices to be connected to the infotainment system through a USB port.

Select Off or On.

### Manage Apple CarPlay Devices

Select to manage Apple devices. Apple CarPlay must be on for this feature to be accessed.

## Android Auto

Select and the following may display:

- Android Auto
- Manage Android Auto Devices

### Android Auto

This feature allows Android devices to be connected to the infotainment system through a USB port.

Select Off or On.

### Manage Android Auto Devices

Select to manage Android devices. Android Auto must be on for this feature to be accessed.

## Voice

Select and the following may display:

- Confidence Threshold
- Prompt Length
- Audio Feedback Speed
- Display “What Can I Say?” Tips

### Confidence Threshold

This feature allows the adjustment of the sensitivity of the speech recognition system.

Select Confirm More or Confirm Less.

### Prompt Length

This feature adjusts the voice prompt length.

Select Short or Long.

### Audio Feedback Speed

This feature adjusts the audio feedback speed.

Select Slow, Medium, or Fast.

### Display “What Can I Say?” Tips

This feature gives voice command tips.

Select Off or On.

## Display

Select and the following may display:

- Mode
- Proximity Sensing
- Calibrate Touchscreen
- Turn Display Off

### Mode

Select to change the display of the infotainment system.

Select Auto, Day, or Night.

### Proximity Sensing

This allows the feature to be turned on or off.

Select Off, On, or On-Map Only.

### Calibrate Touchscreen

Select to calibrate the touchscreen, then follow the prompts.

### Turn Display Off

Select to turn the display off. Touch anywhere on the infotainment display area or press any controls on the radio center stack to turn the display on.

## Rear Camera

Select and the following may display:

- Guidance Lines
- Rear Park Assist Symbols

### Guidance Lines

Select to turn Off or On. See *Assistance Systems for Parking or Backing* ⇨ *233*.

### Rear Park Assist Symbols

Select to turn Off or On. See *Assistance Systems for Parking or Backing* ⇨ *233*.

## Return to Factory Settings

Select and the following may display:

- Restore Vehicle Settings
- Clear All Private Data
- Restore Radio Settings

### Restore Vehicle Settings

This allows selection of restoring vehicle settings.

Select Restore or Cancel.

### Clear All Private Data

This allows selection to clear all private information from the vehicle.

Select Delete or Cancel.

### Restore Radio Settings

This allows selection to restore radio settings.

Select Restore or Cancel.

## Software Information

Select to view the infotainment system current software information.

## Wi-Fi

Select and the following may display:

- Wi-Fi
- Manage Wi-Fi Networks

### Wi-Fi

This feature allows Wi-Fi networks to be turned off or on.

Select Off or On.

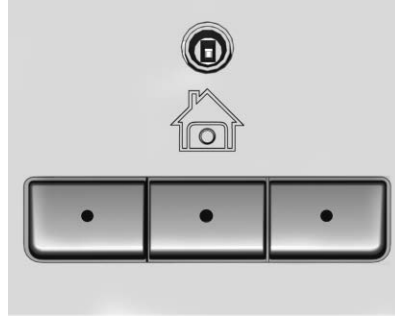
### Manage Wi-Fi Networks

Select to manage Wi-Fi networks. Wi-Fi must be on for this feature to be accessed.

# Universal Remote System

See *Radio Frequency Statement* ➪ *372*.

## Universal Remote System Programming



If equipped, these buttons are in the overhead console.

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

instructions refer to a garage door opener, but can be used for other 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 programming the Universal Remote system. It may help to have another person assist with the programming process.

Keep the original hand-held transmitter for use in other vehicles as well as for future programming. Erase the programming when vehicle ownership is terminated. See “Erasing Universal Remote System Buttons” later in this section.

To program a garage door opener, park outside directly in line with and facing the garage door opener receiver. Clear all people and objects near the garage door.

Make sure the hand-held transmitter has a new battery for quick and accurate transmission of the radio-frequency signal.

## Programming the Universal Remote System

For questions or programming help, see www.homelink.com/gm or call 1-800-355-3515.

Programming involves time-sensitive actions, and may time out causing the procedure to be repeated.

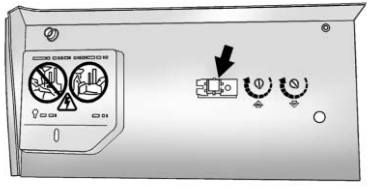
To program up to three devices:

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 with the indicator light in view. The hand-held transmitter was supplied by the manufacturer of the garage door opener receiver.
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 either button until the indicator light goes from a slow to a rapid flashing light. Then release both buttons.

   Some garage door openers may require substitution of Step 2 with the procedure under “Radio Signals for Canada and Some Gate Operators” later in this section.
3. Press and hold the newly programmed Universal Remote system button for five seconds while watching the indicator light and garage door activation.
   - If the indicator light stays on continuously or the garage door moves when the button is pressed, then programming is complete. There is no need to complete Steps 4–6.
   - If the indicator light does not come on or the garage door does not move, a second button press may be required. For a second time, press and hold the newly programmed button for

five seconds. If the light stays on or the garage door moves, programming is complete.

- If the indicator light blinks rapidly for two seconds, then changes to a solid light and the garage door does not move, continue with programming Steps 4–6.



Learn or Smart Button

4. After completing Steps 1–3, locate the Learn or Smart button inside the garage on the garage door opener receiver. The name and color of the button may vary by manufacturer.
5. Press and release the Learn or Smart button. Step 6 must be completed within 30 seconds of pressing this button.
6. Inside the vehicle, press and hold the newly programmed Universal Remote system button for two seconds and then release it. If the garage door does not move or the lamp on the garage door opener receiver 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 it.

The Universal Remote system should now activate the garage door.

Repeat the process for programming the two remaining buttons.

## Radio Signals for Canada and Some Gate Operators

For questions or programming help, see www.homelink.com/gm or call 1-800-355-3515.

Canadian radio-frequency laws and some U.S. gate operators 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.

If the programming did not work, replace Step 2 under “Programming the Universal Remote System” with the following:

Press and hold the Universal Remote system button while pressing and releasing the hand-held transmitter button every two seconds until the 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 one-half second. The indicator light will come on while the signal is being transmitted.

## Erasing Universal Remote System Buttons

Erase all programmed buttons when vehicle ownership is terminated.

To erase:

1. Press and hold 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 system buttons:

1. Press and hold any one of the buttons. 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.”

# Lighting


## Exterior Lighting

Exterior Lamp Controls ..... 164
Exterior Lamps Off Reminder ... 166
Headlamp High/Low-Beam Changer ..... 166
Flash-to-Pass ..... 166
Daytime Running Lamps (DRL) ..... 166
Automatic Headlamp System ... 167
Hazard Warning Flashers ..... 168
Turn and Lane-Change Signals ..... 168
Cornering Lamps ..... 169

## Interior Lighting

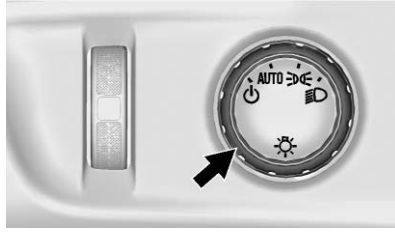
Instrument Panel Illumination Control ..... 169
Dome Lamps ..... 169
Reading Lamps ..... 170

## Lighting Features

Entry Lighting ..... 170
Exit Lighting ..... 170
Battery Load Management ..... 171
Battery Power Protection ..... 171
Exterior Lighting Battery Saver ..... 171


# Exterior Lighting

## Exterior Lamp Controls




The exterior lamp control is on the instrument panel to the left of the steering wheel.

Turn the control to the following positions:

⏻ **:** Turns off the automatic headlamps and Daytime Running Lamps (DRL). Turning the headlamp control to ⏻ again will turn the automatic headlamps and DRL back on.

For vehicles first sold in Canada, the off position only works when the vehicle is shifted into the P (Park) position.

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

**:** Turns on the parking lamps including all lamps, except the headlamps.

**:** Turns on the headlamps together with the parking lamps and instrument panel lights.

When the headlamps are turned on while the vehicle is on, the headlamps will turn off automatically 10 minutes after the ignition is turned off. When the headlamps are turned on while the vehicle is off, the headlamps will stay on for 10 minutes before automatically turning off to prevent the battery from being drained. Turn the headlamp control to off and then back to the headlamp on position to make the headlamps stay on for an additional 10 minutes.

## IntelliBeam® System

If equipped, 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 IntelliBeam system is enabled.

### Turning On and Enabling IntelliBeam

To enable the IntelliBeam 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 IntelliBeam

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, which 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 occurs:

- 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 IntelliBeam 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 on then off within two seconds to reactivate the IntelliBeam system. The instrument cluster light will come on to indicate the IntelliBeam is reactivated.

  See *Headlamp High/Low-Beam Changer* ➪ *166* and *Flash-to-Pass* ➪ *166*.

The high beams may not turn off automatically if the system cannot detect other 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.

- The vehicle is being driven on winding or hilly roads.

The automatic high-beam headlamps may need to be disabled if any of the above conditions exist.

## Exterior Lamps Off Reminder

If a door is open, a reminder chime sounds when the headlamps or parking lamps are manually turned on and the ignition is off. To turn off the chime, turn the exterior lamp control to off or AUTO and then back on, or close and re-open the door. In the AUTO mode, the headlamps turn off once the ignition is off or remain on until the headlamp delay ends (if enabled in the DIC). See “Exit Lighting” under *Vehicle Personalization* ⇨ *152*.

## Headlamp High/Low-Beam Changer

Push the turn signal lever toward the instrument panel to change the headlamps from low to high beam. Pull the turn signal lever toward you and release it to return to low-beam headlamps.

When the high-beam headlamps are on, this indicator light on the instrument cluster will also be on.

## Flash-to-Pass

This feature lets you use the high-beam headlamps to signal a driver in front of you that you want to pass. It works even if the headlamps are in the automatic position.

To use it, pull the turn signal lever toward you, then release it.

If the headlamps are in the automatic position or on low beam, the high-beam headlamps will turn on. They will stay on as long as you hold the lever toward you. The high-beam indicator on the instrument cluster will come on. Release the lever to return to normal operation.

## Daytime Running Lamps (DRL)

DRL can make it easier for others to see the front of the vehicle during the day. Fully functional DRL are required on all vehicles first sold in Canada.

The DRL system comes on when the following conditions are met:

- The ignition is on.
- The exterior lamp control is in AUTO.
- The transmission is not in P (Park).
- The light sensor determines it is daytime.

When the DRL system is on, only the DRL are on. The taillamps, sidemarker lamps, instrument panel lights, and other lamps will not be on.

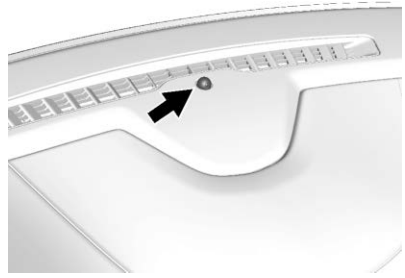
When it begins to get dark, the automatic headlamp system switches from DRL to the headlamps.

To turn off the DRL, turn the exterior lamp control to ⏻ and then release. For vehicles first sold in Canada, off will only work when the vehicle is parked.

## Automatic Headlamp System

When it is dark enough outside, the automatic headlamp system turns on the headlamps at the normal brightness, along with the taillamps, sidemarker, parking lamps, and the instrument panel lights. The radio lights will also be dim.

To turn off the automatic headlamp system, turn the exterior lamp control to ⏻ and then release it.



The vehicle has a light sensor on the top of the instrument panel that controls the automatic headlamp system. Do not cover the sensor, otherwise the headlamps may come on when they are not needed.

The system may also turn on the headlamps when driving through a parking garage, heavy overcast weather, or a tunnel. This is normal.

There is a delay in the transition between the daytime and nighttime operation of the automatic headlamp system so that driving under bridges or bright overhead street lights does not affect the system. The automatic headlamp system is only affected when the light sensor detects a change in lighting lasting longer than the delay.

If the vehicle is started in a dark garage, the automatic headlamp system will come on immediately. Once the vehicle leaves the garage, it takes approximately one minute for the automatic headlamp system to change if it is bright enough outside. During that delay, the instrument cluster may not be as bright as usual. Make sure the instrument panel brightness control is in the full bright position. See *Instrument Panel Illumination Control* ➪ *169*.

To idle the vehicle with the automatic headlamp system off, turn the control to the off position.

The headlamps will also stay on after you exit the vehicle.

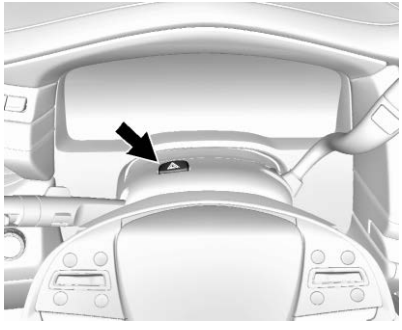
The regular headlamp system can be turned on when needed.

### 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 ≋ to disable this feature.

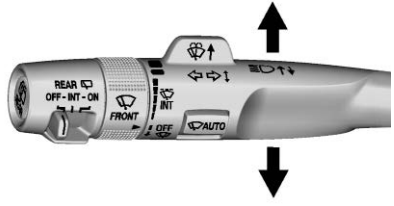
## Hazard Warning Flashers



⚠ **:** Press to make the front and rear turn signal lamps flash on and off. Press again to turn the flashers off.

When the hazard warning flashers are on, the vehicle's turn signals will not work.

## Turn and Lane-Change Signals




An arrow on the instrument cluster flashes in the direction of the turn or lane change.

Move the turn signal lever all the way up or down to signal a turn.

Raise or lower the lever for less than one second until the arrow starts to flash to signal a lane change. This causes the turn signals to automatically flash three times. It will flash six times if Tow/Haul Mode is active. Holding the turn signal lever for more than one second will cause the turn signals to flash until the lever is released.

The lever returns to its starting position whenever it is released.

If after signaling a turn or a lane change the arrows flash rapidly or do not come on, a signal bulb could be burned out.

Replace any burned out bulbs. If a bulb is not burned out, check the fuse. See *Fuses and Circuit Breakers* ⇨ *288*.

### Turn Signal On Chime

If the turn signal is left on for more than 1.2 km (0.75 mi), a chime sounds at each flash of the turn signal. The message TURN SIGNAL ON will also appear in the Driver Information Center (DIC). To turn the chime and message off, move the turn signal lever to the off position.

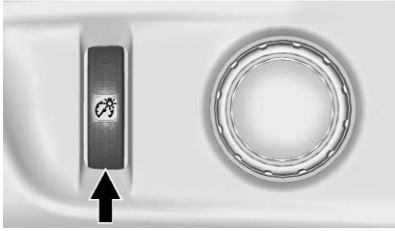
## Cornering Lamps

If equipped with cornering lamps, they automatically come on when all of the following occur:

- The low-beam headlamps are on.
- The turn signals are activated or the steering wheel is at a calibrated angle.
- The vehicle speed is below the calibrated speed.

# Interior Lighting

## Instrument Panel Illumination Control



This feature controls the brightness of the instrument panel lights and is next to the exterior lamp control.

: 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 be automatically adjusted.

## Dome Lamps

There are dome lamps in the overhead console and the headliner, if equipped.

To change the dome lamp settings, press the following:

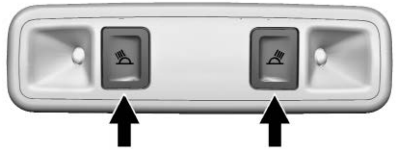
**OFF :** Turns the lamps off, even when a door is open.

**DOOR :** The lamps come on automatically when a door is opened.

**ON :** Turns all dome lamps on.

## Reading Lamps

There are reading lamps in the overhead console and the headliner, if equipped. To operate, the ignition must be on or in ACC/ACCESSORY, or using Retained Accessory Power (RAP).



Press or next to each reading lamp to turn it on or off.

# Lighting Features

## Entry Lighting

Some exterior lamps and the interior lamps turn on briefly at night, or in areas with limited lighting, when is pressed on the Remote Keyless Entry (RKE) transmitter. When a door is opened, the interior lamps come on if the dome lamp control is in the DOOR position. After about 30 seconds the exterior lamps turn off. Entry lighting can be disabled manually by changing the ignition out of the OFF position, or by pressing the RKE transmitter button.

This feature can be changed. See “Vehicle Locator Lights” under *Vehicle Personalization* ⇨ *152*.

## Exit Lighting

Some exterior lamps and interior lamps come on at night, or in areas with limited lighting, when the driver door is opened after the ignition is turned off. The exterior lamps and

interior lamps remain on 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* ⇨ *152*.

## Battery Load Management

The vehicle has Electric Power Management (EPM), which estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly bring the charge back up. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. The voltmeter gauge or the voltage display on the Driver Information Center (DIC), if equipped, may show the voltage moving up or down. This is normal. If there is a problem, an alert will be displayed.

The battery can be discharged at idle if the electrical loads are very high. This is true for all vehicles. This is because the generator (alternator) may not be spinning fast enough at idle to produce all the power that is needed for very high electrical loads.

A high electrical load occurs when several of the following are on, such as: headlamps, high beams, fog lamps, rear window defogger, climate control fan at high speed, heated seats, engine cooling fans, trailer loads, and loads plugged into accessory power outlets.

EPM works to prevent excessive discharge of the battery. It does this by balancing the generator's output and the vehicle's electrical needs. It can increase engine idle speed to generate more power, whenever needed. It can temporarily reduce the power demands of some accessories.

Normally, these actions occur in steps or levels, without being noticeable. In rare cases at the highest levels of corrective action, this action may be noticeable to the driver. If so, a DIC message might be displayed and it is recommended that the driver reduce the electrical loads as much as possible.

## Battery Power Protection

This feature shuts off the dome and reading lamps if they are left on for more than 10 minutes when the ignition is off. This will keep the battery from running down.

## 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 ⏻ position and then back to the 🚗 or 🚙 position.

To keep the lamps on for more than 10 minutes, the ignition must be on or in ACC/ACCESSORY.

# Infotainment System

**Introduction**

Infotainment ..... 172

# Introduction

## Infotainment

See the infotainment manual for information on the radio, audio players, phone, navigation system, Rear Seat Entertainment (RSE), and voice or speech recognition. It also includes information on settings.

# Climate Controls

**Climate Control Systems**
Dual Automatic Climate Control System ..... 173
Rear Climate Control System .... 178

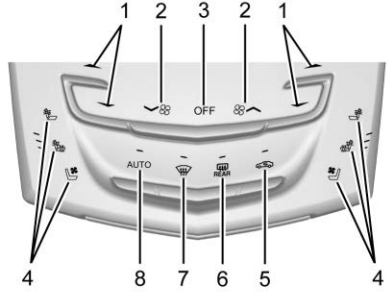
**Air Vents**
Air Vents ..... 179

**Maintenance**
Passenger Compartment Air Filter ..... 180

# Climate Control Systems

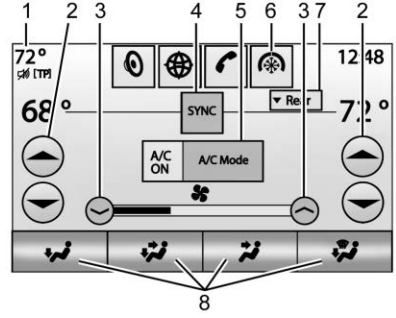
## Dual Automatic Climate Control System

The climate control buttons on the center stack and on the climate control display are used to adjust the heating, cooling, and ventilation.




Center Stack Climate Controls

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




Climate Control Display

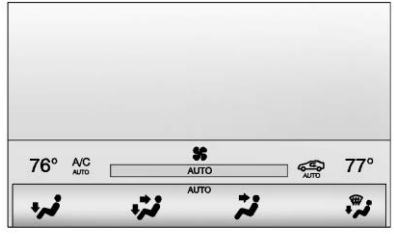
1. Outside Temperature Display
2. Driver and Passenger Temperature Controls
3. Fan Control
4. SYNC (Synchronized Temperature)
5. A/C Mode (Air Conditioning)

6. Climate Control Selection (Application Tray Button)
7. Rear (Rear Climate Control Touch Screen)
8. Air Delivery Mode Control

### Climate Control Display

The fan, air delivery mode, air conditioning, driver and passenger temperatures, and SYNC settings can be controlled by pressing CLIMATE on the infotainment home screen or the climate button on the infotainment display application tray. A selection can then be made on the front climate control page displayed. See the infotainment manual.

### Climate Control Status Display




The climate control status display appears briefly when the climate control buttons on the center stack are adjusted. The air delivery mode can be adjusted on the climate control display.

### 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 AUTO is lit, all four functions operate automatically. Each function can also be manually set and the setting is displayed. Functions not manually set will continue to be automatically controlled, even if the AUTO indicator is not lit.

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 “Cluster Settings Menu” under *Instrument Cluster* ⇨ *130*.

**OFF :** Press OFF to turn the fan on or off. When off is selected, the system will stop air from flowing into the

cabin. If on is selected, any other buttons are pressed, or any knobs are turned, the climate control system will turn on and operate at the current setting.

△ / ▽ **:** 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.

The driver and passenger temperatures can also be adjusted by touching the controls on the climate control display.

**SYNC :** Touch SYNC on the climate control display 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.

**Rear :** If equipped, touch Rear on the front climate control display to open the rear climate control screen. The rear climate control settings can now be adjusted from the front passenger area.

### Manual Operation

∨ ∧ **:** Touch the fan controls on the climate control display or press the fan control buttons, to increase or decrease the fan speed. Touch or press and hold the fan controls to adjust speed more quickly. The fan speed setting displays. Any adjustment of the fan speed 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 OFF on the center stack climate controls. The airflow will be blocked from entering in all air delivery modes, except defrost.

The maximum automatic fan speed can be set to low, medium, or high. To adjust Auto Fan Max Speed, see “Climate and Air Quality” under *Vehicle Personalization* ⇨ *152*.

**Air Delivery Mode Control :** When the climate information is displayed, press the desired air delivery mode on the climate control display 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:

**:** Air is directed to the instrument panel outlets.

**:** Air is divided between the instrument panel outlets and the floor outlets.

**:** Air is directed to the floor outlets.

**:** Clears the windows of fog or moisture. Air is directed to the windshield and floor outlets.

: Clears the windshield of fog or frost more quickly. Air is directed to the windshield. Press to turn on or off. Changing the air delivery mode also turns the defrost off.

**A/C Mode :** Touch AC Mode on the climate control display 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* ⇨ *152*.

: 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 and reduce the entry of outside air and odors.

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 uses 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, turn on the air conditioner, and direct more air to the windshield. 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* ⇨ *152*.

## Rear Window Defogger

REAR : Press to turn the rear window defogger on or off. An indicator light on the button comes on to show that the rear window defogger is on.

The rear window defogger only works when the ignition is on. The defogger turns off if the ignition is turned off or to ACC/ACCESSORY.

The rear window defogger can be set to automatic operation. When Auto Rear Defog is selected, the rear window defogger turns on automatically when the vehicle is first started in cold weather and turns off when the vehicle is warmed. To turn Auto Rear Defog on or off, see "Climate and Air Quality" under *Vehicle Personalization* ⇨ *152*.

If equipped, the heated outside mirrors turn on when the rear window defogger button is on and help to clear fog or frost from the surface of the mirrors.

**Caution**

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 Cooled Seats :** If equipped, press or to heat the driver or passenger seatback only.

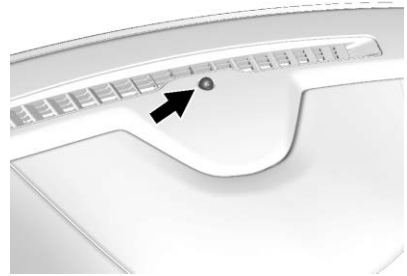
If equipped, press or to heat the driver or passenger seat cushion and seatback.

If equipped, press or to cool the driver or passenger seat. See *Heated and Cooled Front Seats* ⇨ *67*.

The vehicle also has auto heated and cooled seats that turn on when the vehicle is on. The seats will activate at the level required by the vehicle's interior temperature. The auto heated and cooled seats can be turned on or off.
See *Vehicle Personalization* ⇨ *152* and *Heated and Cooled Front Seats* ⇨ *67*.

**Remote Start Climate Control Operation :** If equipped 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 equipped with heated or cooled seats, they may come on during a remote start.
See *Remote Vehicle Start* ⇨ *36* and *Heated and Cooled Front Seats* ⇨ *67*.

## Sensor



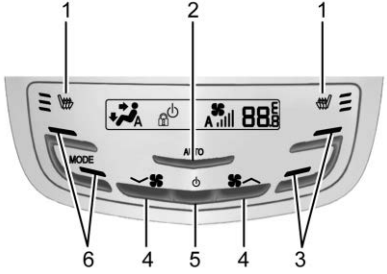
The solar sensor, on top of the instrument panel near the windshield, monitors the solar heat.

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.

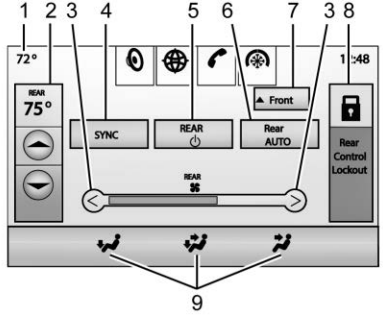
## Rear Climate Control System

If equipped, the rear climate control system is on the rear of the center console. The settings can be adjusted with the rear climate controls and the rear climate display.




Rear Climate Controls

1. Heated Rear Seats
2. AUTO (Automatic Operation)
3. Temperature Control
4. Fan Control
5. ⏻ (On/Off)
6. Air Delivery Mode Control




Rear Climate Display

1. Outside Temperature Display
2. Rear Climate Temperature Control
3. Fan Control
4. SYNC (Synchronized Temperatures)
5. REAR ⏻ (On/Off)
6. Rear AUTO (Automatic Operation)
7. Front (Front Climate Control Touch Screen)
8. Rear Control Lockout
9. Air Delivery Mode Control

**Rear :** Touch Rear on the front climate control display to open the rear climate control screen. The rear climate control settings can now be adjusted from the front passenger area.

**⏻ :** Press ⏻ or REAR ⏻ to turn the rear climate control system on or off. If the rear climate control system is turned off using REAR ⏻ on the rear climate display, the ⏻ button and the temperature or air delivery mode buttons on the rear climate controls must be pressed within five seconds to turn it back on.

**SYNC :** Touch SYNC on the rear climate display to match the rear climate control temperature to the front climate control driver temperature. The SYNC button will be lit. Press the temperature, MODE, or AUTO button twice to unlink the set driver and rear temperatures. The SYNC button turns off.

**Rear Control Lockout :** Touch Rear Control Lockout on the rear climate display to lock or unlock control of

the rear climate control system from the front climate control display. When locked the rear climate control system cannot be adjusted from the rear climate controls on the rear of the center console.

### Automatic Operation

**Rear AUTO :** Touch to turn on or off. The air delivery and fan speed are controlled automatically. The AUTO indicator appears on the display on the rear of the center console. If the Mode or fan control buttons are manually adjusted, this cancels the automatic operation.

### Manual Operation

**:** Touch or press the fan controls on the rear climate display or on the rear of the center console to increase or decrease the airflow. Pressing when the system is off will turn the system on. The air delivery mode remains in its previous setting.

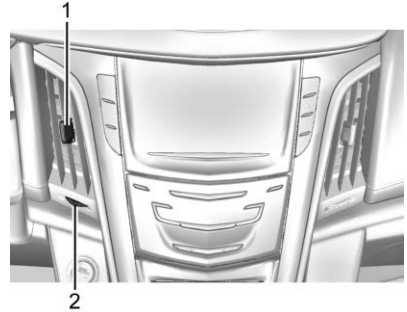
△ / ▽ **:** Touch or press and hold the rear temperature controls on the rear climate display or on the rear of the center console to adjust the rear passenger temperature. Press △ for warmer air and press ▽ for cooler air.

**:** Touch the desired mode on the rear climate display or the MODE button on the rear of the center console to change the direction of the airflow in the rear seating area.

**or :** Press or to heat the left or right outboard seat cushion and seatback. See *Heated Rear Seats* ⇨ *68*.

## Air Vents

Adjustable air vents are in the center and on the side of the instrument panel.




1. Slider Knob
2. Thumbwheel

Move the slider knobs (1) to change the direction of the airflow.

Use the thumbwheels (2) near the air vents to open or close off the airflow.

**Operation Tips**

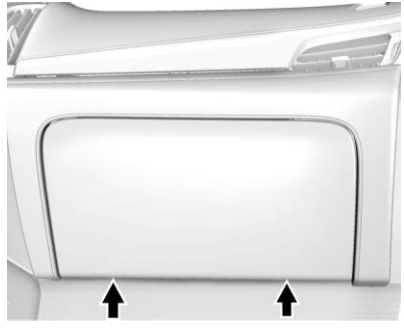
- Clear away any ice, snow, or leaves from the air inlets at the base of the windshield that could block the flow of air into the vehicle.
- Clear snow off the hood to improve visibility and help decrease moisture drawn into the vehicle.
- When you enter a vehicle in cold weather, press the fan up button to the maximum fan level before driving. This helps clear the intake ducts of snow and moisture, and reduces the chance of fogging the inside of the window.
- Keep the air 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.

# Maintenance

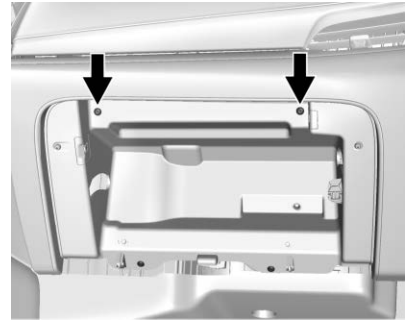
## Passenger Compartment Air Filter

The filter reduces the dust, pollen, and other airborne irritants from outside air that is pulled into the vehicle.

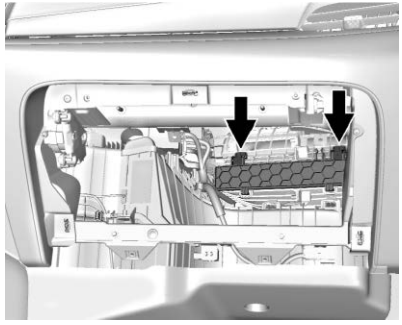
The filter should be replaced as part of routine scheduled maintenance. See *Maintenance Schedule* ⇨ *347*. To find out what type of filter to use, see *Maintenance Replacement Parts* ⇨ *356*.



1. Before opening the glove box, remove the two lower screws (out of view).



2. Open the glove box completely and remove the two upper screws.
3. Disconnect the electrical plug and remove the entire glove box.



4. Release the two tabs holding the service door. Open the service door and remove the old filter.
5. Install the new air filter.
6. Close the service door and secure the tabs.
7. Reverse the steps to reinstall the glove box.

See your dealer if additional assistance is needed.

# Driving and Operating

## Driving Information

Distracted Driving ..... 183
Defensive Driving ..... 184
Drunk Driving ..... 184
Control of a Vehicle ..... 184
Braking ..... 184
Steering ..... 185
Off-Road Recovery ..... 185
Loss of Control ..... 186
Off-Road Driving ..... 186
Driving on Wet Roads ..... 190
Hill and Mountain Roads ..... 191
Winter Driving ..... 192
If the Vehicle Is Stuck ..... 193
Vehicle Load Limits ..... 193

## Starting and Operating

New Vehicle Break-In ..... 198
Adjustable Throttle and Brake Pedal ..... 198
Ignition Positions ..... 199
Starting the Engine ..... 200
Engine Heater ..... 201
Retained Accessory Power (RAP) ..... 203
Shifting Into Park ..... 203
Shifting out of Park ..... 204
Parking over Things That Burn ..... 205
Active Fuel Management ..... 205
Extended Parking ..... 205

## Engine Exhaust

Engine Exhaust ..... 205
Running the Vehicle While Parked ..... 206

## Automatic Transmission

Automatic Transmission ..... 206
Manual Mode ..... 209
Tow/Haul Mode ..... 210

## Drive Systems

Four-Wheel Drive ..... 211

## Brakes

Antilock Brake System (ABS) .... 215
Parking Brake ..... 215
Electric Parking Brake ..... 216
Brake Assist ..... 217
Hill Start Assist (HSA) ..... 218

## Ride Control Systems

Traction Control/Electronic Stability Control ..... 218
Driver Mode Control ..... 220
Magnetic Ride Control ..... 221
Locking Rear Axle ..... 222
Automatic Level Control ..... 222

## Cruise Control

Cruise Control ..... 222
Adaptive Cruise Control ..... 225

## Driver Assistance Systems

Driver Assistance Systems ..... 233
Assistance Systems for Parking or Backing ..... 233
Assistance Systems for Driving ..... 240
Forward Collision Alert (FCA) System ..... 240
Forward Automatic Braking (FAB) ..... 242
Side Blind Zone Alert (SBZA) .... 244
Lane Change Alert (LCA) ..... 244
Lane Departure Warning (LDW) ..... 246
Lane Keep Assist (LKA) ..... 246

## Fuel

Fuel ..... 248
California Fuel Requirements .... 249
Fuels in Foreign Countries ..... 249
Fuel Additives ..... 249
Filling the Tank ..... 249
Filling a Portable Fuel Container ..... 251

**Trailer Towing**
General Towing Information .... 252
Driving Characteristics and Towing Tips ..... 252
Trailer Towing ..... 255
Towing Equipment ..... 258
Trailer Sway Control (TSC) ..... 260

**Conversions and Add-Ons**
Add-On Electrical Equipment ... 262

# 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, keep your eyes on the road, keep your hands on the steering wheel, and focus your attention on driving.

- 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 infotainment section for more information on using that system and the navigation system, if equipped, including pairing and using a cell phone.

## Defensive Driving

Defensive driving means “always expect the unexpected.” The first step in driving defensively is to wear the seat belt. See *Seat Belts* ⇨ *75*.

- 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

## Electric Power Steering

This vehicle has electric power steering. It does not have power steering fluid. Regular maintenance is not required.

If power steering assist is lost due to a system malfunction, the vehicle can be steered, but may require increased effort.

See your dealer if there is a problem.

If the steering assist is used for an extended period of time while the vehicle is not moving, power assist may be reduced.

If the steering wheel is turned until it reaches the end of its travel, and is held in that position for an extended period of time, power steering assist may be reduced.

Normal use of the power steering assist should return when the system cools down.

See your dealer if there is a problem.

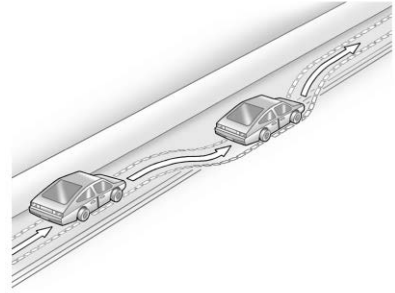
## Curve Tips

- 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.

## Off-Road Driving

Four-wheel-drive vehicles can be used for off-road driving. Vehicles without four-wheel drive and vehicles not equipped with All Terrain (AT) or On-Off Road (OOR) tires must not be driven off-road except on a level, solid surface. For contact information about the original equipment tires, see the warranty manual.

One of the best ways for successful off-road driving is to control the speed.

**⚠ Warning**

When driving off-road, bouncing and quick changes in direction can easily throw you out of position. This could cause you to lose control and crash. You and your passengers should always wear seat belts.

### Before Driving Off-Road

- Have all necessary maintenance and service work completed.
- Fuel the vehicle, fill fluid levels, and check inflation pressure in all tires, including the spare, if equipped.
- Read all the information about four-wheel-drive vehicles in this manual.

- Know the local laws that apply to off-road driving.

To gain more ground clearance if needed, it may be necessary to remove the front fascia lower air dam, if equipped. However, driving without the air dam reduces fuel economy.

**Caution**

Operating the vehicle for extended periods without the front fascia lower air dam installed can cause improper airflow to the engine. Reattach the front fascia air dam after off-road driving.

## Loading the Vehicle for Off-Road Driving

**⚠ Warning**

- Unsecured cargo on the load floor can be tossed about when driving over rough terrain. You or your

(Continued)

**Warning (Continued)**

passengers can be struck by flying objects. Secure the cargo properly.

- Keep cargo in the cargo area as far forward and as low as possible. The heaviest things should be on the floor, forward of the rear axle.
- Heavy loads on the roof raise the vehicle's center of gravity, making it more likely to roll over. You can be seriously or fatally injured if the vehicle rolls over. Put heavy loads inside the cargo area, not on the roof.

For more information about loading the vehicle, see *Vehicle Load Limits* ⇨ *193* and *Tires* ⇨ *299*.

## Environmental Concerns

- Always use established trails, roads, and areas that have been set aside for public off-road recreational driving and obey all posted regulations.
- Do not damage shrubs, flowers, trees, or grasses or disturb wildlife.
- Do not park over things that burn. See *Parking over Things That Burn* ⇨ *205*.

## Driving on Hills

Driving safely on hills requires good judgment and an understanding of what the vehicle can and cannot do.

**⚠ Warning**

Many hills are simply too steep for any vehicle. Driving up hills can cause the vehicle to stall. Driving down hills can cause loss of control. Driving across hills can cause a rollover. You could be injured or killed. Do not drive on steep hills.

Before driving on a hill, assess the steepness, traction, and obstructions. If the terrain ahead cannot be seen, get out of the vehicle and walk the hill before driving further.

When driving on hills:

- Use a low gear and keep a firm grip on the steering wheel.
- Maintain a slow speed.
- When possible, drive straight up or down the hill.
- Slow down when approaching the top of the hill.
- Use headlamps even during the day to make the vehicle more visible.

**⚠ Warning**

Driving to the top of a hill at high speed can cause an accident. There could be a drop-off, embankment, cliff, or even another vehicle. You could be seriously injured or killed. As you near the top of a hill, slow down and stay alert.

- Never go downhill forward or backward with either the transmission or transfer case in N (Neutral). The brakes could overheat and you could lose control.

**⚠ Warning**

If the vehicle has the two-speed automatic or electronic transfer case, shifting the transfer case to N (Neutral) can cause your vehicle to roll even if the transmission is in P (Park). This is because the N (Neutral) position on the transfer case overrides the transmission. You or someone else could be injured. If leaving the vehicle, set the parking brake and shift the transmission to P (Park). Shift the transfer case to any position but N (Neutral).

- When driving down a hill, keep the vehicle headed straight down. Use a low gear because the engine will work with the brakes to slow the vehicle and help keep the vehicle under control.

**⚠ Warning**

Heavy braking when going down a hill can cause your brakes to overheat and fade. This could cause loss of control and you or others could be injured or killed. Apply the brakes lightly when descending a hill and use a low gear to keep vehicle speed under control.

If the vehicle stalls on a hill:

1. Apply the brakes to stop the vehicle, and then apply the parking brake.
2. Shift into P (Park) and then restart the engine.
   - If driving uphill when the vehicle stalls, shift to R (Reverse), release the parking brake, and back straight down.

- Never try to turn the vehicle around. If the hill is steep enough to stall the vehicle, it is steep enough to cause it to roll over.
- If you cannot make it up the hill, back straight down the hill.
- Never back down a hill in N (Neutral) using only the brake. The vehicle can roll backward quickly and you could lose control.
- If driving downhill when the vehicle stalls, shift to a lower gear, release the parking brake, and drive straight down the hill.

3. If the vehicle cannot be restarted after stalling, set the parking brake, shift into P (Park), and turn the vehicle off.
   3.1. Leave the vehicle and seek help.
   3.2. Stay clear of the path the vehicle would take if it rolled downhill.

- Avoid turns that take the vehicle across the incline of the hill. A hill that can be driven straight up or down might be too steep to drive across. Driving across an incline puts more weight on the downhill wheels, which could cause a downhill slide or a rollover.
- Surface conditions can be a problem. Loose gravel, muddy spots, or even wet grass can cause the tires to slip sideways, downhill. If the vehicle slips sideways, it can hit something that will trip it — a rock, a rut, etc. — and roll over.
- Hidden obstacles can make the steepness of the incline more severe. If a rock is driven across with the uphill wheels, or if the downhill wheels drop into a rut or depression, the vehicle can tilt even more.
- If an incline must be driven across, and the vehicle starts to slide, turn downhill. This should help straighten out the vehicle and prevent the side slipping.

**⚠ Warning**

Getting out of the vehicle on the downhill side when stopped across an incline is dangerous. If the vehicle rolls over, you could be crushed or killed. Always get out on the uphill side of the vehicle and stay well clear of the rollover path.

## Driving in Mud, Sand, Snow, or Ice

Use a low gear when driving in mud — the deeper the mud, the lower the gear. Keep the vehicle moving to avoid getting stuck.

Traction changes when driving on sand. On loose sand, such as on beaches or sand dunes, the tires tend to sink into the sand. This affects steering, accelerating, and braking. Drive at a reduced speed and avoid sharp turns or abrupt maneuvers.

Traction is reduced on hard packed snow and ice and it is easy to lose control. Reduce vehicle speed when driving on hard packed snow and ice.

**⚠ Warning**

Driving on frozen lakes, ponds, or rivers can be dangerous. Ice conditions vary greatly and the vehicle could fall through the ice; you and your passengers could drown. Drive your vehicle on safe surfaces only.

### Driving in Water

**⚠ Warning**

Driving through rushing water can be dangerous. Deep water can sweep your vehicle downstream and you and your passengers could drown. If it is only shallow water, it can still wash away the ground from under your tires. Traction could be lost, and the vehicle could roll over. Do not drive through rushing water.

**Caution**

Do not drive through standing water if it is deep enough to cover the wheel hubs, axles, or exhaust pipe. Deep water can damage the axle and other vehicle parts.

If the standing water is not too deep, drive through it slowly. At faster speeds, water can get into the engine and cause it to stall. Stalling can occur if the exhaust pipe is under water. Do not turn off the ignition when driving through water. If the exhaust pipe is under water, the engine will not start. When going through water, the brakes get wet and it may take longer to stop. See "Driving on Wet Roads" later in this section.

### After Off-Road Driving

Remove any brush or debris that has collected on the underbody or chassis, or under the hood. These accumulations can be a fire hazard.

After operation in mud or sand, have the brake linings cleaned and checked. These substances can cause glazing and uneven braking. Check the body structure, driveline, steering, suspension, wheels, tires, and exhaust system for damage and check the fuel lines and cooling system for any leakage.

More frequent maintenance service is required. See the *Maintenance Schedule* ⇨ *347*.

## 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.

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* ⇨ *299*.
- Turn off cruise control.

## Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips 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**

Using the brakes to slow the vehicle on a long downhill slope can cause brake overheating, can reduce brake performance, and could result in a loss of braking. Shift the transmission to a lower gear 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. This can cause overheating of the brakes and loss of steering assist. Always have the engine running and the vehicle in gear.

- Drive at speeds that keep the vehicle in its own lane. Do not swing wide or cross the center line.
- Be alert on top of hills; something could be in your lane (e.g., stalled car, accident).
- Pay attention to special road signs (e.g., falling rocks area, winding roads, long grades, passing or no-passing zones) and take appropriate action.

# Winter Driving

## Driving on Snow or Ice

Snow or ice between the tires and the road creates less traction or grip, so drive carefully. Wet ice can occur at about 0 °C (32 °F) when freezing rain begins to fall. Avoid driving on wet ice or in freezing rain until roads can be treated.

### For Slippery Road Driving:

- Accelerate gently. Accelerating too quickly causes the wheels to spin and makes the surface under the tires slick.
- Turn on Traction Control. See *Traction Control/Electronic Stability Control* ⇨ *218*.
- Antilock Brake System (ABS) improves vehicle stability during hard stops, but the brakes should be applied sooner than when on dry pavement. See *Antilock Brake System (ABS)* ⇨ *215*.
- Allow greater following distance 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.
- Turn off cruise control.

## Blizzard Conditions

Stay with the vehicle unless there is help nearby. If possible, use Roadside Assistance. See *Roadside Service* ⇨ *366*. 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 cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle is stuck in snow:

- Clear snow from the base of the vehicle, especially any blocking the exhaust pipe.
- Open a window about 5 cm (2 in) on the vehicle side 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 circulate the air inside the vehicle and set the

(Continued)

**Warning (Continued)**

fan speed to the highest setting. See "Climate Control Systems."

For more information about CO, see *Engine Exhaust* ⇨ *205*.

To save fuel, run the engine for short periods to warm the vehicle and then shut the engine off and partially close the window. Moving about to keep warm also helps.

If it takes time for help to arrive, when running 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/ Electronic Stability Control* ⇨ *218*.

**⚠ 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* ⇨ *332*.

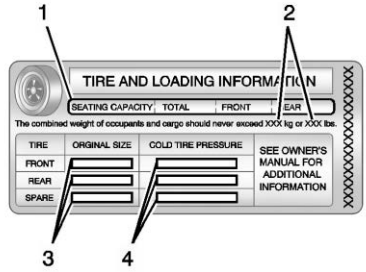
## Vehicle Load Limits

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 may show how much weight it was designed to carry, the Tire and Loading Information label and the Certification/Tire 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 vehicle handles. This could cause loss of control and a crash. Overloading can also reduce stopping distance, damage the tires, and 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 center pillar (B-pillar). 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.

The Tire and Loading Information label also shows the size of the original equipment tires (3) and the recommended cold tire inflation pressures (4). For more information on tires and inflation see *Tires* ⇨ *299* and *Tire Pressure* ⇨ *305*.

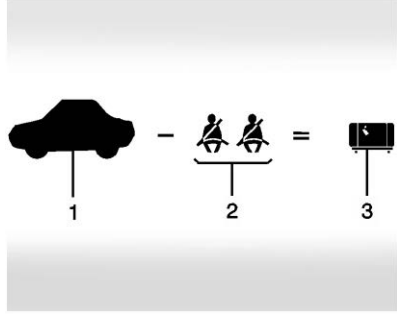
There is also important loading information on the vehicle Certification/Tire label. It may show the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axles. See “Certification/Tire Label” later in this section.

**“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.

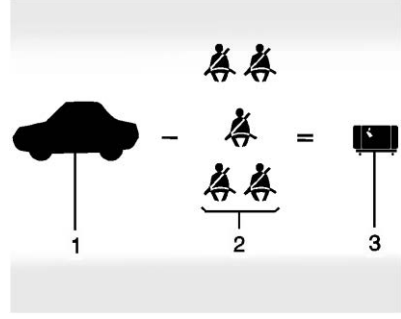
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount 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, 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* ⇨ *255* for important information on towing a trailer, towing safety rules, and trailering tips.



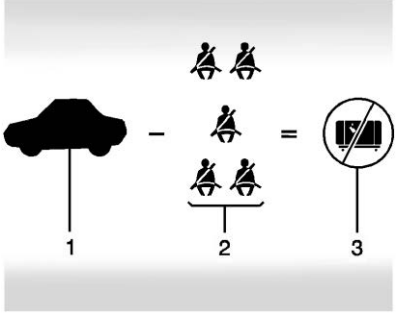

Example 1

1. Maximum 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 = 136 kg (750 lbs)
3. Available Cargo Weight = 113 kg (250 lbs)

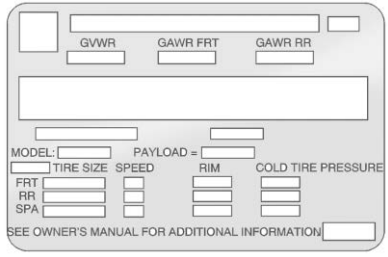



Example 3

1. Maximum 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/Tire Label**




Label Example

A vehicle specific Certification/Tire label is attached to the B-pillar. The label may show the size of the vehicle's original tires and the inflation pressures needed to obtain the gross weight capacity of the vehicle. This is called Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo.

The Certification/Tire label may also show the maximum weights for the front and rear axles, called Gross Axle Weight Rating (GAWR). To find out the actual loads on the front and rear axles, weigh the vehicle at a weigh station. Your dealer can help with this. Be sure to spread the load equally on both sides of the center line.

The warranty does not cover parts or components that fail because of overloading.

The label will help determine how much cargo and installed equipment the vehicle can carry.

Using heavier suspension components to get added durability might not change the weight ratings. Ask your dealer to help load the vehicle properly.

**⚠ Warning**

Things you put 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. 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.
- Do not leave an unsecured child restraint in the vehicle.
- When you carry something inside the vehicle, secure it whenever you can.
- Do not leave a seat folded down unless you need to.

There is also important loading information for off-road driving in this manual. See "Loading the Vehicle for Off-Road Driving" under *Off-Road Driving* ⇨ *186*.

### Add-On Equipment

There may be a limit on how many people can be inside the vehicle when carrying removable items. Be sure to weigh the vehicle before buying and installing the new equipment.

**Caution**

Overloading the vehicle may cause damage. Repairs would not be covered by the vehicle warranty. Do not overload the vehicle.

Remember not to exceed the Gross Axle Weight Rating (GAWR) of the front or rear axle.

### Automatic Level Control

See *Automatic Level Control* ⇨ *222*.

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 height. See "Hitches" under *Towing Equipment* ⇨ *258*.

# Starting and Operating

## New Vehicle Break-In

**Caution**

The vehicle does not need an elaborate break-in. But it will perform better in the long run if you follow these guidelines:

- Keep the vehicle speed at 88 km/h (55 mph) or less for the first 805 km (500 mi).
- 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.
- 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

(Continued)

**Caution (Continued)**

replacement. Follow this breaking-in guideline every time you get new brake linings.

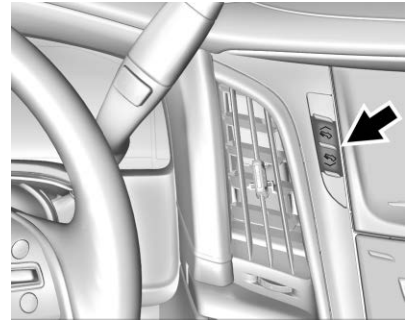
- Do not tow a trailer during break-in. See *Trailer Towing* ⇨ *255* for the trailer towing capabilities of the vehicle and more information.

Following break-in, engine speed and load can be gradually increased.

## Adjustable Throttle and Brake Pedal

If equipped, the position of the throttle and brake pedals can be changed.

The pedals can only be adjusted when the vehicle is in P (Park).

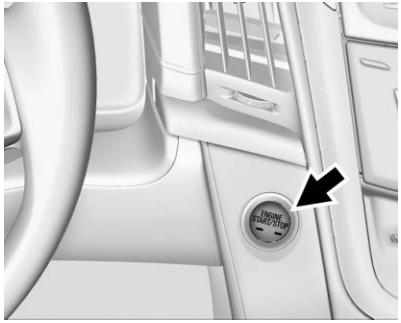


Press the top of the switch to move the pedals closer to your body. Press the bottom of the switch to move the pedals away.

Before you start driving, fully press the brake pedal to confirm the adjustment is right for you.

The vehicle may have a memory function, which lets pedal settings be saved and recalled. See *Memory Seats* ⇨ *63*.

## Ignition Positions




The vehicle is equipped with Keyless Access and has pushbutton start.

The Remote Keyless Entry (RKE) 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 Keyless Access system. See *Remote Keyless Entry (RKE) System Operation* ⇨ *29*.

To shift out of P (Park), the vehicle must be on or in ACC/ACCESSORY, and the brake pedal must be applied.

**Stopping the Engine/LOCK/OFF (No Indicator Lights) :** When the vehicle is stopped, press ENGINE START/STOP 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)* ⇨ *203*.

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). When the vehicle is shifted into P (Park), the ignition will turn 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.

The vehicle may have an electric steering column lock. The lock is activated when the ignition is turned off and either front door is opened. A sound may be heard as the lock actuates or releases. The steering column lock may not release with the wheels turned off center. If this happens, the vehicle may not start. Move the steering wheel from left to right while attempting to start the vehicle. If this does not work, the vehicle needs service.

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 off.
4. Set the parking brake. See *Parking Brake* ⇨ *215* or *Electric Parking Brake* ⇨ *216*.

**⚠ 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 ENGINE START/STOP for longer than two seconds, or press twice in five seconds.

**ACC/ACCESSORY (Amber Indicator Light) :** This mode allows some electrical accessories to be used 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 turn the ignition on. Once engine cranking begins, release the button. Engine cranking will continue until the engine starts. See *Starting the Engine* ⇨ *200*. The ignition will then remain on.

### Service 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 Mode. The instruments and audio systems will operate as they do when the ignition is on, but the vehicle will not be able to be driven. The engine will not start in Service Mode. Press the button again to turn the ignition 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.

**Caution**

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.

**Caution**

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* ⇨ *262*.

### Starting Procedure

1. With the Keyless Access system, the RKE transmitter must be in the vehicle. Press ENGINE START/STOP with the brake pedal applied. 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.

   If the RKE transmitter is not in the vehicle, if there is interference, or if the RKE battery is low, the Driver Information Center (DIC) will display a message.

**Caution**

Cranking the engine for long periods of time, by returning the ignition to the START position immediately after cranking has ended, can overheat and damage the cranking motor, and drain the

(Continued)

**Caution (Continued)**

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 ENGINE START/STOP, 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

**⚠ Warning**

Do not plug in the engine block heater while the vehicle is parked in a garage or under a carport. Property damage or personal injury may result. Always park the vehicle in a clear open area away from buildings or structures.

If equipped, the engine heater can provide easier starting and better fuel economy during engine warm-up in cold weather conditions at or below –18 °C (0 °F). Vehicles with an engine heater should be plugged in at least four hours before starting. There may be an internal thermostat in the plug end of the cord, which will prevent engine heater operation at temperatures above –18 °C (0 °F).

### To Use the Engine Heater

1. Turn off the engine.
2. Open the hood and unwrap the electrical cord. The cord is by the left front fender, next to the engine compartment fuse block.

   Check the heater cord for damage. If it is damaged, do not use it. See your dealer for a replacement. Inspect the cord for damage yearly.
3. Plug the cord into a normal, grounded 110-volt AC outlet.

**⚠ Warning**

Improper use of the heater cord or an extension cord can damage the cord and may result in overheating and fire.

- Plug the cord into a three-prong electrical utility receptacle that is protected by a ground fault detection

(Continued)

**Warning (Continued)**

function. An ungrounded outlet could cause an electric shock.

- Use a weatherproof, heavy-duty, 15 amp-rated extension cord if needed. Failure to use the recommended extension cord in good operating condition, or using a damaged heater or extension cord, could make it overheat and cause a fire, property damage, electric shock, and injury.
- Do not operate the vehicle with the heater cord permanently attached to the

(Continued)

**Warning (Continued)**

vehicle. Possible heater cord and thermostat damage could occur.

- While in use, do not let the heater cord touch vehicle parts or sharp edges. Never close the hood on the heater cord.
- Before starting the vehicle, unplug the cord, reattach the cover to the plug, and securely fasten the cord. Keep the cord away from any moving parts.

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. If you do not, it could be damaged.

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)

Some vehicle accessories may be used after the ignition is turned off.

The power windows and sunroof, if equipped, will continue to work for up to 10 minutes or until any door is opened.

The infotainment system will continue to work for 10 minutes, until the driver door is opened, or until the ignition is turned on or placed in ACC/ACCESSORY.

## Shifting Into Park

**⚠ Warning**

It can be 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. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will

(Continued)

**Warning (Continued)**

not move, even when you are on fairly level ground, use the steps that follow. If the vehicle has a four-wheel-drive transfer case with a N (Neutral) position, and the transfer case is in N (Neutral), the vehicle will be free to roll, even if the shift lever is in P (Park). Be sure the transfer case is in a drive gear. If towing a trailer, see *Driving Characteristics and Towing Tips* ⇨ *252*.

1. Hold the brake pedal down, then set the parking brake. See *Parking Brake* ⇨ *215* or *Electric Parking Brake* ⇨ *216*.
2. Move the shift lever into the P (Park) position by pulling the shift lever toward you and moving it up as far as it will go.
3. Be sure the transfer case is in a drive gear – not in N (Neutral).
4. Turn the ignition off.

### Leaving the Vehicle with the Engine Running

**⚠ Warning**

It can be dangerous to leave the vehicle with the engine running. The vehicle could move suddenly if the shift lever is not fully in P (Park) with the parking brake firmly set.

If you have four-wheel drive and the transfer case is in N (Neutral), the vehicle will be free to roll, even if the shift lever is in P (Park). So be sure the transfer case is in a drive gear – not in N (Neutral).

And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. Do not leave the vehicle with the engine running unless you have to.

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 move the shift lever into P (Park), hold the regular brake pedal down. Then, 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

If you are parking on a hill and you do not shift the transmission into P (Park) properly, the weight of the vehicle may put too much force on the parking pawl in the transmission. You may find it difficult to pull the shift lever out of P (Park). This is called torque lock. To prevent torque lock, set the parking brake and then shift into P (Park) properly before you leave the driver seat.

When you are ready to drive, move the shift lever out of P (Park) before you release the parking brake.

If torque lock does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the parking pawl in the transmission. You will then be able to pull the shift lever out of P (Park).

## Shifting out of Park

This vehicle is equipped with an electronic shift lock release system. The shift lock release system is designed to prevent movement of the shift lever out of P (Park), unless the ignition is on and the brake pedal is applied.

The shift lock release 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 - North America* ⇨ *329*.

To shift out of P (Park):

1. Apply the brake pedal.
2. Move the shift lever to the desired position.

If you still are unable to shift out of P (Park):

1. Ease the pressure on the shift lever.
2. While holding down the brake pedal, push the shift lever all the way into P (Park).
3. Move the shift lever to the desired position.

If you are still having a problem shifting, then have the vehicle serviced soon.

## 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.

## Active Fuel Management

This system allows the engine to operate on either all or half of its cylinders, depending on the driving conditions.

When less power is required, such as cruising at a constant vehicle speed, the system will operate in the half cylinder mode, allowing the vehicle to achieve better fuel economy. When greater power demands are required, such as accelerating from a stop, passing, or merging onto a freeway, the system will maintain full-cylinder operation.

## Extended Parking

It is best not to park with the vehicle running. If the vehicle is left running, be sure it will not move and there is adequate ventilation.
See *Shifting Into Park* ⇨ *203* and *Engine Exhaust* ⇨ *205*.

If the vehicle is left parked and running with the Remote Keyless Entry (RKE) transmitter outside the vehicle, it will turn off after one hour.

If the vehicle is left parked and running with the RKE transmitter inside the vehicle, it will turn off after two hours.

The vehicle could turn off sooner if it is parked on a hill, due to lack of available fuel.

The timer will reset if the vehicle is taken out of P (Park) while it is running.

# 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* ⇨ *203* and *Engine Exhaust* ⇨ *205*.

If parking on a hill and pulling a trailer, see *Driving Characteristics and Towing Tips* ⇨ *252*.

# Automatic Transmission

If equipped, there is an electronic shift lever position indicator within the instrument cluster. This display comes on when the ignition is turned on.

There are several different positions for the shift lever.

See “Range Selection Mode” under *Manual Mode* ⇨ *209*.

**P :** This position locks the drive wheels. Use P (Park) when starting the engine because the vehicle cannot move easily. When parked on a hill, especially when the vehicle has a heavy load, you might notice an increase in the effort to shift out of P (Park). See “Torque Lock” under *Shifting Into Park* ⇨ *203*.

**⚠ 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* ⇨ *203* and *Driving Characteristics and Towing Tips* ⇨ *252*.

**⚠ Warning**

If you have four-wheel drive, the vehicle will be free to roll — even if the shift lever is in P (Park) — if the transfer case is in N (Neutral). So,

(Continued)

**Warning (Continued)**

be sure the transfer case is in a drive gear, Two-Wheel Drive High or Four-Wheel Drive High or Four-Wheel Drive Low — not in N (Neutral). See *Shifting Into Park* ⇨ *203*.

**R :** Use this gear to back up.

**Caution**

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* ⇨ *193*.

**N :** 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.

**⚠ 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.

**Caution**

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.

**Caution**

A transmission hot message may display if the automatic transmission fluid is too hot. Driving under this condition can damage the vehicle. Stop and idle the engine to cool the automatic transmission fluid. This message clears when the transmission fluid has cooled sufficiently.

**D :** This position is for normal driving. If more power is needed for passing, press the accelerator pedal down.

Use D (Drive) and Tow/Haul Mode when towing a trailer, carrying a heavy load, driving on steep hills, or driving off-road. Shift the transmission to a lower gear selection if the transmission shifts too often.

Downshifting the transmission in slippery road conditions could result in skidding. See “Skidding” under *Loss of Control* ⇨ *186*.

The vehicle has a shift stabilization feature that adjusts the transmission shifting to the current driving conditions in order to reduce rapid upshifts and downshifts. This shift stabilization feature is designed to determine, before making an upshift, if the engine is able to maintain vehicle speed by analyzing things such as vehicle speed, throttle position, and vehicle load. If the shift stabilization feature determines that a current vehicle speed cannot be maintained, the transmission does not upshift and instead holds the current gear.
In some cases, this could appear to be a delayed shift, however the transmission is operating normally.

The transmission uses adaptive shift controls. The adaptive shift control process continually compares key shift parameters to pre-programmed ideal shifts stored in the transmission’s computer. The transmission constantly makes adjustments to improve vehicle performance according to how the vehicle is being used, such as with a heavy load or when the temperature changes. During this adaptive shift control process, shifting might feel different as the transmission determines the best settings.

When temperatures are very cold, the transmission's gear shifting could be delayed providing more stable shifts until the engine warms up. Shifts could be more noticeable with a cold transmission. This difference in shifting is normal.

**L :** This position allows selection of a range of gears appropriate for current driving conditions. If equipped, see “Range Selection Mode” under *Manual Mode* ⇨ *209*.

**Caution**

Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If the vehicle is stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.

### Normal Mode Grade Braking

This mode is enabled when the vehicle is started, but is not enabled in Range Selection Mode. It assists in maintaining desired vehicle speeds when driving on downhill grades by using the engine and transmission to slow the vehicle. The first time the system engages for each ignition cycle, a DIC message will be displayed.

To disable or enable Normal Mode Grade Braking within the current ignition cycle, press and hold the Tow/Haul button for five seconds. When the button is released, the requested mode change is made. A DIC message displays.

For other forms of grade braking, see *Tow/Haul Mode* ⇨ *210* and *Cruise Control* ⇨ *222*.

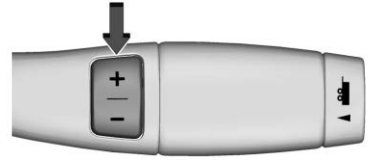
### Kickdown Mode

The accelerator pedal provides an additional downshift after pressing through the kickdown feature.

It requires extra pedal pressure near the end of its travel to engage.

## Manual Mode

### Range Selection Mode




If equipped, Range Selection Mode helps control the vehicle's transmission and vehicle speed while driving downhill or towing a trailer by letting you select a desired range of gears.

To use this feature:

1. Move the shift lever to L (Manual Mode).
2. Press the plus/minus buttons on the shift lever to select the desired range of gears for current driving conditions. Or, hold the plus/minus buttons to select the highest or lowest range available for the current vehicle speed.

When the shift lever is moved from D (Drive) to L (Manual Mode), a number displays next to the L, indicating the current transmission range.

This number is the highest gear that the transmission will command while operating in L (Manual Mode). All gears below that number are available. As driving conditions change, the transmission can automatically shift to lower gears. For example, when 5 (Fifth) is selected, 1 (First) through 5 (Fifth) gears are automatically shifted by the transmission, but 6 (Sixth) cannot be used until the plus/minus button on the shift lever is used to change to the range.

When the shift lever is moved from D (Drive) to L (Manual Mode), a downshift may occur. The gear that the transmission is operating in when the shift lever is moved from D (Drive) to L (Manual Mode) determines if a downshift occurs. See the following chart.

| Gear before shifting from D (Drive) to L (Manual Mode) | 10th | 9th | 8th | 7th | 6th | 5th | 4th | 3rd | 2nd | 1st |
|---|---|---|---|---|---|---|---|---|---|---|
| Range after shifting from D (Drive) to L (Manual Mode) - Tow/Haul not engaged | L7 | L7 | L7 | L6 | L5 | L4 | L3 | L3 | L2 | L1 |
| Range after shifting from D (Drive) to L (Manual Mode) - Tow/Haul engaged | L7 | L7 | L6 | L5 | L4 | L3 | L3 | L3 | L2 | L1 |

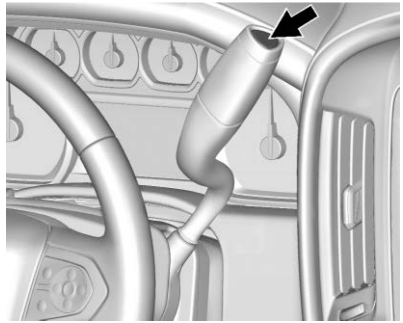
Grade Braking is not available when Range Selection Mode is active. See *Tow/Haul Mode* ⇨ *210*.

While using Range Selection Mode, cruise control and the Tow/Haul Mode can be used.

**Caution**

Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If the vehicle is stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.

## Tow/Haul Mode



The Tow/Haul Mode adjusts the transmission shift pattern to reduce shift cycling. This provides increased performance, vehicle control, and enhanced transmission and engine cooling when driving down steep hills or mountain grades, towing, or hauling heavy loads.

The selector button is on the end of the shift lever. Turn the Tow/Haul Mode on and off by pressing the button. When the Tow/Haul Mode is enabled, a light on the instrument cluster will come on.

See *Tow/Haul Mode Light* ⇨ *140* and *Hill and Mountain Roads* ⇨ *191*.

Also see “Tow/Haul Mode” under *Driver Mode Control* ⇨ *220*.

### Tow/Haul Mode Grade Braking

Tow/Haul Mode Grade Braking is only enabled while the Tow/Haul Mode is selected and the vehicle is not in the Range Selection Mode. See "Tow/Haul Mode" listed previously and *Manual Mode* ⇨ *209*. Tow/Haul Mode Grade Braking assists in maintaining desired vehicle speeds when driving on downhill grades by using the engine and transmission to slow the vehicle.

To disable or enable Tow/Haul Grade Braking within the current ignition cycle, press and hold the Tow/Haul button for five seconds. When the button is released, the requested mode change is made. A DIC message is displayed.

See *Towing Equipment* ⇨ *258*.

For other forms of grade braking, see *Automatic Transmission* ⇨ *206* and *Cruise Control* ⇨ *222*.

# Drive Systems

## Four-Wheel Drive

If equipped, four-wheel drive engages the front axle for extra traction.

**Caution**

Do not drive on clean, dry pavement in 4 ↑ and 4 ↓ (if equipped) for an extended period of time. These conditions may cause premature wear on the vehicle's powertrain.

Driving on clean, dry pavement in 4 ↑ or 4 ↓ may:

- Cause a vibration to be felt in the steering system.
- Cause tires to wear faster.
- Make the transfer case harder to shift, and cause it to run noisier.

**⚠ Warning**

If equipped with four-wheel drive, the vehicle will be free to roll if the transfer case is in N (Neutral), even when the shift lever is in P (Park). Be sure the transfer case is in a drive gear — 2 ↑, 4 ↑, or 4 ↓ — not in N (Neutral). See *Shifting Into Park* ⇨ *203*.

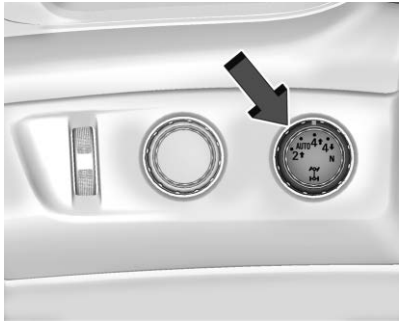
**Caution**

Extended high-speed operation in 4 ↓ may damage or shorten the life of the drivetrain.

Engagement noise and bump when shifting between 4 ↓ and 4 ↑ or from N (Neutral), with the engine running, is normal.

Shifting into 4 ↓ will turn Traction Control and StabiliTrak off. See *Traction Control/Electronic Stability Control* ⇨ *218*.

## Automatic Transfer Case




If equipped, use the transfer case knob next to the steering wheel to shift into and out of four-wheel drive.

All of the lights will blink on then off momentarily when the ignition is turned on. The light that remains on will indicate the state of the transfer case.

If the indicator mark on the switch does not match up with the light then that likely means the switch was moved when the ignition was off.

The indicator mark on the switch must line up with the indicator light before a shift can be commanded. To command a shift rotate the transfer case switch to the new desired position. The light will blink meaning that the shift is in progress. When the shift is completed the new position will be illuminated. If the transfer case cannot complete a shift command, it will go back to its last chosen setting.

The settings are:

**N (Neutral) :** Use only when the vehicle needs to be towed. See *Recreational Vehicle Towing* ⇨ *333* or *Towing the Vehicle* ⇨ *332*.

**2 ↑ (Two-Wheel Drive High) :** Use for driving on most streets and highways. The front axle is not engaged. This setting provides the best fuel economy.

**AUTO (Automatic Four-Wheel Drive) :** Use when road surface traction conditions are variable. When driving in AUTO, the front axle is engaged, and the vehicle's power is sent to the front and rear wheels automatically based on driving conditions. This setting provides slightly lower fuel economy than 2 ↑.

Do not use AUTO mode, if equipped, to park on a steep grade with poor traction such as ice, snow, mud, or gravel. In AUTO mode only the rear wheels will hold the vehicle from sliding when parked. If parking on a steep grade, use 4 ↑ to keep all four wheels engaged.

**4 ↑ (Four-Wheel Drive High) :** Use this position when extra traction is needed, such as when driving on snowy or icy roads, when off-roading, or when plowing snow.

**4 ↓ (Four-Wheel Drive Low) :** This setting engages the front axle and delivers extra torque. Choose 4 ↓ when driving off-road in deep sand, deep mud, or deep snow, and while climbing or descending steep hills.

Shifting into 4 ↓ will turn Traction Control and StabiliTrak off. See *Traction Control/Electronic Stability Control* ⇨ *218*.

### Shifting Into 4 ↑ or AUTO

Turn the knob to the 4 ↑ or AUTO position at any speed, except from 4 ↓. The indicator light will flash while shifting and will remain on when the shift is completed.

### Shifting Into 2 ↑

Turn the knob to 2 ↑ at any speed, except when shifting from 4 ↓. The indicator light will flash while shifting and will remain on when the shift is completed.

### Shifting Into 4 ↓

When 4 ↓ is engaged, keep vehicle speed below 72 km/h (45 mph).

To shift:

1. The ignition must be on and the vehicle must be stopped or moving less than 5 km/h (3 mph) with the transmission in N (Neutral). It is best for the vehicle to be moving 1.6 to 3.2 km/h (1 to 2 mph).
2. Turn the knob to 4 ↓. Wait for the 4 ↓ indicator light to stop flashing before shifting the transmission into gear.

**Caution**

Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case.

If the transmission is in gear and/or moving more than 5 km/h (3 mph), the 4 ↓ indicator light will flash for 30 seconds and not complete the shift. After 30 seconds the transfer case will shift to 4 ↑. Turn the knob to 4 ↑ to display the indicator. With the vehicle moving less than 5 km/h (3 mph), and the transmission in N (Neutral), attempt the shift again.

### Shifting Out of 4 ↓

To shift:

1. The vehicle must be stopped or moving less than 5 km/h (3 mph) with the transmission in N (Neutral) and the ignition on. It is best for the vehicle to be moving 1.6 to 3.2 km/h (1 to 2 mph).
2. Turn the knob to 4 ↑, AUTO, or 2 ↑. Wait for the 4 ↑, AUTO, or 2 ↑ indicator light to stop flashing before shifting the transmission into gear.

**Caution**

Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case.

If the transmission is in gear and/or moving more than 5 km/h (3 mph), the 4 ↑, AUTO, or 2 ↑ indicator light will flash for 30 seconds but will not complete the shift. With the vehicle moving less than 5 km/h (3 mph), and the transmission in N (Neutral), attempt the shift again.

### Shifting Into N (Neutral)

To shift into N (Neutral):

1. Park the vehicle on a level surface.
2. Set the parking brake and press and hold the brake pedal. See *Parking Brake* ⇨ *215* or *Electric Parking Brake* ⇨ *216*.
3. Start the vehicle or turn the ignition on.
4. Shift the transmission to N (Neutral).
5. Shift the transfer case to 2 ↑.
6. Turn the transfer case knob clockwise to N (Neutral) until it stops and hold it there until the N (Neutral) light starts blinking. This will take at least 10 seconds. Then slowly release the knob to the 4 ↓ position. The N (Neutral) light will come on when the transfer case shift to N (Neutral) is complete.
7. With the engine running, verify that the transfer case is in N (Neutral) by shifting the transmission to R (Reverse), then shift the transmission to D (Drive). There should be no movement of the vehicle while shifting the transmission.
8. Turn the engine off, and the ignition to ACC/ACCESSORY.
9. Place the transmission shift lever in P (Park). See *Recreational Vehicle Towing* ⇨ *333*.
10. Turn the ignition off.

### Shifting Out of N (Neutral)

To shift out of N (Neutral):

1. Set the parking brake.
2. Press and hold START/STOP for 5 seconds with your foot off the brake to place the vehicle in Service Mode.
3. Shift the transmission to N (Neutral).
4. Turn the transfer case knob to the desired setting.

   After the transfer case has shifted out of N (Neutral), the N (Neutral) light will go out.
5. Release the parking brake.
6. Start the engine and shift the transmission to the desired gear.

# Brakes

## Antilock Brake System (ABS)

This vehicle has an Antilock Brake System (ABS), an advanced electronic braking system that helps prevent a braking skid.

When the vehicle begins to drive away, ABS checks itself. A momentary motor or clicking noise may be heard while this test is going on, and it may 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* ⇨ *140*.

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 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 you 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.

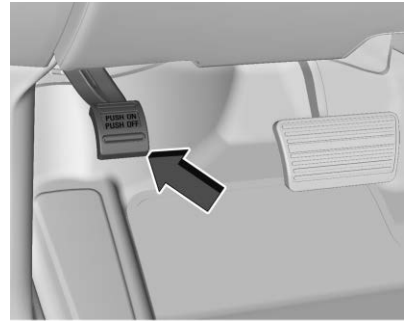
### Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let ABS work. You may hear the ABS pump or motor operating and feel the brake pedal pulsate. This is normal.

### Braking in Emergencies

ABS allows you to steer and brake at the same time. In many emergencies, steering can help more than even the very best braking.

## Parking Brake



Set the parking brake by holding the regular brake pedal down, then pushing down the parking brake pedal.

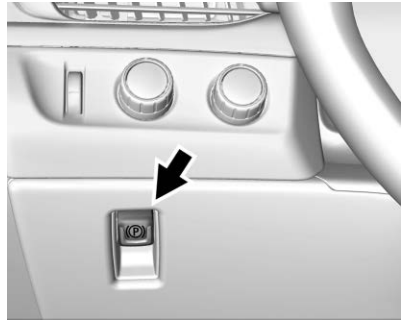
If the ignition is on, the brake system warning light will come on. See *Brake System Warning Light* ⇨ *138*.

**Caution**

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.

To release the parking brake, hold the regular brake pedal down, then push down momentarily on the parking brake pedal until you feel the pedal release. Slowly pull your foot up off the parking brake pedal. If the parking brake is not released when you begin to drive, a DIC message will appear and a chime will sound warning you that the parking brake is still on.

## Electric Parking Brake



The vehicle has an Electric Parking Brake (EPB). 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 Ⓟ or PARK Electric Parking Brake light, and a Ⓟ Service Parking Brake light.
See *Electric Parking Brake Light* ⇨ *139* and *Service Electric Parking Brake Light* ⇨ *139*.

Before leaving the vehicle, check for the Ⓟ or PARK light to ensure that the parking brake is applied.

### EPB Apply

To apply the EPB:

1. Be sure the vehicle is at a complete stop.
2. Lift up the EPB switch momentarily.

The Ⓟ or PARK light will flash and then stay on once the EPB is fully applied. If the Ⓟ or PARK light flashes continuously, then the EPB is only partially applied or there is a problem with the EPB. A DIC message will display. Release the EPB and try to apply it again. If the light does not come on, or keeps flashing, have the vehicle serviced. Do not drive the vehicle if the Ⓟ or PARK light is flashing. See your dealer. See *Electric Parking Brake Light* ⇨ *139*.

If the light is on, press the EPB switch and hold it. Continue to hold the switch until the or PARK light remains on. If the light remains on, see your dealer.

If the EPB is applied while the vehicle is moving, the vehicle will decelerate as long as the switch is pressed. If the switch is pressed until the vehicle comes to a stop, the EPB will remain applied.

The vehicle 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.

If the EPB fails to apply, block the rear wheels to prevent vehicle movement.

### EPB Release

To release the EPB:

1. Turn the ignition on or to ACC/ACCESSORY.
2. Apply and hold the brake pedal.
3. Press the EPB switch momentarily.

The EPB is released when the or PARK light is off.

If the light is on, release the EPB by pressing and holding the EPB switch. Continue to hold the switch until the or PARK light is off. If either light stays on after release is attempted, see your dealer.

**Caution**

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.

## Brake Assist

The Brake Assist feature is 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 sufficient enough to activate HSA. 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 for a maximum of two seconds 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/Electronic Stability Control

### System Operation

The vehicle has a Traction Control System (TCS) and StabiliTrak®, an electronic stability control system. These systems help limit wheel spin and assist the driver in maintaining control, especially on slippery road conditions.

TCS activates if it senses any of the drive wheels are spinning or beginning to lose traction. When this happens, TCS applies the brakes to the spinning wheels and reduces engine power to limit wheel spin.

StabiliTrak activates when the vehicle senses a difference between the intended path and the direction the vehicle is actually traveling. StabiliTrak selectively applies braking pressure to any one of the vehicle wheel brakes to assist the driver in keeping the vehicle on the intended path. Trailer Sway Control (TSC) is also on automatically when the vehicle is started. See *Trailer Sway Control (TSC)* ⇨ *260*.

If cruise control is being used and traction control or StabiliTrak begins to limit wheel spin, cruise control will disengage. Cruise control may be turned back on when road conditions allow.

Both systems come on automatically when the vehicle is started and begins to move. The systems may be heard or felt while they are operating or while performing diagnostic checks. This is normal and does not mean there is a problem with the vehicle.

It is recommended to leave both systems on for normal driving conditions, but it may be necessary to turn TCS off if the vehicle gets stuck in sand, mud, ice, or snow. See *If the Vehicle Is Stuck* ⇨ *193* and “Turning the Systems Off and On” later in this section.

When the transfer case (if equipped) is in Four-Wheel Drive Low, the stability system is automatically disabled, OFF comes on, and the

appropriate message will appear on the DIC. Both traction control and StabiliTrak are automatically disabled in this condition.

The indicator light for both systems is in the instrument cluster. This light will:

- Flash when TCS is limiting wheel spin
- Flash when StabiliTrak is activated
- Turn on and stay on when either system is not working

If either system fails to turn on or to activate, a message displays in the Driver Information Center (DIC), and comes on and stays on to indicate that the system is inactive and is not assisting the driver in maintaining control. The vehicle is safe to drive, but driving should be adjusted accordingly.

If comes on and stays on:

1. Stop the vehicle.
2. Turn the engine off and wait 15 seconds.
3. Start the engine.

Drive the vehicle. If comes on and stays on, the vehicle may need more time to diagnose the problem. If the condition persists, see your dealer.

## Turning the Systems Off and On

The button for TCS and StabiliTrak is on the center stack.

**Caution**

Do not repeatedly brake or accelerate heavily when TCS is off. The vehicle driveline could be damaged.

To turn off only TCS, press and release . The traction off light displays in the instrument cluster. The appropriate message will display in the DIC. To turn TCS on again, press and release . The traction off light displayed in the instrument cluster will turn off.

If TCS is limiting wheel spin when is pressed, the system will not turn off until the wheels stop spinning.

To turn off both TCS and StabiliTrak, press and hold until the traction off light and the StabiliTrak OFF light come on and stay on in the instrument cluster, then release. The appropriate message will display in the DIC.

To turn TCS and StabiliTrak on again, press and release . The traction off light and the StabiliTrak OFF light in the instrument cluster turn off.

StabiliTrak will automatically turn on if the vehicle exceeds 56 km/h (35 mph). Traction control will remain off.

The vehicle has a Trailer Sway Control (TSC) feature and a Hill Start Assist (HSA) feature.
See *Trailer Sway Control (TSC)* ⇨ *260* or *Hill Start Assist (HSA)* ⇨ *218*.

Adding accessories can affect the vehicle performance. See *Accessories and Modifications* ⇨ *265*.

## Driver Mode Control

Driver Mode Control attempts to add a sportier feel, provide a more comfortable ride, or assist in different weather conditions or terrain. This system simultaneously changes the software settings of various sub-systems. Depending on the option package, available features, and mode selected, the suspension, steering, and powertrain will change settings to achieve the desired mode characteristics. If the vehicle is equipped with Magnetic Ride Control, selecting the various Driver Modes adjusts the ride of the vehicle to enhance the ride performance for the road conditions and the selected mode.

The Driver Mode Control has four modes: Tour, Sport, Snow/Ice, and Tow/Haul.

Press the Tow/Haul button to activate and deactivate the Tow/Haul Mode.

Press the MODE switch on the center console to select Tour, Sport, or Snow/Ice. Pressing the switch will display a graphic of all available ride modes and change to the next mode. The Tour and Sport Modes will feel similar on a smooth road. Select a new setting whenever driving conditions change.

### Tour Mode

Use for normal city and highway driving to provide a smooth, soft ride.

When selected, there will be no indication in the DIC.

### Sport Mode

Use where road conditions or personal preference demand a more controlled response.

The steering will change to provide more precise control. The Magnetic Ride Control will change to provide better cornering performance.

When selected, the Sport Mode indicator will display in the DIC.

### Snow/Ice Mode

Use when more traction is needed during slippery conditions.

The vehicle will upshift normally when the vehicle is moving. The acceleration will adjust to help provide a smoother launch.

When selected, the Snow/Ice Mode indicator will display in the DIC.

### Tow/Haul Mode

Tow/Haul is a feature that assists when pulling a heavy trailer or a large or heavy load. See *Tow/Haul Mode* ⇨ *210*.

Tow/Haul is designed to be most effective when the vehicle and trailer combined weight is at least 75 percent of the vehicle's Gross Combined Weight Rating (GCWR). See "Weight of the Trailer" under *Trailer Towing* ⇨ *255*.

Tow/Haul is most useful under the following conditions:

- When pulling a heavy trailer or a large or heavy load through rolling terrain
- When pulling a heavy trailer or a large or heavy load in stop-and-go traffic
- When pulling a heavy trailer or a large or heavy load in busy parking lots where improved low speed control of the vehicle is desired

Operating the vehicle in Tow/Haul when lightly loaded or with no trailer at all will not cause damage. However, there is no benefit to the selection of Tow/Haul when the vehicle is unloaded. Such a selection when unloaded may result in unpleasant engine and transmission driving characteristics and reduced fuel economy. Tow/Haul is recommended only when pulling a heavy trailer or a large or heavy load.

When selected, the Tow/Haul indicator will display in the instrument cluster.

## Magnetic Ride Control

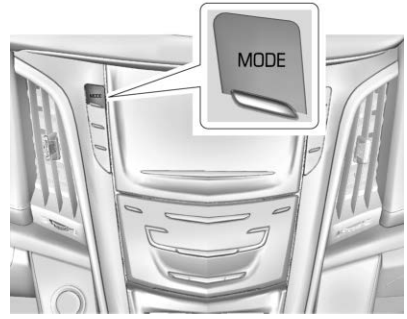
The Magnetic Ride Control monitors the suspension system.

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.

**Snow/Ice :** Use when more traction is needed during slippery conditions.




The vehicle is normally in Tour Mode. Sport Mode and Snow/Ice Mode are engaged when the Magnetic Ride Control MODE button on the center stack is pressed. Press the button to select the desired mode.

The Driver Information Center (DIC) briefly displays the appropriate message on vehicle startup or when a new mode is selected.

## Locking Rear Axle

Vehicles with a locking rear axle can give more traction on snow, mud, ice, sand, or gravel. It works like a standard axle most of the time, but when traction is low, this feature will allow the rear wheel with the most traction to move the vehicle.

## Automatic Level Control

The automatic level control rear suspension comes as a part of the Magnetic Ride Control system.

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 ignition is on and will automatically adjust vehicle height thereafter. The system may exhaust (lower vehicle height) for up to 10 minutes after the ignition has been turned off. You may hear the air compressor operating when the height is being adjusted.

If a weight-distributing hitch is being used, it is recommended to allow the shocks to inflate, 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. Do not use cruise control on winding roads or in heavy traffic.

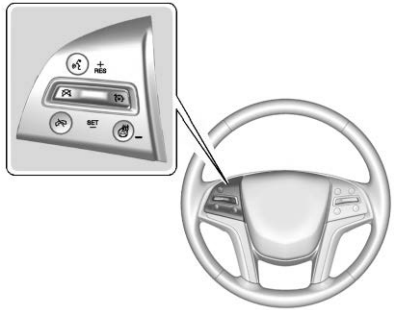
Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

If equipped 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 Traction Control/Electronic Stability Control system begins to limit wheel spin while using cruise control, the cruise control

automatically disengages. See *Traction Control/Electronic Stability Control* ⇨ *218*. If a collision alert occurs when cruise control is activated, cruise control is disengaged. See *Forward Collision Alert (FCA) System* ⇨ *240*. When road conditions allow you to safely use it again, the cruise control can be turned back on.

If the brakes are applied, cruise control disengages.




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

**+RES :** If there is a set speed in memory, press the control up briefly to resume that speed or press and hold to accelerate. If the cruise control is already active, use to increase vehicle speed.

**SET– :** Press the control down briefly to set the speed and activate cruise control. If the cruise control is already active, use to decrease vehicle speed.

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

### Setting Cruise Control

If is on when not in use, SET– or +RES could get pressed and go into cruise when not desired. Keep off when cruise is not being used.

To set cruise control:

1. Press .
2. Get up to the desired speed.
3. Press and release SET–.
4. Remove your 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 Driver Information Center (DIC) and 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 or is pressed, 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 +RES up briefly. 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 vehicle accelerates to the desired speed, then release it.

- To increase vehicle speed in small increments, press +RES up briefly. For each press, the vehicle goes about 1.6 km/h (1 mph) faster.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇨ *130*. 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 briefly. For each press, the vehicle goes about 1.6 km/h (1 mph) slower.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇨ *130*. 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.

While pressing the accelerator pedal or shortly following the release to override cruise, briefly applying the SET– control will result in cruise set to the current vehicle speed.

### Using Cruise Control on Hills

How well the cruise control works on hills depends on the vehicle speed, the load, and the steepness of the hills. When going up steep hills, pressing the accelerator pedal may be necessary to maintain vehicle speed. When going downhill, Cruise Grade Braking helps maintain the driver selected speed.

Cruise Grade Braking is enabled when the vehicle is started and cruise control is active. It is not enabled in Range Selection Mode. It assists in maintaining driver selected speed when driving on downhill grades by using the engine and transmission to slow the vehicle.

To disable and enable Cruise Grade Braking for the current ignition cycle, press and hold the Tow/Haul button for five seconds. A Driver Information Center (DIC) message displays.

For other forms of Grade Braking, see *Automatic Transmission* ⇨ *206* and *Tow/Haul Mode* ⇨ *210*.

### Ending Cruise Control

There are four ways to end cruise control:

- Step lightly on the brake pedal.
- Press ⊗.
- Shift the transmission to N (Neutral).
- To turn off cruise control, 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

If equipped with Adaptive Cruise Control (ACC), it allows for selecting the cruise control set speed and following gap. Read this entire section before using this system. ACC uses a camera and radar sensors to detect other vehicles. See *Radio Frequency Statement* ⇨ *372*. The following gap is the following time (or distance) 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.

If a vehicle is detected in your path, ACC can speed up the vehicle or apply limited, moderate braking to maintain the selected following gap. To disengage ACC, apply the brake. If the Traction Control System (TCS) or electronic stability control system activates while ACC is engaged, ACC may automatically disengage. See *Traction Control/Electronic Stability Control* ⇨ *218*. When road conditions allow ACC to be safely used, the ACC can be turned back on.

ACC will not engage if the TCS or StabiliTrak electronic stability control system is disabled.

**⚠ Warning**

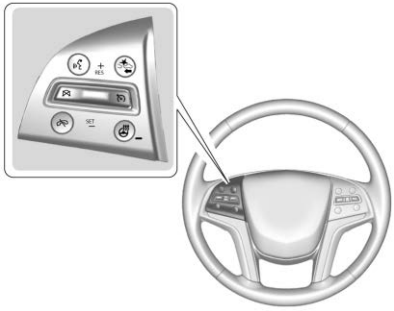
ACC has limited braking ability and may not have time to slow the vehicle down enough to avoid a collision with another vehicle you are following. This can occur when vehicles suddenly slow or stop ahead, or enter your lane. Also see “Alerting the Driver” in this section. Complete attention is always required while driving and you should be ready to take action and apply the brakes. See *Defensive Driving* ⇨ *184*.

**⚠ Warning**

ACC will not detect or brake for children, pedestrians, animals, or other objects.

Do not use ACC 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. ACC performance is limited under these conditions.
- On slippery roads where fast changes in tire traction can cause excessive wheel slip.



**:** Press to turn the system on or off. The indicator turns white on the instrument cluster when ACC is turned on.

**+RES :** Press the control up briefly to resume the previous set speed or hold upwards to accelerate. If ACC is already engaged, use to increase vehicle speed.

**SET– :** Press the control down briefly to set the speed and activate ACC. If ACC is already engaged, use to decrease vehicle speed.

**:** Press to disengage ACC without erasing the selected set speed.

**:** Press to select a following gap time (or distance) setting for ACC of Far, Medium, or Near.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇨ *130*. The increment value used depends on the units displayed.

### Switching Between ACC and Regular Cruise Control

If equipped, to switch between ACC and regular cruise control, press and hold . A Driver Information Display (DIC) message displays. See *Vehicle Messages* ⇨ *151*.

ACC Indicator

Regular Cruise Control Indicator

When ACC is engaged, a green indicator will be lit on the instrument cluster and the following gap will be displayed. When the regular cruise control is engaged, a green indicator will be lit on the instrument cluster; the following gap will not display.

When the vehicle is turned on, the cruise control mode will be set to the last mode used before the vehicle was turned off.

**⚠ Warning**

Always check the cruise control indicator on the instrument cluster to determine which mode cruise control is in before using the feature. If ACC is not active, the vehicle will not automatically brake for other vehicles, which could cause an accident if the brakes are not applied manually. You and others could be seriously injured or killed.

### Setting Adaptive Cruise Control

If is on when not in use, it could get pressed and go into ACC when not desired. Keep off when cruise is not being used.

Select the set speed desired for ACC. This is the vehicle speed when no vehicle is detected in its path.

While the vehicle is moving, ACC will not set at a speed less than 25 km/h (15 mph), although it can be resumed when driving at lower speeds.

To set ACC while moving:

1. Press .
2. Get up to the desired speed.
3. Press and release SET–.
4. Remove your foot from the accelerator.

After ACC is set, it may immediately apply the brakes if a vehicle ahead is detected closer than the selected following gap.

ACC can also be set while the vehicle is stopped if ACC is on and the brake pedal is applied.

The ACC indicator displays on the instrument cluster and Head-Up Display (HUD). When ACC is active, the indicator will be lit green.

Be mindful of speed limits, surrounding traffic speeds, and weather conditions when selecting the set speed.

### Resuming a Set Speed

If 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.

- If the vehicle is moving, it returns to the previous set speed.
- If the vehicle is stopped with the brake pedal applied, press RES+ and release the brake pedal. ACC will hold the vehicle until RES+ or the accelerator pedal is pressed.

A green ACC indicator and the set speed display on the instrument cluster. The vehicle ahead indicator may be flashing if a vehicle ahead was present and moved. See “Approaching and Following a Vehicle” later in this section.

Once ACC has resumed, if there is no vehicle ahead, if the vehicle ahead is beyond the selected following gap, or if the vehicle has exited a sharp curve, then the vehicle speed will increase to the set speed.

### Increasing Speed While ACC is at a Set Speed

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. The ACC indicator will turn blue on the instrument cluster.

- Press and hold +RES up until the desired set speed appears on the display, then release it.
- To increase speed in small increments, briefly press +RES up. For each press, the vehicle speed increases by 1 km/h (1 mph).
- To increase speed in larger increments, press and briefly hold +RES up. For each press, the vehicle speed increases by 5 km/h (5 mph).

When it is determined there is no vehicle ahead or the vehicle ahead is beyond the selected following gap, the vehicle speed will increase to the set speed.

The set speed can also be increased while the vehicle is stopped.

- If stopped with the brake applied, press RES+ until the desired set speed is displayed.
- If ACC is holding the vehicle at a stop and there is another vehicle directly ahead, pressing RES+ will increase the set speed. Pressing RES+ when there is no longer a vehicle ahead will cause ACC to resume.

### Reducing Speed While ACC is at a Set Speed

Do one of the following:

- Use the brake to get to the desired lower speed. Release the brake and press SET– . 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 speed in smaller increments, briefly press SET– down. For each press, the vehicle speed increases by 1 km/h (1 mph).
- To decrease speed in larger increments, press and briefly hold SET– down. For each press, the vehicle speed decreases by 5 km/h (5 mph).
- To decrease speed while the vehicle is stopped, press SET– until the desired set speed is displayed.

### Selecting the Follow Distance Gap

When a slower moving vehicle is detected ahead within the selected following gap, 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.

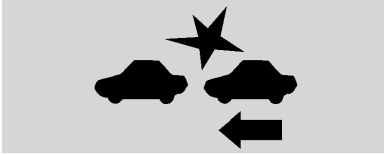
When pressed, the current gap setting displays briefly on the DIC and HUD. The gap setting will be maintained until it is changed.

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* ⇨ *240*.

### Alerting the Driver



If ACC is engaged, driver action may be required when ACC cannot apply sufficient braking when approaching a vehicle too rapidly.

When this condition occurs, 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. See "Collision/ Detection Systems" under *Vehicle Personalization* ⇨ *152*.

See *Defensive Driving* ⇨ *184*.

### Approaching and Following a Vehicle

The vehicle ahead indicator is in the instrument cluster and HUD display.

This indicator only displays when a vehicle is detected in your vehicle's path moving in the same direction.

If this indicator 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 following 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**

ACC may not detect and react to stopped or slow-moving vehicles ahead of you. For example, the system may not brake for a vehicle it has never detected moving. This can occur in stop-and-go traffic or when a vehicle suddenly 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 if:

- The sensors are blocked.
- The Traction Control System (TCS) or electronic stability control system has activated or been disabled.
- There is a fault in the system.
- The radar falsely reports blockage when driving in a desert or remote area with no other vehicles or roadside objects. A DIC message may display to indicate that ACC is temporarily unavailable.

The ACC active indicator will turn white when ACC is no longer active.

In some cases, when ACC will not activate, regular Cruise Control may be used. See “Switching Between ACC and Regular Cruise Control” previously in this section. Always consider driving conditions before using either cruise control system.

### Notification to Resume ACC

ACC will maintain a following gap behind a detected vehicle and slow your vehicle to a stop behind the detected vehicle.

If the stopped vehicle ahead has driven away and ACC has not resumed, the vehicle ahead indicator will flash as a reminder to check traffic ahead before proceeding. 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 “Adaptive Cruise Go Notifier” in “Collision/Detection Systems” under *Vehicle Personalization* ⇨ *152*.

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 seat belt is unbuckled, the ACC automatically applies the Electric Parking Brake (EPB) to hold the vehicle. The EPB status light will turn on. See *Electric Parking Brake* ⇨ *216*. To resume ACC and release the EPB, press the accelerator pedal.

A DIC warning message may display indicating to shift to P (Park) before exiting the vehicle. See *Vehicle Messages* ⇨ *151*.

**⚠ 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, the ACC indicator turns blue on the instrument cluster. 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 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

(Continued)

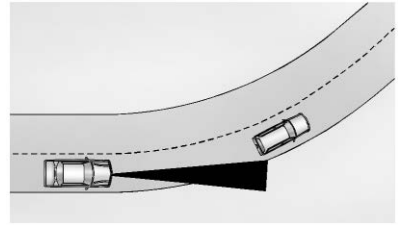
**Warning (Continued)**

on an entrance or exit ramp. Always be ready to use the brakes if necessary.

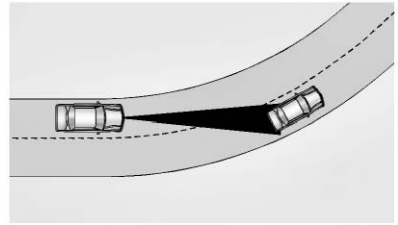
**⚠ Warning**

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.



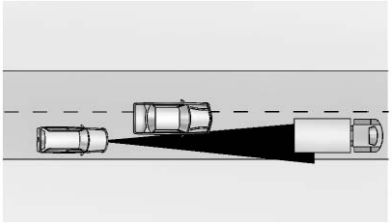
When following a vehicle and entering a curve, ACC may not detect the vehicle ahead and accelerate to the set speed. When this happens, the vehicle ahead indicator will not appear.



ACC may detect a vehicle that is not in your lane and apply the brakes.

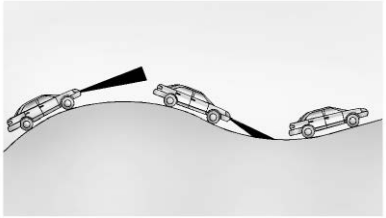
ACC may occasionally provide an alert and/or braking that is considered unnecessary. It could respond to vehicles in different lanes, signs, guardrails, and other stationary objects when entering or exiting a curve. This is normal operation. The vehicle does not need service.

### 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 windshield ahead 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.

If ACC will not operate, regular Cruise Control may be available. See “Switching Between ACC and Regular Cruise Control” previously in this section. Always consider driving conditions before using either cruise control system.

For cleaning instructions, see “Washing the Vehicle” under *Exterior Care* ⇨ *337*.

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* ⇨ *184*.

Under many conditions, these systems will not:

- Detect children, pedestrians, bicyclists, or animals.

(Continued)

**Warning (Continued)**

- 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.
- Work if the detection sensor is covered up, such as with a sticker, magnet, or metal plate.
- Work if the area surrounding the detection sensor is damaged or not properly repaired.

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* ⇨ *152*.

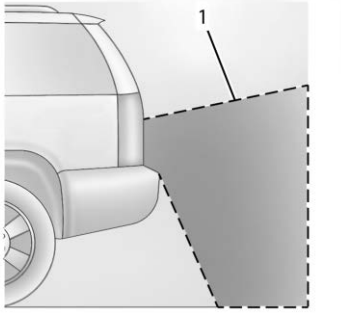
If equipped with the Safety Alert Seat, the driver seat cushion may provide a vibrating pulse alert instead of beeping. To change this, see “Collision/Detection Systems” under *Vehicle Personalization* ⇨ *152*.

## Assistance Systems for Parking or Backing

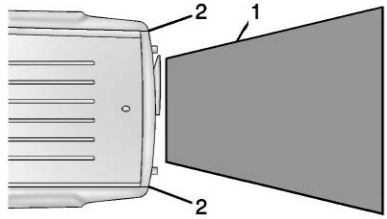
If equipped, the Rear Vision Camera (RVC), Rear Parking Assist (RPA), Front Parking Assist (FPA), Surround Vision, Front Vision Camera, Reverse Automatic Braking (RAB) and Backing Warning System, Rear Cross Traffic Alert (RCTA), and Automatic Parking Assist (APA) may help the driver park or avoid objects. Always check around the vehicle when parking or backing.

### Rear Vision Camera (RVC)

When the vehicle is shifted into R (Reverse), the RVC displays an image of the area behind the vehicle in the infotainment display. The previous screen displays when the vehicle is shifted out of R (Reverse) after a short delay. To return to the previous screen sooner, press any button on the infotainment system, shift into P (Park), or reach a vehicle speed of approximately 12 km/h (8 mph). The rear vision camera is above the license plate.




1. View Displayed by the Rear Vision Camera




1. View Displayed by the Rear Vision 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.

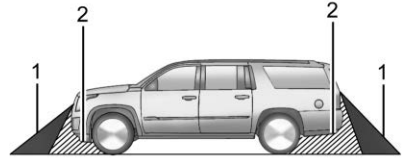
A warning triangle may display to show that Rear Parking Assist (RPA) has detected an object. This triangle changes from amber to red and increases in size the closer the object.

### Surround Vision

If equipped, Surround Vision displays an image of the area surrounding the vehicle, along with the front or rear camera views in the infotainment display. The front camera is in the grille or near the front emblem, the side cameras are on the bottom of the outside rearview mirrors, and the rear camera is above the license plate.

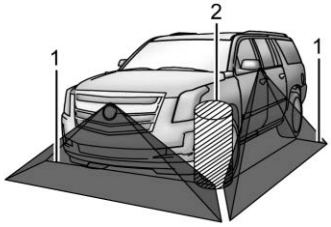
**⚠ Warning**

The Surround Vision cameras have blind spots and will not display all objects near the corners of the vehicle. Folding side mirrors that are out of position will not display surround view correctly. Always check around the vehicle when parking or backing.



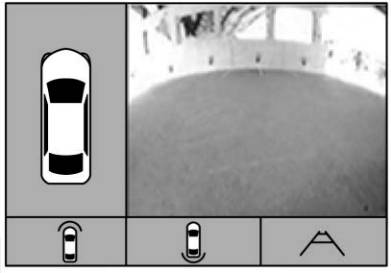

1. Views Displayed by the Surround Vision Cameras

2. Area Not Shown




1. Views Displayed by the Surround Vision Cameras
2. Area Not Shown

### Front Vision Camera



If equipped, a view of the area in front of the vehicle shows in the infotainment display. The view displays after shifting from R (Reverse) to a forward gear, or by touching CAMERA on the infotainment display, and when the vehicle is moving forward slower than 8 km/h (5 mph). If equipped, the front view camera also displays when the Parking Assist system detects an object within 30 cm (12 in).

**⚠ Warning**

The camera(s) do not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object outside of the cameras' field of view, below the bumper, or under the vehicle. Shown distances may be different from actual distances. Do not drive or park the vehicle using only these camera(s). Always check behind and around the vehicle before driving. Failure to use proper care may result in injury, death, or vehicle damage.

### Parking Assist

With Front and Rear Parking Assist, as the vehicle moves at speeds of less than 8 km/h (5 mph) the sensors on the bumpers may detect objects up to 1.2 m (4 ft) in front and 2.5 m (8 ft) behind the vehicle within a zone 25 cm (10 in) high off the ground and below bumper level. These detection distances may be shorter during warmer or humid weather. Blocked sensors will not detect objects and can also cause false detections. Keep the sensors clean of mud, dirt, snow, ice, and slush; and clean sensors after a car wash in freezing temperatures.

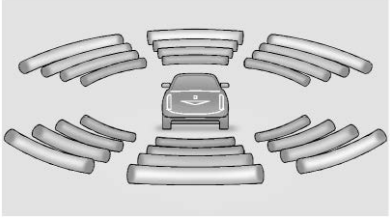
**⚠ Warning**

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

(Continued)

**Warning (Continued)**

damage, even with Parking Assist, always check the area around the vehicle and check all mirrors before moving forward or backing.



The instrument cluster may have a parking assist display with bars that show “distance to object” and object location information for the Front and Rear Parking Assist system. As the object gets closer, more bars light up and the bars change color from yellow to amber to red.

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), a continuous beep will sound from the front or rear depending on object location, or both sides of the Safety Alert Seat will pulse five times. Beeps for FPA are higher pitched than for RPA.

### Backing Warning and Reverse Automatic Braking

Vehicles with Adaptive Cruise Control (ACC) have the Backing Warning and Reverse Automatic Braking (RAB). The Backing Warning part of this 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 injury, death, or vehicle damage, even with the Backing Warning System, always check the area around the vehicle and check all mirrors before backing.

When the vehicle is in R (Reverse), if the system detects the vehicle is backing too fast to avoid a crash with a detected object behind your vehicle in your path, it may automatically brake hard to a stop to help avoid or reduce the harm caused by a backing crash.

**⚠ Warning**

RAB may not avoid many types of backing crashes. Do not wait for the automatic braking to apply. This system is not designed to replace driver braking and only works in R (Reverse) when an object is detected directly behind the vehicle. It may not brake or stop in time to avoid a crash. It will not brake for objects when the vehicle is moving at very low speeds. 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 RAB, always check the area around the vehicle before and while backing.

Pressing the brake pedal after the vehicle comes to a stop will release RAB. If the brake pedal is not pressed soon after the stop, the Electric Parking Brake may be set. When it is safe, press the accelerator pedal firmly at any time to override RAB.

**⚠ 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 RAB system. Before releasing the brakes, check the RVC and check the area around the vehicle to make sure it is safe to proceed.

### Rear Cross Traffic Alert (RCTA)

If equipped, when the vehicle is shifted into R (Reverse), RCTA shows a red warning triangle with a left or right pointing arrow on the infotainment display to warn of traffic coming from the left or right. This system detects objects coming from up to 20 m (65 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 backing up 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.

### Turning the Features On or Off

Press P on the center stack to turn on or off the Front and Rear Parking Assist, Rear Cross Traffic Alert, Reverse 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.

Front and Rear Parking Assist can be turned off, on, or on with towbar through vehicle personalization. See

"Park Assist" under *Vehicle Personalization* ⇨ *152*. If the parking assist is turned off through vehicle personalization, the park assist button will be disabled. To turn the parking assist on again, select On in the vehicle personalization menu. The On with Towbar setting allows for the parking assist to work properly with the trailer hitch.

Turn off parking assist and Reverse Automatic Braking when towing a trailer.

To turn the RPA symbols, guidance lines (on some models), or Rear Cross Traffic Alert on or off, see "Rear Camera" under *Vehicle Personalization* ⇨ *152*. On some models, select the guidance lines button on the infotainment display to turn them on or off.

On some vehicles the RCTA setting can be turned off through "Collision/ Detection Systems" under *Vehicle Personalization* ⇨ *152*.

## Automatic Parking Assist (APA)

If equipped, APA searches for and steers the vehicle into parallel and perpendicular parking spots. When using APA, you must still shift gears, and control the brakes and accelerator. A display and audible beeps help to guide parking maneuvers.

**⚠ Warning**

APA does not apply the brakes. APA may not detect objects in the parking space, objects that are soft or narrow, objects high off the ground such as flatbed trucks, or objects below ground level such as large potholes. Always verify that the parking space is appropriate for parking a vehicle. APA does not respond to changes in the parking space, such as movement of an adjacent vehicle, or a person or object entering the parking space. APA does not detect or avoid traffic that is behind or alongside of the

(Continued)

**Warning (Continued)**

vehicle. Always be prepared to stop the vehicle during the parking maneuver.

Press P on the center stack to enable the system to search for a parking space that is large enough and within 1.5 m (5 ft) of the vehicle. The vehicle speed must be below 30 km/h (18 mph). APA does not work in 4↑ or 4↓.

The system cannot:

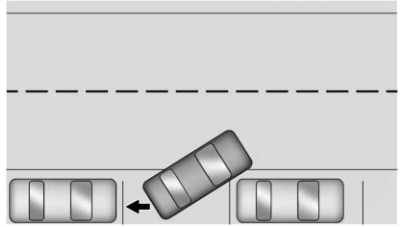
- Detect whether it is a legal parking space.
- Park exactly lined up with the vehicle next to it if the spot is approached at an angle or if the parking space is angled.
- Park exactly centered in a spot that is marked too large.
- Always detect short curbs.

When enabled, APA searches for parallel parking spaces to the right of the vehicle. To search for a parking

space to the left, turn on the left turn signal or, if available, change the side selection in the infotainment display. To switch the parking mode between parallel and perpendicular, press and hold P during the search process or, if available, change the parking mode in the infotainment display.

After completely passing a large enough space, an audible beep occurs and a red stop symbol is displayed.

If the vehicle is in R (Reverse), but does not steer into the expected space, this may be because the system is maneuvering the vehicle into a previously detected space. The APA system does not need service.



APA will instruct the vehicle to stop once a large enough space is found. Follow the displayed instructions. When instructed to drive in reverse, shift to R (Reverse) to engage automatic steering. The steering wheel will briefly vibrate as a reminder to remove hands from the steering wheel. Check surroundings and continue braking or accelerating as needed, and be prepared to stop to avoid vehicles, pedestrians, or objects.

If the vehicle exceeds 10 km/h (6 mph), APA is automatically disengaged and automatic steering will turn off. A progress arrow displays the status of the parking maneuver. Depending on the space size, additional maneuvers may be required, and there will be additional instructions. When changing gears, allow the automatic steering to complete before continuing the parking maneuver. Upon successful completion of a maneuver, APA will beep and display a PARKING COMPLETE message. Place the vehicle in P (Park).

APA may automatically disengage if:

- The steering wheel is used by the driver.
- The maximum allowed speed is exceeded.
- There is a failure with the APA system.
- Electronic stability control or antilock brakes are activated.
- A high priority vehicle message is displayed in the DIC.

To cancel APA, press P again.

### When the System Does Not Seem to Work Properly

The APA system may require a short period of driving along curves to calibrate.

## Assistance Systems for Driving

If equipped, when driving the vehicle in a forward gear, Forward Collision Alert (FCA), Lane Departure Warning (LDW), Lane Keep Assist (LKA), Side Blind Zone Alert (SBZA), Lane Change Alert (LCA), and/or Forward Automatic Braking (FAB) can help to avoid a crash or reduce crash damage.

## Forward Collision Alert (FCA) System

If equipped, the FCA system may help to avoid or reduce the harm caused by front-end crashes. When approaching a vehicle ahead too quickly, FCA provides a red flashing alert on the windshield and rapidly beeps or pulses the driver seat. FCA also lights an amber 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 8 km/h (5 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* ⇨ *225*.

**⚠ 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. It also may not provide any warning at all. FCA does not warn of pedestrians, animals, signs, guardrails, bridges, construction barrels, or other objects. Be ready to take action and apply the brakes. See *Defensive Driving* ⇨ *184*.

FCA can be disabled with either the FCA steering wheel control or, if equipped, through vehicle personalization. See “Collision/ Detection Systems” under *Vehicle Personalization* ⇨ *152*.

### Detecting the Vehicle Ahead

FCA warnings will not occur unless the FCA system detects a vehicle ahead. When a vehicle is detected, the vehicle ahead indicator will display green. Vehicles may not be detected on curves, highway exit ramps, or hills, due to poor visibility; or if a vehicle ahead is partially blocked by pedestrians or other objects. FCA will not detect another vehicle ahead until it is completely in the driving lane.

**⚠ Warning**

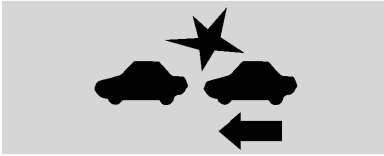
FCA does not provide a warning to help avoid a crash, unless it detects a vehicle. FCA may not detect a vehicle ahead if the FCA sensor is blocked by dirt, snow, or ice, or if

(Continued)

**Warning (Continued)**

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

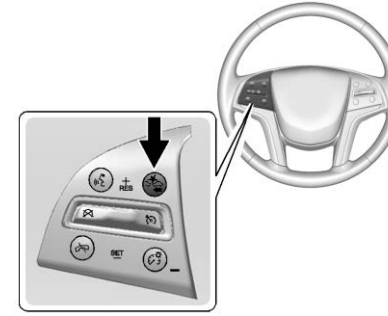


When your vehicle approaches another detected vehicle too rapidly, the red FCA display will flash on the windshield. Also, eight rapid high-pitched beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. When this Collision Alert occurs, the brake system may prepare for driver braking to occur more rapidly which can cause a brief, mild deceleration. Continue to apply the brake pedal as needed. Cruise control may be disengaged when the Collision Alert occurs.

### Tailgating Alert

The vehicle ahead indicator will display amber when you are following a vehicle ahead much too closely.

### Selecting the Alert Timing




The Collision Alert control is on the steering wheel. Press to set the FCA timing to Far, Medium, Near, or on some vehicles, Off. The first button press shows the current setting on the Driver Information Center (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.

If your vehicle is equipped with Adaptive Cruise Control (ACC), changing the FCA timing setting automatically changes the ACC following gap setting (Far, Medium, or Near).

### 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, this may correct the issue:

- Clean the outside of the windshield in front of the rearview mirror.
- Clean the entire front of the vehicle.
- Clean the headlamps.

For cleaning instructions, see "Washing the Vehicle" under *Exterior Care* ⇨ *337*.

System operation may also be limited under snow, heavy rain, or road spray conditions.

## Forward Automatic Braking (FAB)

If the vehicle has Forward Collision Alert (FCA), it also has FAB, which includes Intelligent Brake Assist (IBA). When the system detects a vehicle ahead in your path that is traveling in the same direction that you may be about to crash into, it can provide a boost to braking or automatically brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear. Depending on the situation, the vehicle may automatically brake moderately or hard. This forward automatic braking can only occur if a vehicle is detected. This is shown by the FCA vehicle ahead indicator being lit. See *Forward Collision Alert (FCA) System* ⇨ *240*.

The system works when driving in a forward gear between 8 km/h (5 mph) and 80 km/h (50 mph), or on vehicles with Adaptive Cruise Control (ACC), above 4 km/h (2 mph). It can detect vehicles up to approximately 60 m (197 ft).

**⚠ Warning**

FAB is an emergency crash preparation feature and is not designed to avoid crashes. Do not rely on FAB to brake the vehicle. FAB will not brake outside of its operating speed range and only responds to detected vehicles.

FAB may not:

- Detect a vehicle ahead on winding or hilly roads.
- Detect all vehicles, especially vehicles with a trailer, tractors, muddy vehicles, etc.
- Detect a vehicle when weather limits visibility, such as in fog, rain, or snow.

(Continued)

**Warning (Continued)**

- Detect a vehicle ahead if it is partially blocked by pedestrians or other objects.

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.

FAB may slow the vehicle to a complete stop to try to avoid a potential crash. If this happens, FAB may engage the Electric Parking Brake (EPB) to hold the vehicle at a stop. Release the EPB or firmly press the accelerator pedal.

**⚠ Warning**

FAB may automatically brake the vehicle suddenly in situations where it is unexpected and undesired. It could respond to a turning vehicle ahead, guardrails,

(Continued)

**Warning (Continued)**

signs, and other non-moving objects. To override FAB, firmly press the accelerator pedal, if it is safe to do so.

## 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 only when the brake pedal is released.

**⚠ Warning**

IBA may increase vehicle braking in situations when it may not be necessary. You could block the flow

(Continued)

**Warning (Continued)**

of traffic. If this occurs, take your foot off the brake pedal and then apply the brakes as needed.

FAB and IBA can be disabled through vehicle personalization. See “Collision/ Detection Systems” under *Vehicle Personalization* ⇨ *152*.

**⚠ Warning**

Using FAB or IBA while towing a trailer could cause you to lose control of the vehicle and crash. Turn the system to Alert, or if the vehicle has ACC to Off, when towing a trailer.

A system unavailable message may display if:

- The front of the vehicle or windshield is not clean.
- Heavy rain or snow is interfering with object detection.

- There is a problem with the StabiliTrak system.

The FAB system does not need service.

## Side Blind Zone Alert (SBZA)

If equipped, the SBZA system is a lane-changing aid that assists drivers with avoiding crashes that occur with moving vehicles in the side blind zone (or spot) areas. When the vehicle is in a forward gear, the left or right side mirror display will light up if a moving 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. Since this system is part of the Lane Change Alert (LCA) system, read the entire LCA section before using this feature.

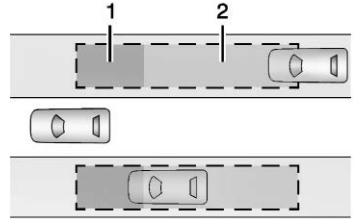
## Lane Change Alert (LCA)

If equipped, the LCA system is a lane-changing aid that assists drivers with avoiding lane change crashes that occur with moving vehicles in the side blind zone (or spot) areas or with vehicles rapidly approaching these areas from behind. The LCA warning display will light up in the corresponding outside side mirror and will flash if the turn signal is on.

**⚠ Warning**

LCA does not alert the driver to vehicles outside of the system detection zones, pedestrians, bicyclists, or animals. It may not provide alerts when changing lanes under all driving conditions. Failure to use proper care when changing 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.

### LCA Detection Zones




1. SBZA Detection Zone
2. LCA Detection Zone

The LCA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2 m (6 ft) off the ground. The Side Blind Zone Alert (SBZA) warning area starts at approximately the middle of the vehicle and goes back 5 m (16 ft). Drivers are also warned of vehicles rapidly approaching from up to 70 m (230 ft) behind the vehicle.

## How the System Works

The LCA symbol lights up in the side mirrors when the system detects a moving vehicle in the next lane over that is in the side blind zone or rapidly approaching that zone from behind. A lit LCA symbol indicates it may be unsafe to change lanes. Before making a lane change, check the LCA 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 LCA displays will briefly come on to indicate the system is operating. When the vehicle is in a forward gear, the left or right side mirror display will light up if a moving vehicle is detected in the next lane over in that blind zone or rapidly approaching that zone. If the turn signal is activated in the same direction as a detected vehicle, this display will flash as an extra warning not to change lanes.

LCA can be disabled. See “Collision/ Detection Systems” under *Vehicle Personalization* ⇨ *152*. If LCA is disabled by the driver, the LCA mirror displays will not light up.

## When the System Does Not Seem to Work Properly

The LCA system requires some driving for the system to calibrate to maximum performance. This calibration may occur more quickly if the vehicle is driving on a straight highway road with traffic and roadside objects (e.g., guardrails, barriers).

LCA displays may not come on when passing a vehicle quickly, for a stopped vehicle, or when towing a trailer. The LCA detection zones that extend back from the side of the vehicle do not move further back when a trailer is towed. Use caution while changing lanes when towing a trailer. LCA may alert to objects attached to the vehicle, such as a trailer, bicycle, or object extending out to either side of the vehicle. Attached objects may also interfere with the detection of vehicles. This is normal system operation; the vehicle does not need service.

LCA may not always alert the driver to vehicles in the next lane over, especially in wet conditions or when driving on sharp curves. 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.

LCA may not operate when the LCA 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* ⇨ *337*. If the DIC still displays the system unavailable message after cleaning both sides of the vehicle toward the rear corners of the vehicle, see your dealer.

If the LCA displays do not light up when moving vehicles are in the side blind zone or are rapidly approaching this zone and the system is clean, the system may need service. Take the vehicle to your dealer.

### Radio Frequency Information

See *Radio Frequency Statement* ⇨ *372*.

## Lane Departure Warning (LDW)

If equipped, LDW may help avoid crashes due to unintentional lane departures. It may provide a warning if the vehicle is crossing a detected lane marking without using a turn signal in the lane departure direction. Since this system is part of the Lane Keep Assist (LKA) system, read the entire LKA section before using this feature.

## Lane Keep Assist (LKA)

If equipped, LKA may help avoid crashes due to unintentional lane departures. It may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking without using a turn signal in that direction. It may also provide a Lane Departure Warning (LDW) system alert as the lane marking is crossed. The LKA system will not assist or provide an LDW alert if it detects that you are actively steering. Override LKA by turning the steering wheel. LKA uses a camera to detect lane markings between 60 km/h (37 mph) and 180 km/h (112 mph).

**⚠ Warning**

The LKA system does not continuously steer the vehicle. It may not keep the vehicle in the lane or give a Lane Departure Warning (LDW) alert, even if a lane marking is detected.

The LKA and LDW systems may not:

- Provide an alert or enough steering assist to avoid a lane departure or crash.

(Continued)

**Warning (Continued)**

- Detect lane markings under poor weather or visibility conditions. This can occur if the windshield or headlamps are blocked by dirt, snow, or ice, if they are not in proper condition, or if the sun shines directly into the camera.
- Detect road edges.
- Detect lanes on winding or hilly roads.

If LKA only detects lane markings on one side of the road, it will only assist or provide an LDW alert when approaching the lane on the side where it has detected a lane marking. Even with LKA and LDW, you must steer the vehicle. 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, headlamps,

(Continued)

**Warning (Continued)**

and camera sensors clean and in good repair. Do not use LKA in bad weather conditions.

**⚠ Warning**

Using LKA while towing a trailer or on slippery roads could cause loss of control of the vehicle and a crash. Turn the system off.

## How the System Works

The LKA camera sensor is on the windshield ahead of the rearview mirror.

To turn LKA on and off, press on the center stack.

LKA Indicator Light

When on, the LKA indicator is green if LKA is available to assist and provide LDW alerts. It may assist by gently turning the steering wheel and display amber if the vehicle approaches a detected lane marking without using a turn signal in that direction. It may also provide an LDW alert by flashing amber as the lane marking is crossed. Additionally, there may be three beeps, or the driver seat may pulse three times, on the right or left, depending on the lane departure direction.

### Take Steering

The LKA system does not continuously steer the vehicle. If LKA does not detect active driver steering, an alert, chime, or DIC message may be provided. Steer the vehicle to dismiss.

## When the System Does Not Seem to Work Properly

The system performance may be affected by:

- Close vehicles ahead.
- Sudden lighting changes, such as when driving through tunnels.
- Banked roads.
- Roads with poor lane markings, such as two-lane roads.

If the LKA system is not functioning properly when lane markings are clearly visible, cleaning the windshield may help.

A camera blocked message may display if the camera is blocked. Cleaning the outside of the windshield behind the rearview mirror may correct the issue. Some driver assistance systems may have reduced performance or not work at all. An LKA or LDW unavailable message may display if the systems are temporarily unavailable. This message could be due to a blocked camera. The LKA

system does not need service. Clean the outside of the windshield behind the rearview mirror.

LKA assistance and/or LDW alerts may occur due to tar marks, shadows, cracks in the road, temporary or construction lane markings, or other road imperfections. This is normal system operation; the vehicle does not need service. Turn LKA off if these conditions continue.

## Fuel

GM recommends the use of TOP TIER® detergent gasoline to keep the engine cleaner and reduce engine deposits. See www.toptiergas.com for a list of TOP TIER detergent gasoline marketers and applicable countries.

Do not use any fuel labeled E85 or FlexFuel. Do not use gasoline with ethanol levels greater than 15% by volume.

Premium unleaded gasoline meeting ASTM specification D4814 with a posted octane rating of 93 is highly recommended for best performance and fuel economy. Unleaded gasoline with an octane rated as low as 87 can be used. Using unleaded gasoline rated below 93 octane, however, will lead to reduced acceleration and fuel economy. If knocking occurs, use a gasoline rated at 93 octane as soon as possible, otherwise, the engine could be damaged. If heavy knocking is heard when using gasoline with a 93 octane rating, the engine needs service.

### Prohibited Fuels

**Caution**

Do not use fuels with any of the following conditions; doing so may damage the vehicle and void its warranty:

- For vehicles which are not FlexFuel, fuel labeled greater than 15% ethanol by volume, such as mid-level ethanol blends (16 – 50% ethanol), E85, or FlexFuel.

(Continued)

**Caution (Continued)**

- Fuel with any amount of methanol, methylal, and aniline. These fuels can corrode metal fuel system parts or damage plastic and rubber parts.
- Fuel containing metals such as methylcyclopentadienyl manganese tricarbonyl (MMT), which can damage the emissions control system and spark plugs.
- Fuel with a posted octane rating of less than the recommended fuel. Using this fuel will lower fuel economy and performance, and may decrease the life of the emissions catalyst.

## 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 may be affected. The malfunction indicator lamp could turn on and the vehicle may not pass a smog-check test. See *Malfunction Indicator Lamp (Check Engine Light)* ⇨ *137*. 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 may not be covered by the vehicle warranty.

## Fuels in Foreign Countries

The U.S., Canada, and Mexico post fuel octane ratings in anti-knock index (AKI). For fuel not to use in a foreign country, see “Prohibited Fuels” in *Fuel* ⇨ *248*.

## Fuel Additives

To keep fuel systems clean, TOP TIER detergent gasoline is recommended. See *Fuel* ⇨ *248*.

If TOP TIER detergent gasoline is not available, one bottle of GM Fuel System Treatment Cleaner added to the fuel tank at every engine oil change, can help. GM Fuel System Treatment Cleaner is the only gasoline additive recommended by General Motors. It is available at your dealer.

## Filling the Tank

**⚠ Warning**

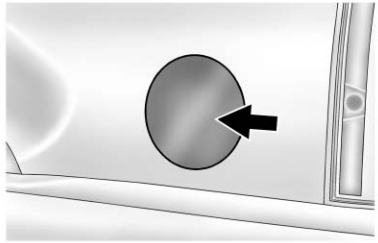
Fuel vapors and fuel fires burn violently and can cause injury or death.

- 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 use a cell phone while refueling.
- 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 and release the rearward center edge of the door.

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.

**⚠ Warning**

Overfilling the fuel tank by more than three clicks of a standard fill nozzle may cause:

- Vehicle performance issues, including engine stalling and damage to the fuel system.
- Fuel spills.
- Potential fuel fires.

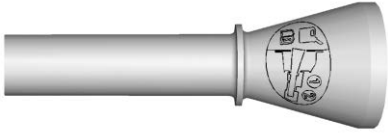
Be careful not to spill fuel. Wait a few seconds after you have finished pumping before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See *Exterior Care* ⇨ *337*.

**⚠ 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 inside the vehicle.
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 means. You or others could be badly burned and the vehicle could be damaged. Always:

- Use approved fuel containers.
- Remove the container from the vehicle, trunk, or pickup bed before filling.
- Place the container on the ground.
- Place the nozzle inside the fill opening of the container before dispensing fuel, and

(Continued)

**Warning (Continued)**

keep it in contact with the fill opening until filling is complete.

- Fill the container no more than 95% full to allow for expansion.
- Do not smoke, light matches, or use lighters while pumping fuel.
- Avoid using cell phones or other electronic devices.

# Trailer 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* ⇨ *332*. For towing the vehicle behind another vehicle such as a motor home, see *Recreational Vehicle Towing* ⇨ *333*.

## 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. These requirements vary from state to state.
- The trailer must be equipped with brakes adequate for the intended use. A loaded trailer weighing more than 900 kg (2,000 lb) must be equipped with its own brake system, with brakes working on all axles. Trailer braking equipment conforming to Canadian Standards Association (CSA) requirement CAN3-D313, or its equivalent, is recommended.
- 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.
- Turn off Parking Assist and Rear Cross Traffic Alert (RTCA) when towing.
- The Forward Automatic Braking System should be set to Off when towing. See *Forward Automatic Braking (FAB)* ⇨ *22*.
- Turn off Lane Keep Assist (LKA) when towing. See *Lane Keep Assist (LKA)* ⇨ *246*.

**⚠ 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.

(Continued)

**Warning (Continued)**

- Also adjust the climate control system to a setting that brings in only outside air. See “Climate Control Systems” in the Index.

For more information about carbon monoxide, see *Engine Exhaust* ⇨ *205*.

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.

The structure, tires, and brakes of the trailer must be rated to carry the load. Inadequate trailer equipment can cause the combination to operate in an unexpected or unsafe manner.

Before starting, check all trailer hitch parts and attachments, safety chains, electrical connectors, lamps, tires, and mirrors. Get familiar with the handling and braking of the rig. 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

**Caution**

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, use the Tow/Haul Mode to prevent damage to the engine or transmission. See *Tow/Haul Mode* ⇨ *210*.

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 transmission in P (Park) for a few minutes before turning the engine off. If the overheat warning comes on, see *Engine Overheating* ⇨ *276*.

## 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. 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* ⇨ *347*. 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

Do not tow a trailer during break-in. See *New Vehicle Break-In* ⇨ *198*.

Before towing a trailer, see "Hands-Free Operation" under *Liftgate* ⇨ *41*.

**⚠ Warning**

The driver can lose control when pulling a trailer if the correct equipment is not used or the vehicle is not driven properly. For example, if the trailer is too heavy or the trailer brakes are inadequate for the load, the vehicle may not stop as expected. The driver and passengers could be seriously injured. The vehicle may also be damaged; the resulting repairs would not be covered by the vehicle warranty. Pull a trailer only if all the steps in this section have been followed. Ask your dealer for advice and information about towing a trailer with the vehicle.

**Caution**

Pulling a trailer improperly can damage the vehicle and result in costly repairs not covered by the vehicle warranty. To pull a trailer correctly, follow the advice in this section and see your dealer for important information about towing a trailer with the vehicle.

To identify the trailering capacity of the vehicle, see “Weight of the Trailer” following.

Trailering is different than just driving the vehicle by itself. Trailering means changes in handling, acceleration, braking, durability and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

The following information has many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. Read this section carefully before pulling a trailer.

### Weight of the Trailer

Safe trailering requires monitoring the weight, speed, altitude, road grades, outside temperature, and how frequently the vehicle is used to pull a trailer. Take into consideration 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.

Trailer Weight Rating (TWR) is calculated assuming the tow vehicle has not only the driver but all required trailering equipment. Weight of additional optional equipment, passengers, and cargo in the tow vehicle must be subtracted from the TWR.

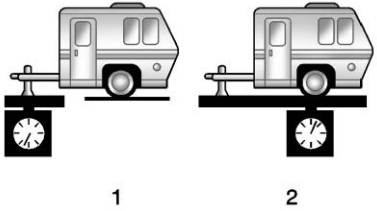
Use the following chart to determine how much the trailer can weigh, based upon the vehicle model and options.

| Vehicle | Axle Ratio | Maximum Trailer Weight | GCWR* |
|---|---|---|---|
| | | | |
| Escalade 2WD Short Wheelbase | 3.23 | 3 765 kg (8,300 lb) | 6 350 kg (14,000 lb) |
| Escalade 4WD Short Wheelbase | 3.23 | 3 674 kg (8,100 lb) | 6 350 kg (14,000 lb) |
| Escalade 2WD Long Wheelbase | 3.23 | 3 674 kg (8,100 lb) | 6 350 kg (14,000 lb) |
| Escalade 4WD Long Wheelbase with 20 inch wheels | 3.23 | 3 583 kg (7,900 lb) | 6 350 kg (14,000 lb) |
| Escalade 4WD Long Wheelbase with 22 inch wheels | 3.23 | 3 538 kg (7,800 lb) | 6 350 kg (14,000 lb) |
| *The Gross Combination Weight Rating (GCWR) is the total allowable weight of the completely loaded vehicle and trailer including any passengers, cargo, equipment, and conversions. The GCWR for the vehicle should not be exceeded. | | | |

Ask your dealer for trailering information or advice.

## Weight of the Trailer Tongue

The tongue load (1) of any trailer is very important because it is also part of the vehicle weight. 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 as well as trailer tongue weight. Vehicle options, equipment, passengers, and cargo in the vehicle reduce the amount of tongue weight the vehicle can carry, which will also reduce the trailer weight the vehicle can tow. See *Vehicle Load Limits* ➪ *193* for more information about the vehicle's maximum load capacity.




In general, trailer tongue weight (1) should be 10-15 % of the loaded trailer weight (2). Some specific trailer types (especially boat trailers) fall outside of this range. In this case, the recommended tongue weight in the trailer owner's manual should be observed. In all cases, the maximum loads for the vehicle series and hitch type should not be exceeded.

| Vehicle Series | Hitch Type | Maximum Tongue Weight |
|---|---|---|
| 1500 | Weight Carrying | 272 kg (600 lb) |
| 1500 | Weight Distributing | 453 kg (1,000 lb) |

Do not exceed the maximum allowable tongue weight for the vehicle. Choose the shortest hitch extension that will position the hitch ball closest to the vehicle. This will help reduce the effect of trailer tongue weight on the rear axle.

Trailer rating may be limited by the vehicle's ability to carry tongue weight. Tongue weight cannot cause the vehicle to exceed the GVWR (Gross Vehicle Weight Rating) or the RGAWR (Rear Gross Axle Weight Rating). See "Total Weight on the Vehicle's Tires" following.

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.

If a cargo carrier is used in the trailer hitch receiver, choose a carrier that positions the load as close to the vehicle as possible. Make sure the total weight, including the carrier, is no more than half of the maximum allowable tongue weight for the vehicle or 227 kg (500 lb), whichever is less.

## Total Weight on the Vehicle's Tires

Be sure the vehicle's tires are inflated to the inflation pressures found on the Certification label on the center pillar or see *Vehicle Load Limits* ⇨ *193*. Make sure not to exceed the GVWR limit for the vehicle, or the RGAWR, with the tow vehicle and trailer fully loaded for the trip including the weight of the trailer tongue. If using a weight-distributing hitch, make sure

not to exceed the RGAWR before applying the weight distribution spring bars.

### Weight of the Trailering Combination

It is important that the combination of the tow vehicle and trailer does not exceed any of its weight ratings — GCWR, GVWR, RGAWR, TWR or Tongue Weight. The only way to be sure it is not exceeding any of these ratings is to weigh the tow vehicle and trailer combination, fully loaded for the trip, getting individual weights for each of these items.

## Towing Equipment

### Hitches

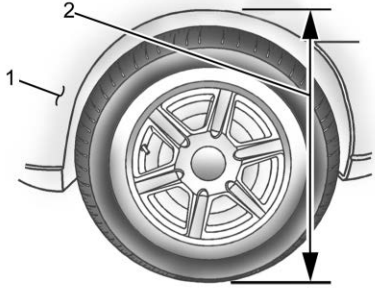
The correct hitch equipment helps maintain combination control. Most small-to-medium trailers can be towed with a weight-carrying hitch which simply features a coupler latched to the hitch ball. Larger trailers may require a weight-distributing hitch that uses spring bars to distribute the trailer tongue weight among the two vehicle and trailer axles. See “Weight of the Trailer Tongue” in *Trailer Towing* ⇨ *255* for rating limits with various hitch types.

Consider using sway controls with any trailer. Ask a trailering professional about sway controls or refer to the trailer manufacturer's recommendations and instructions.

### Weight-Distributing Hitch and Adjustment

A weight-distributing hitch may be useful with some trailers. Use the following guidelines to determine if a weight-distributing hitch should be used.

| Vehicle Series | Trailer Weight | Weight-Distributing Hitch Usage | Hitch Distribution |
|---|---|---|---|
| 1500 | Up to 3 175 kg (7,000 lb) | Optional | Refer to trailer manufacturer's recommendation |
| 1500 | Over 3 175 kg (7,000 lb) | Required | 50% |




1. Front of Vehicle
2. Body to Ground Distance

When using a weight-distributing hitch, measure distance (2) before coupling the trailer to the hitch ball. Measure the height again after the trailer is coupled and adjust the spring bars so the distance (2) is as close as possible to halfway between the two measurements.

## 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. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. If the trailer being towed weighs up to 2 271 kg (5,000 lb) with a factory-installed step bumper, safety chains may be attached to the attaching points on the bumper, otherwise, safety chains should be attached to holes on the trailer hitch platform. Always leave just enough slack so the combination can turn. Never allow safety chains to drag on the ground.

## Trailer Brakes

A loaded trailer that weighs more than 900 kg (2,000 lb) must be equipped with its own brake system, with brakes working on all axles. Trailer braking equipment conforming to Canadian Standards Association (CSA) requirement CAN3-D313, or its equivalent, is recommended.

State and local regulations may also require the trailer to have its own braking system if loaded above a certain threshold. These requirements vary from state to state.

Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted, and maintained properly.

Do not tap into the vehicle's hydraulic system.

Since the vehicle is equipped with StabiliTrak, the trailer brakes cannot tap into the vehicle's hydraulic system.

### Trailer Wiring Harness

The seven-pin trailer connector is mounted in the bumper. This connector can be plugged into a seven-pin universal heavy-duty trailer connector available through your dealer.

Use only a round, seven-wire connector with flat blade terminals meeting SAE J2863 specifications for proper electrical connectivity.

The seven-wire harness contains the following trailer circuits:

- Yellow/Grey: Left Stop/Turn Signal
- Green/Violet: Right Stop/Turn Signal
- Grey/Brown: Taillamps
- White: Ground
- White/Green: Back-up Lamps
- Red/Green: Battery Feed
- Dark Blue: Trailer Brake

To help charge a remote (non-vehicle) battery, press the Tow/Haul Mode button at the end of the shift lever. If the trailer is too light for Tow/Haul Mode, turn on the headlamps to help charge the battery.

### Electric Brake Control Wiring Provisions

These wiring provisions are included with the vehicle as part of the trailer wiring package. These provisions are for an electric brake controller.

The harness should be installed by your dealer or a qualified service center.

## Trailer Sway Control (TSC)

Vehicles with StabiliTrak have a Trailer Sway Control (TSC) feature. Trailer sway is unintended side-to-side motion of a trailer while being towed. If the vehicle is towing a trailer and the TSC detects that sway is increasing, the vehicle brakes are selectively applied at each wheel, to help reduce excessive trailer sway.

If TSC is enabled, the Traction Control System (TCS)/StabiliTrak warning light will flash on the instrument cluster. Vehicle speed must be reduced. If trailer sway continues, StabiliTrak can reduce engine torque to help slow the vehicle. See *Traction Control/Electronic Stability Control* ⇨ *218*.

**⚠ Warning**

Even if the vehicle is equipped with TSC, trailer sway could result in loss of control and the vehicle could crash. If excessive trailer sway is detected, slow down to a safe speed. Check the trailer and vehicle to help correct possible causes. These could include an improperly or overloaded trailer, unrestrained cargo, improper trailer hitch configuration, excessive

(Continued)

**Warning (Continued)**

vehicle-trailer speed, or improperly inflated or incorrect vehicle or trailer tires. See *Towing Equipment* ⇨ *258* for trailer ratings and hitch setup recommendations.

Adding non-dealer accessories can affect the vehicle performance. See *Accessories and Modifications* ⇨ *265*.

## Electronic Trailer Sway Control Devices

Some trailers may come equipped with an electronic device designed to reduce or control trailer sway. Aftermarket equipment manufacturers also offer similar devices that connect to the wiring between the trailer and the vehicle. These devices may interfere with the vehicle's trailer brake or other systems, including integrated anti-sway systems, if equipped. Messages related to trailer connections or trailer brakes could appear on the Driver Information Center (DIC). The effect that these devices may have on vehicle handling or trailer brake performance is unknown.

**⚠ Warning**

Use of electronic trailer sway control devices could result in reduced trailer brake performance, loss of trailer brakes, or other malfunctions, and could cause a crash. You or others could be injured or killed. Before using one of these devices:

- Ask the device or trailer manufacturer if the device has been thoroughly tested for compatibility with the make, model, and year of the vehicle as well as optional equipment installed on the vehicle.
- Before driving on the open roads, check that the trailer brakes are working properly. Drive the vehicle with the trailer attached on a level

(Continued)

**Warning (Continued)**

road surface that is free of traffic at about 32-40 km/h (20-25 mph) and fully apply the manual trailer brake apply lever. Also check that the trailer brake lamps and other lamps are functioning correctly.

- If the trailer brakes are not operating properly at any time, or if a DIC message indicates problems with the trailer connections or trailer brakes, carefully pull the vehicle over to the side of the road when traffic conditions allow.

# Conversions and Add-Ons

## Add-On Electrical Equipment

**⚠ Warning**

The Data Link Connector (DLC) is used for vehicle service and Emission Inspection/Maintenance testing. See *Malfunction Indicator Lamp (Check Engine Light)* ⇨ *137*. A device connected to the DLC — such as an aftermarket fleet or driver-behavior tracking device — may interfere with vehicle systems. This could affect vehicle operation and cause a crash. Such devices may also access information stored in the vehicle's systems.

**Caution**

Some electrical equipment can damage the vehicle or cause components to not work and would not be covered by the vehicle 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* ⇨ *94* and *Adding Equipment to the Airbag-Equipped Vehicle* ⇨ *94*.

# Vehicle Care

## General Information

General Information ..... 264
California Proposition 65 Warning ..... 264
California Perchlorate Materials Requirements ..... 265
Accessories and Modifications ..... 265

## Vehicle Checks

Doing Your Own Service Work ..... 265
Hood ..... 266
Engine Compartment Overview ..... 267
Engine Oil ..... 268
Engine Oil Life System ..... 270
Automatic Transmission Fluid ..... 271
Engine Air Cleaner/Filter ..... 272
Cooling System ..... 273
Engine Overheating ..... 276
Engine Fan ..... 277
Washer Fluid ..... 278
Brakes ..... 278
Brake Fluid ..... 279
Battery - North America ..... 280
Four-Wheel Drive ..... 281
Front Axle ..... 282
Rear Axle ..... 282
Starter Switch Check ..... 283
Automatic Transmission Shift Lock Control Function Check ..... 283
Park Brake and P (Park) Mechanism Check ..... 284
Wiper Blade Replacement ..... 284
Glass Replacement ..... 285
Windshield Replacement ..... 285
Gas Strut(s) ..... 285

## Headlamp Aiming

Headlamp Aiming ..... 287

## Bulb Replacement

Bulb Replacement ..... 287
LED Lighting ..... 287
License Plate Lamp ..... 287

## Electrical System

Electrical System Overload ..... 288
Fuses and Circuit Breakers ..... 288
Engine Compartment Fuse Block ..... 289
Instrument Panel Fuse Block (Left) ..... 293
Instrument Panel Fuse Block (Right) ..... 296
Rear Compartment Fuse Block ..... 298

## Wheels and Tires

Tires ..... 299
All-Season Tires ..... 300
Winter Tires ..... 300
Low-Profile Tires ..... 301
All-Terrain Tires ..... 301
Tire Sidewall Labeling ..... 301
Tire Designations ..... 302
Tire Terminology and Definitions ..... 303
Tire Pressure ..... 305
Tire Pressure for High-Speed Operation ..... 307
Tire Pressure Monitor System ... 307
Tire Pressure Monitor Operation ..... 308
Tire Inspection ..... 312
Tire Rotation ..... 312
When It Is Time for New Tires ..... 313
Buying New Tires ..... 314
Different Size Tires and Wheels ..... 315
Uniform Tire Quality Grading ... 316
Wheel Alignment and Tire Balance ..... 317
Wheel Replacement ..... 317
Tire Chains ..... 318

If a Tire Goes Flat ..... 318
Tire Changing ..... 320
Full-Size Spare Tire ..... 328

**Jump Starting**

Jump Starting - North America ..... 329

**Towing the Vehicle**

Towing the Vehicle ..... 332
Recreational Vehicle Towing .... 333

**Appearance Care**

Exterior Care ..... 337
Interior Care ..... 341
Floor Mats ..... 344

# 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:

ACDelco®

Genuine GM | Parts

GM Accessories

## California Proposition 65 Warning

**⚠ Warning**

Most motor vehicles, including this one, as well as many of its service parts and fluids, 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. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

See *Battery - North America* ⇨ *280* and *Jump Starting - North America* ⇨ *329* and the back cover.

## California Perchlorate Materials Requirements

Certain types of automotive applications, such as airbag initiators, seat 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 suspension components caused by modifying vehicle height outside of factory settings will not be 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* ⇨ *94*.

# 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's 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* ⇨ *371*.

This vehicle has an airbag system. Before attempting to do your own service work, see *Servicing the Airbag-Equipped Vehicle* ⇨ *94*.

Keep a record with all parts receipts and list the mileage and the date of any service work performed. See *Maintenance Records* ⇨ *357*.

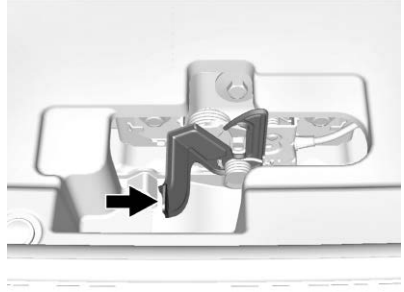
**Caution**

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:

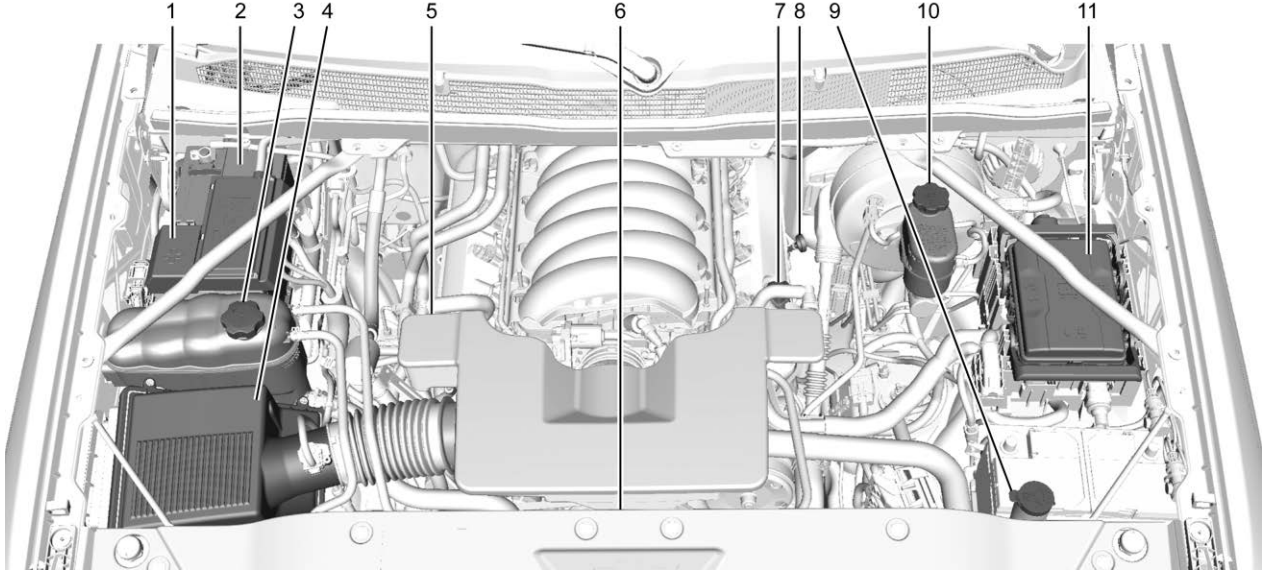
1. Pull the handle with this symbol on it. It is inside the vehicle under the steering wheel.



2. Go to the front of the vehicle to find the secondary hood release. 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 15 cm (6 in) from the closed position, pause, and push the front center of the hood with a swift, firm motion to fully close the hood.

## Engine Compartment Overview



1. Positive (+) Terminal. See *Jump Starting - North America* ⇨ *329*.
2. *Battery - North America* ⇨ *280*.
3. Coolant Surge Tank and Pressure Cap. See *Cooling System* ⇨ *273*.
4. *Engine Air Cleaner/Filter* ⇨ *272*.
5. Remote Negative (–) Location (Out of View). See *Jump Starting - North America* ⇨ *329*.
6. Engine Cooling Fans (Out of View). See *Cooling System* ⇨ *273*.
7. Engine Oil Fill Cap. See "When to Add Engine Oil" under *Engine Oil* ⇨ *268*.
8. Engine Oil Dipstick. See "Checking Engine Oil" under *Engine Oil* ⇨ *268*.
9. Windshield Washer Fluid Reservoir. See "Adding Washer Fluid" under *Washer Fluid* ⇨ *278*.
10. Brake Fluid Reservoir. See *Brake Fluid* ⇨ *279*.
11. *Engine Compartment Fuse Block* ⇨ *289*.

## 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:

- 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* ⇨ *270*.
- Always dispose of engine oil properly. See "What to Do with Used Oil" in this section.

### Checking Engine Oil

Check the engine oil level regularly, every 650 km (400 mi), especially prior to a long trip. The engine oil dipstick handle is a loop. See *Engine Compartment Overview* ⇨ *267* for the location.

**⚠ Warning**

The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

If a low oil Driver Information Center (DIC) message displays, check the oil level.

Follow these guidelines:

- To get an accurate reading, park the vehicle on level ground. Check the engine oil level after the engine has been off for at least two hours. Checking the engine oil level on steep grades or too soon after engine shutoff can result in incorrect readings. Accuracy improves when checking a cold engine prior to starting. Remove the dipstick and check the level.

- If unable to wait two hours, the engine must be off for at least 15 minutes if the engine is warm, or at least 30 minutes if the engine is not warm. Pull out the dipstick, wipe it with a clean 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 and the engine has been off for at least 15 minutes, add 1 L (1 qt) of the recommended oil and then recheck the level. See "Selecting the Right Engine Oil" later in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications* ⇨ *359*.

**Caution**

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* ⇨ *267* 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* ⇨ *355*.

### Specification

Ask for and use engine oils that meet the dexos1™ specification. Engine oils that have been approved by GM as meeting the dexos1 specification are marked with the dexos1 approved logo. See www.gmdexos.com.

**Caution**

Failure to use the recommended engine oil or equivalent can result in engine damage not covered by the vehicle warranty.

### Viscosity Grade

Use SAE 0W-20 viscosity grade engine oil.

When selecting an oil of the appropriate viscosity grade, it is recommended to 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 meeting the dexos1 specification 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. 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 OIL LIFE on the DIC. See *Driver Information Center (DIC)* ⇨ *145*. When remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display.
2. Press and hold SEL on the DIC controls 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. Display OIL LIFE on the DIC. See *Driver Information Center (DIC)* ⇨ *145*.
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

### When to Check and Change Automatic Transmission Fluid

It is usually not necessary to check the transmission fluid level. The only reason for fluid loss is a transmission leak or overheated transmission. This vehicle is not equipped with a transmission fluid level dipstick. There is a special procedure for checking and changing the transmission fluid in these vehicles. Because this procedure is difficult, this should be done at the dealer. Contact the dealer for additional information or the procedure can be found in the service manual. See *Service Publications Ordering Information* ⇨ *371*.

**Caution**

Use of the incorrect automatic transmission fluid may damage the vehicle, and the damage may not be covered by the vehicle warranty. Always use the automatic transmission fluid listed in *Recommended Fluids and Lubricants* ⇨ *355*.

Change the fluid and filter at the scheduled maintenance intervals listed in *Maintenance Schedule* ⇨ *347*. Be sure to use the transmission fluid listed in *Recommended Fluids and Lubricants* ⇨ *355*.

## Engine Air Cleaner/Filter

See *Engine Compartment Overview* ⇨ *267* for the location of the engine air cleaner/filter.

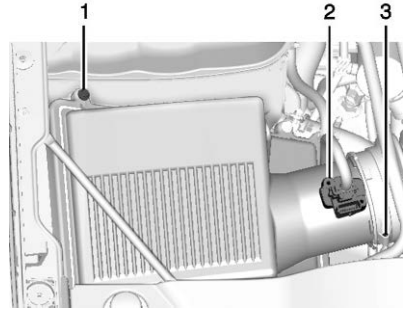
### When to Inspect the Engine Air Cleaner/Filter

For intervals on changing and inspecting the engine air cleaner/filter see *Maintenance Schedule* ⇨ *347*.

### How to Inspect the Engine Air Cleaner/Filter

Do not start the engine or have the engine running with the engine air cleaner/filter housing open. Before removing the engine air cleaner/filter, make sure that the engine air cleaner/filter housing and nearby components are free of dirt and debris. Remove the engine air cleaner/filter. Lightly tap and shake the engine air cleaner/filter (away from the vehicle), to release loose dust and dirt. Inspect the engine air cleaner/filter for damage, and replace if damaged. Do not clean the engine air cleaner/filter or components with water or compressed air.

To inspect or replace the engine air cleaner/filter:




1. Screws
2. Electrical Connector
3. Air Duct Clamp

1. Locate the air cleaner/filter assembly. See *Engine Compartment Overview* ⇨ *267*.
2. Disconnect the outlet duct by loosening the air duct clamp (3).
3. Disconnect the electrical connector (2) and the connector harness from the cover.

4. Remove the four screws (1) on top of the cover of the housing and lift up the cover.
5. Remove the engine air cleaner/filter from the housing. Take care to dislodge as little dirt as possible.
6. Clean the engine air cleaner/filter sealing surfaces and the housing.
7. Inspect or replace the engine air cleaner/filter.
8. Reverse Steps 2-4 to reinstall the filter cover housing.

**⚠ Warning**

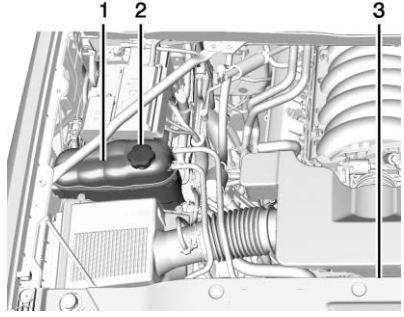
Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air; it helps to stop flames if the engine backfires. Use caution when working on the engine and do not drive with the air cleaner/filter off.

**Caution**

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 driving.

## Cooling System

The cooling system allows the engine to maintain the correct working temperature.




1. Coolant Surge Tank
2. Coolant Surge Tank Pressure Cap
3. Engine Cooling Fan

**⚠ Warning**

An underhood electric fan 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**

Do not touch heater or radiator hoses, or other engine parts. They can be very hot and can burn you. Do not run the engine if there is a leak; all coolant could leak out. That could cause an engine fire and can burn you. Fix any leak before driving the vehicle.

## Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL engine coolant. This coolant is designed to remain in the vehicle for 5 years or 240 000 km (150,000 mi), whichever occurs first.

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* ⇨ *276*.

### What to Use

**⚠ Warning**

Plain water, or other liquids such as alcohol, can boil before the proper coolant mixture will. With plain water or the wrong mixture, the engine could get too hot but there would not be an 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. 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

**Caution**

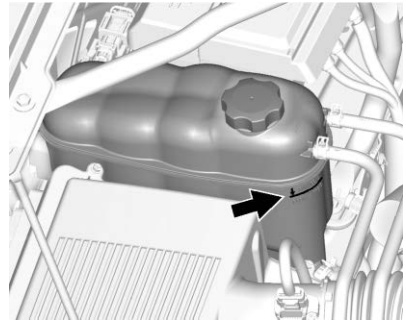
Do not use anything other than a mix of DEX-COOL coolant that meets GM Standard GMW3420 and clean, drinkable water. Anything else can cause damage to the engine cooling system and the vehicle, which would not be covered by the vehicle warranty.

Never dispose of engine coolant by putting it in the trash, or by pouring it on the ground or 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 coolant surge tank is in the engine compartment on the passenger side of the vehicle. See *Engine Compartment Overview* ⇨ *267*.

The vehicle must be on a level surface when checking the coolant level.



Check to see if coolant is visible in the coolant surge tank. If the coolant inside the coolant surge tank is boiling, wait until it cools down. The

coolant level should be at or above the full cold mark. If it is not, there may be a leak in the cooling system.

If coolant is visible but the coolant level is not at or above the full cold mark, see “How to Add Coolant to the Coolant Surge Tank,” following.

### How to Add Coolant to the Coolant Surge Tank for Gasoline Engines

**⚠ Warning**

Spilling coolant on hot engine parts can burn you. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough.

**⚠ Warning**

Plain water, or other liquids such as alcohol, can boil before the proper coolant mixture will. With plain water or the wrong mixture, the engine could get too hot but there

(Continued)

**Warning (Continued)**

would not be an overheat warning. The engine could catch fire and you or others could be burned.

**⚠ Warning**

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to come out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap, is hot. Wait for the cooling system and pressure cap to cool.

**Caution**

Failure to follow the specific coolant fill procedure could cause the engine to overheat and could

(Continued)

**Caution (Continued)**

cause system damage. If coolant is not visible in the surge tank, contact your dealer.

If no coolant is visible in the surge tank, add coolant:

1. Remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot.

   Turn the pressure cap slowly counterclockwise about one full turn. 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 full cold mark.
4. With the coolant surge tank pressure cap off, start the engine and let it run until the engine coolant temperature gauge indicates approximately 90 °C (195 °F).

   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 full cold mark.
5. Replace the pressure cap tightly.
6. Verify coolant level after the engine is shut off and the coolant is cold. If necessary, repeat coolant fill procedure Steps 1-6.

**Caution**

If the pressure cap is not tightly installed, coolant loss and engine damage may occur. Be sure the cap is properly and tightly secured.

## Engine Overheating

**Caution**

Do not run the engine if there is a leak in the engine cooling system. This can cause a loss of all coolant and can damage the system and vehicle. Have any leaks fixed right away.

The vehicle has several indicators to warn of engine overheating.

There is a coolant temperature gauge in the vehicle's instrument cluster. See *Engine Coolant Temperature Gauge* ⇨ *134*.

In addition, there are ENGINE OVERHEATED STOP ENGINE, ENGINE OVERHEATED IDLE ENGINE, and ENGINE POWER IS REDUCED messages in the Driver Information Center (DIC).

If the decision is made not to lift the hood when this warning appears, get service help right away. See *Roadside Service* ⇨ *366*.

If the decision is made to lift the hood, make sure the vehicle is parked on a level surface.

Check to see if the engine cooling fan(s) 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.

### If Steam is Coming from the Engine Compartment

**⚠ Warning**

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to come out at high speed and you

(Continued)

**Warning (Continued)**

could be burned. Never turn the cap when the cooling system, including the pressure cap, is hot. Wait for the cooling system and pressure cap to cool.

### If No Steam is Coming from the Engine Compartment

The ENGINE OVERHEATED STOP ENGINE or the ENGINE OVERHEATED IDLE ENGINE message, along with a low coolant condition, can indicate a serious problem.

If there is an engine overheat warning, but no steam is 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; see *Trailer Towing* ⇨ *255*

If the ENGINE OVERHEATED STOP ENGINE or the ENGINE OVERHEATED IDLE ENGINE message appears with no sign of steam, try this for a minute or so:

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. When it is safe to do so, pull off the road, shift to P (Park) or N (Neutral), and let the engine idle.

If the engine coolant temperature 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 slowly for about 10 minutes. Keep a safe vehicle distance from the vehicle in front. If the warning does not come back on, continue to drive normally and have the cooling system checked for proper fill and function.

If the warning continues, pull over, stop, and park the vehicle right away.

If there is still no sign of steam and the vehicle is equipped with an engine driven cooling fan, push down the accelerator until the engine speed is about twice as fast as normal idle speed for at least five minutes while the vehicle is parked. If the warning is still there, turn off the engine and get everyone out of the vehicle until it cools down.

If there is no sign of steam, idle the engine for five minutes while parked. If the warning is still displayed, turn off the engine until it cools down.

## Engine Fan

If the vehicle has electric cooling fans, the fans may be heard spinning at low speed during most everyday driving. The fans may turn off if no cooling is required. Under heavy vehicle loading, trailer towing, high outside temperatures, or operation of the air conditioning system, the fans may change to high speed and an increase in fan noise may be heard. This is normal and indicates that the cooling system is functioning properly. The

fans will change to low speed when additional cooling is no longer required.

The electric engine cooling fans may run after the engine has been turned. off. This is normal and no service is required.

## Washer Fluid

### What to Use

When windshield washer fluid needs to be added, be sure to read the manufacturer's instructions before use. Use a fluid that has sufficient protection against freezing in an area where the temperature may fall below freezing.

### Adding Washer Fluid

The vehicle has a low washer fluid message on the DIC that comes on when the washer fluid is low. The message is displayed for 15 seconds at the start of each ignition cycle. When the WASHER FLUID LOW ADD FLUID message displays, washer fluid will need to be added to the windshield washer fluid reservoir.

Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview* ⇨ *267* for reservoir location.

**Caution**

- Do not use washer fluid that contains any type of water repellent coating. This can cause the wiper blades to chatter or skip.
- Do not use engine coolant (antifreeze) in the windshield washer. It can damage the windshield washer system and paint.
- Do not mix water with ready-to-use washer fluid. Water can cause the solution

(Continued)

**Caution (Continued)**

to freeze and damage the washer fluid tank and other parts of the washer system.

- When using concentrated washer fluid, follow the manufacturer instructions for adding water.
- 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.

## 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 can be heard all the time when 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.

**Caution**

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. See *Capacities and Specifications* ⇨ *359*.

Brake pads should be replaced as complete 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 may be required.

### Replacing Brake System Parts

Always replace brake system parts with new, approved replacement parts. If this is not done, the brakes may not work properly. The braking performance expected can change in many other ways if the wrong replacement brake parts are installed or if parts are improperly installed.

## Brake Fluid

The brake master cylinder reservoir is filled with GM approved DOT 3 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview* ⇨ *267* for the location of the reservoir.

### Checking Brake Fluid

With the vehicle in P (Park) on a level surface, the brake fluid level should be between the minimum and maximum marks on the brake fluid reservoir.

There are only two reasons why the brake fluid level in the reservoir may go down:

- Normal brake lining wear. When new linings are installed, the fluid level goes back up.

- A fluid leak in the brake hydraulic system. Have the brake hydraulic system fixed. With a leak, the brakes will not work well.

Always clean the brake fluid reservoir cap and the area around the cap before removing it.

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 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* ⇨ *138*.

Brake fluid absorbs water over time which degrades the effectiveness of the brake fluid. Replace brake fluid at the specified intervals to prevent increased stopping distance. See *Maintenance Schedule* ⇨ *347*.

### What to Add

Use only GM approved DOT 3 brake fluid from a clean, sealed container. See *Recommended Fluids and Lubricants* ⇨ *355*.

**⚠ Warning**

The wrong or contaminated brake fluid could result in damage to the brake system. This could result in the loss of braking leading to a possible injury. Always use the proper GM approved brake fluid.

**Caution**

If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Immediately wash off any painted surface.

## Battery - North America

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

Refer to the replacement number shown on the original battery label when a new battery is needed. See *Engine Compartment Overview* ⇨ *267* for battery location.

**⚠ Warning**

**WARNING:** Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

(Continued)

**Warning (Continued)**

Batteries also contain other chemicals known to the State of California to cause cancer. **WASH HANDS AFTER HANDLING.** For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

See *California Proposition 65 Warning* ⇨ *264* and the back cover.

### 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 - North America* ⇨ *329* 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.

## Four-Wheel Drive

### Transfer Case

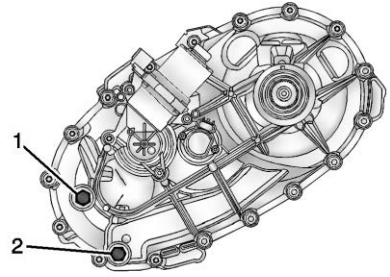
If the vehicle is equipped with Four-Wheel Drive, be sure to perform the lubricant checks described in this section.

#### When to Check Lubricant

Refer to *Maintenance Schedule* ⇨ *347* to determine how often to check the lubricant.

#### How to Check Lubricant

To get an accurate reading, the vehicle should be on a level surface.




1. Fill Plug
2. Drain Plug

If the level is below the bottom of the fill plug (1) hole, located on the transfer case, some lubricant will need to be added. Add enough lubricant to raise the level to the bottom of the fill plug (1) hole. Use care not to overtighten the plug.

#### What to Use

Refer to *Recommended Fluids and Lubricants* ⇨ *355* to determine what kind of lubricant to use.

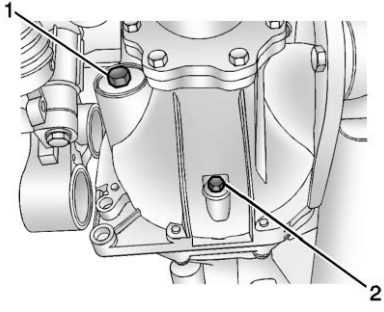
# Front Axle

### When to Check and Change Lubricant

It is not necessary to regularly check front axle fluid unless a leak is suspected, or an unusual noise is heard. A fluid loss could indicate a problem. Have it inspected and repaired.

### How to Check Lubricant

To get an accurate reading, the vehicle should be on a level surface.




1. Fill Plug
2. Drain Plug

- When the differential is cold, add enough lubricant to raise the level from 0 mm (0 in) to 3.2 mm (1/8 in) below the fill plug (1) hole.
- When the differential is at operating temperature (warm), add enough lubricant to raise the level to the bottom of the fill plug (1) hole.

### What to Use

Refer to *Recommended Fluids and Lubricants* ⇨ *355* to determine what kind of lubricant to use.

# Rear Axle

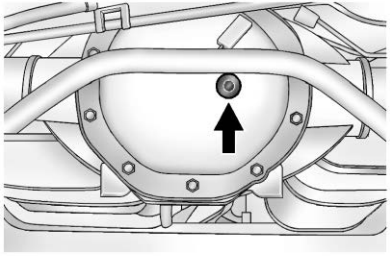
### When to Check Lubricant

It is not necessary to regularly check rear axle fluid unless a leak is suspected or an unusual noise is heard. A fluid loss could indicate a problem. Have it inspected and repaired.

All axle assemblies are filled by volume of fluid during production. They are not filled to reach a certain level. When checking the fluid level on any axle, variations in the readings can be caused by factory fill differences between the minimum and the maximum fluid volume. Also, if a vehicle has just been driven before checking the fluid level, it may appear lower than normal because fluid has traveled out along the axle tubes and has not drained back to the sump area. Therefore, a reading taken five minutes after the vehicle has been driven will appear to have a lower fluid level than a vehicle that has been stationary for an hour or two. The rear axle assembly must be supported on a flat, level surface to get a true reading.

### How to Check Lubricant

To get an accurate reading, the vehicle should be on a level surface.



The proper level is 1.0 mm to 19.0 mm (0.04 in to 0.7 in) below the bottom of the fill hole, located on the rear axle. Add only enough fluid to reach the proper level.

### What to Use

Refer to *Recommended Fluids and Lubricants* ⇨ *355* to determine what kind of lubricant to use.

## 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. Apply both the parking brake and the regular brake.

   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. Apply the parking brake. 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 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

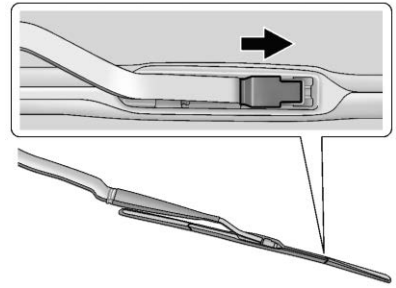
Windshield wiper blades should be inspected for wear or cracking.

For the proper type and size, see *Maintenance Replacement Parts ⇨ 356*.

### Front Wiper Blade Replacement

To replace the wiper blade assembly:

1. Pull the windshield 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.

   Allowing the wiper blade arm to touch the windshield when no wiper blade is installed could damage the windshield. Any damage that occurs would not be

covered by the vehicle warranty. Do not allow the wiper blade arm to touch the windshield.

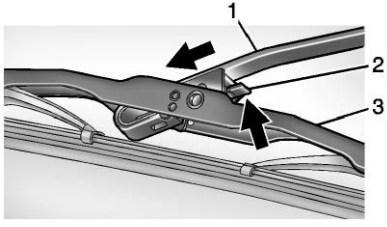
5. Reverse Steps 1–3 for wiper blade replacement.

### Rear Wiper Blade Replacement

To replace the rear wiper blade:

1. With the rear wiper in the off position, open the liftglass to access the rear wiper arm/blade.

   The rear wiper blade will not lock in a vertical position so care should be used when pulling it away from the vehicle.




2. Push the release lever (2) to disengage the hook and push the wiper arm (1) out of the blade assembly (3).
3. Push the new blade assembly securely in the wiper arm hook until the release lever clicks into place.
4. Return the wiper arm and blade assembly to the rest position on the glass.

## Glass Replacement

If the windshield or front side glass must be replaced, see your dealer to determine the correct replacement glass.

## Windshield Replacement

### HUD System

The windshield is part of the HUD system. If the windshield must be replaced, get one that is designed for HUD or the HUD image may look out of focus.

### Driver Assistance Systems

If the windshield needs to be replaced and the vehicle is equipped with a front camera sensor for the Driver Assistance Systems, a GM replacement windshield is recommended. The replacement windshield must be installed according to GM specifications for proper alignment. If it is not, these systems may not work properly, they may display messages, or they may not work at all. See your dealer for proper windshield replacement.

## Gas Strut(s)

This vehicle is equipped with gas strut(s) to provide assistance in lifting and holding open the hood/trunk/liftgate system in full open position.

**⚠ Warning**

If the gas struts that hold open the hood, trunk, and/or liftgate fail, you or others could be seriously injured. Take the vehicle to your dealer for

(Continued)

**Warning (Continued)**

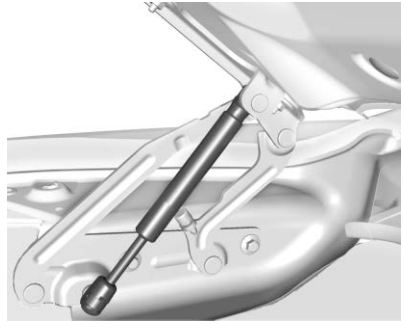
service immediately. Visually inspect the gas struts for signs of wear, cracks, or other damage periodically. Check to make sure the hood/trunk/liftgate is held open with enough force. If struts are failing to hold the hood/trunk/liftgate, do not operate. Have the vehicle serviced.

**Caution**

Do not apply tape or hang any objects from gas struts. Also do not push down or pull on gas struts. This may cause damage to the vehicle.

See *Maintenance Schedule* ⇨ *347*.

Hood



Trunk

Liftgate

# 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.

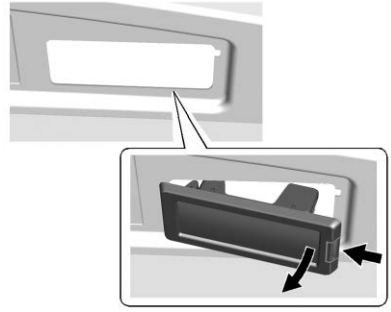
# Bulb Replacement

For the proper type of replacement bulbs, or any bulb changing procedure not listed in this section, contact your dealer.

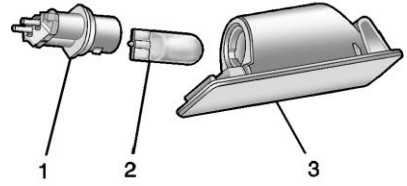
## LED Lighting

This vehicle has several LED lamps. For replacement of any LED lighting assembly, contact your dealer.

## License Plate Lamp



Passenger Side Shown, Driver Side Similar



1. Bulb Socket
2. Bulb
3. Lamp Assembly

To replace one of these bulbs:

1. Push the lamp assembly (3) toward the center of the vehicle.
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.

# Electrical System

## Electrical System Overload

The vehicle has fuses to protect against an electrical system overload. Fuses also 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, there are some spare fuses and a fuse puller in the left instrument panel fuse block. The same amperage fuse can also 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.

**⚠ Danger**

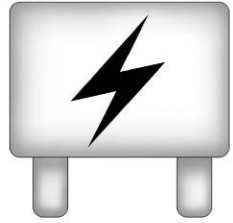
Fuses and circuit breakers are marked with their ampere rating. Do not exceed the specified amperage rating when replacing fuses and circuit breakers. Use of an oversized fuse or circuit breaker can result in a vehicle fire. You and others could be seriously injured or killed.

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.

## Engine Compartment Fuse Block

The engine compartment fuse block is in the engine compartment, on the driver side of the vehicle.

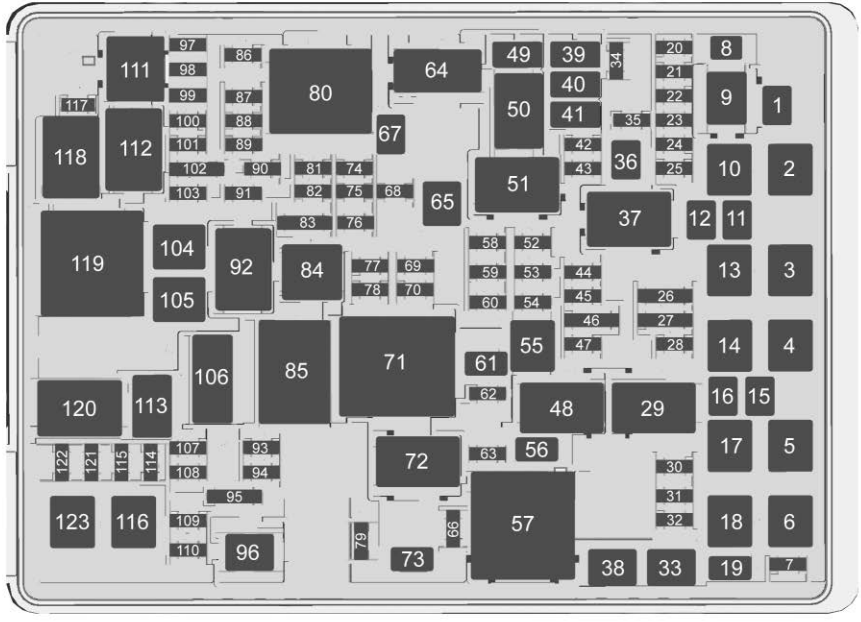


Lift the cover to access the fuse block.

**Caution**

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.

A fuse puller is available in the left instrument panel fuse block.




| Fuses | Usage | Fuses | Usage | Fuses | Usage |
|---|---|---|---|---|---|
| 1 | Electric running boards | 2 | Antilock brake system pump | 3 | Interior BEC LT1 |

| Fuses | Usage |
|---|---|
| 4 | Passenger motorized seat belt |
| 5 | Suspension leveling compressor |
| 6 | 4WD transfer case electronic control |
| 7 | – |
| 8 | – |
| 10 | Electric parking brake/– |
| 11 | – |
| 12 | – |
| 13 | Interior BEC LT2 |
| 14 | Rear BEC 1 |
| 15 | – |
| 16 | – |
| 17 | Driver motorized seat belt |
| 18 | – |
| 19 | – |
| 20 | – |

| Fuses | Usage |
|---|---|
| 21 | Automatic headlamp leveling/Exhaust solenoid |
| 22 | Fuel pump |
| 23 | Integrated chassis control module |
| 24 | Real time dampening |
| 25 | Fuel pump power module |
| 26 | Active Hydraulic Assist/ Battery regulated voltage control |
| 27 | – |
| 28 | Upfitter 2 |
| 30 | Wiper |
| 31 | Trailer interface module |
| 32 | – |
| 33 | – |
| 34 | Reverse lamps |

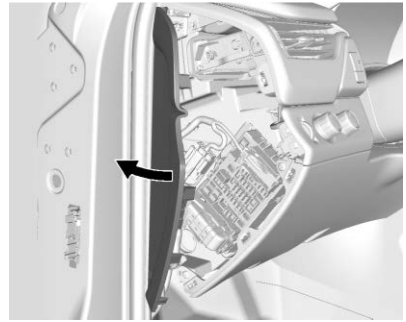
| Fuses | Usage |
|---|---|
| 35 | Antilock brake system valve |
| 36 | Trailer brakes |
| 38 | – |
| 39 | Right trailer stoplamp/Turn signal lamp |
| 40 | Left trailer stoplamp/turn signal lamp |
| 41 | Trailer parking lamps |
| 42 | Right parking lamps |
| 43 | Left parking lamps |
| 44 | Upfitter 3 |
| 45 | Automatic level control/Run/Crank |
| 46 | – |
| 47 | Upfitter 4 |
| 49 | Reverse lamps |
| 50 | – |
| 52 | – |

| Fuses | Usage |
|---|---|
| 53 | – |
| 54 | – |
| 55 | – |
| 56 | – |
| 57 | – |
| 58 | – |
| 59 | Euro trailer |
| 60 | Air conditioning control |
| 61 | – |
| 62 | – |
| 63 | Upfitter 1 |
| 64 | – |
| 65 | – |
| 66 | – |
| 67 | Trailer battery |
| 68 | Secondary fuel pump |
| 69 | RC upfitter 3 and 4 |
| 70 | VBAT upfitter 3 and 4 |
| 71 | – |
| 73 | – |
| 74 | Engine control module/Ignition |
| 75 | Miscellaneous/ Ignition/– |
| 76 | Transmission/ Ignition |
| 77 | RC upfitter 1 and 2 |
| 78 | VBAT upfitter 1 and 2 |
| 79 | – |
| 80 | – |
| 81 | – |
| 82 | – |
| 83 | Euro trailer/RC |
| 85 | – |
| 86 | – |
| 87 | MAF/IAT/Humidity/ TIAP sensor |
| 88 | Injector A – odd |
| 89 | Injector B – even |
| 90 | O2 sensor B |
| 91 | Throttle control |
| 93 | Horn |
| 94 | Fog lamps |
| 95 | High-beam headlamps |
| 96 | – |
| 97 | – |
| 98 | – |
| 99 | – |
| 100 | O2 sensor A |
| 101 | Engine control module |
| 102 | Engine control module/ Transmission control module |
| 103 | Auxiliary interior heater |
| 104 | Starter |
| 105 | – |

| Fuses | Usage |
|---|---|
| 106 | – |
| 107 | Aeroshutter |
| 108 | – |
| 109 | Police upfitter |
| 110 | – |
| 111 | – |
| 113 | – |
| 114 | Front windshield washer |
| 115 | Rear window washer |
| 116 | Left cooling fan |
| 117 | Fuel pump prime |
| 118 | – |
| 119 | – |
| 120 | – |
| 121 | Right HID headlamp |
| 122 | Left HID headlamp |
| 123 | Right cooling fan |

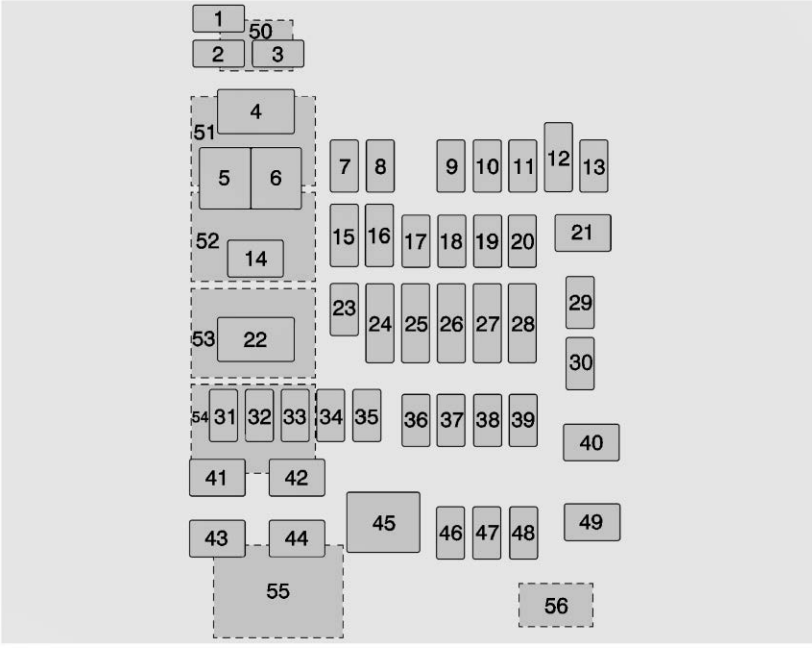
| Relays | Usage |
|---|---|
| 9 | Fuel pump |
| 29 | Upfitter 2 |
| 37 | Upfitter 3 |
| 48 | Upfitter 4 |
| 51 | Parking lamp |
| 64 | Secondary fuel pump |
| 72 | Upfitter 1 |
| 84 | Run/Crank |
| 92 | Engine control module |
| 112 | Starter |
| 120 | Fuel pump prime |

## Instrument Panel Fuse Block (Left)



The left instrument panel fuse block access door is on the driver side edge of the instrument panel.

Pull off the cover to access the fuse block.




The vehicle may not be equipped with all of the fuses, relays, and features shown.

| Fuses | Usage |
|---|---|
| 1 | – |
| 2 | – |
| 3 | – |
| 4 | Accessory power outlet 1 |
| 5 | Accessory power outlet from retained accessory power |
| 6 | Accessory power outlet from battery power |
| 7 | Universal garage door opener/Interior rearview mirror |
| 8 | SEO/Retained accessory power |
| 9 | – |
| 10 | Body control module 3 |
| 11 | Body control module 5 |
| 12 | Steering wheel control backlighting |
| 13 | – |
| 14 | – |
| 15 | – |

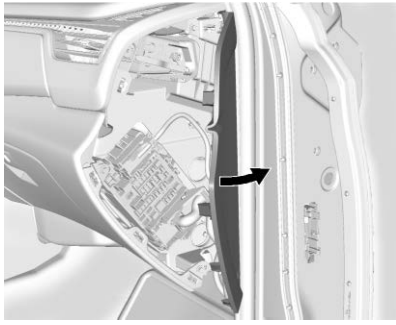
| Fuses | Usage |
|---|---|
| 16 | Discrete logic ignition sensor |
| 17 | Video processing module |
| 18 | Mirror window module |
| 19 | Body control module 1 |
| 20 | Front bolster |
| 21 | – |
| 22 | – |
| 23 | – |
| 24 | HVAC ignition/AUX HVAC ignition |
| 25 | Instrument cluster/ Ignition sensing diagnostic module ignition |
| 26 | Tilt column/Tilt column lock 1/SEO 1/ SEO 2 |
| 27 | Data link connector/ Driver seat module |

| Fuses | Usage |
|---|---|
| 28 | Passive locking, Passive theft-deterrent/HVAC battery |
| 29 | Content theft deterrent |
| 30 | – |
| 31 | – |
| 32 | – |
| 33 | SEO/Left heated seat |
| 34 | Park enable/Electric adjustable pedal |
| 35 | – |
| 36 | Miscellaneous run crank loads |
| 37 | Heated steering wheel |
| 38 | Steering column lock 2 |
| 39 | Instrument cluster battery |
| 40 | – |
| 41 | – |
| 42 | Euro trailer |
| 43 | Left door |

| Fuses | Usage |
|---|---|
| 44 | Driver power seat |
| 45 | – |
| 46 | Right heated, cooled, or ventilated seat |
| 47 | Left heated, cooled, or ventilated seat |
| 48 | – |
| 49 | – |

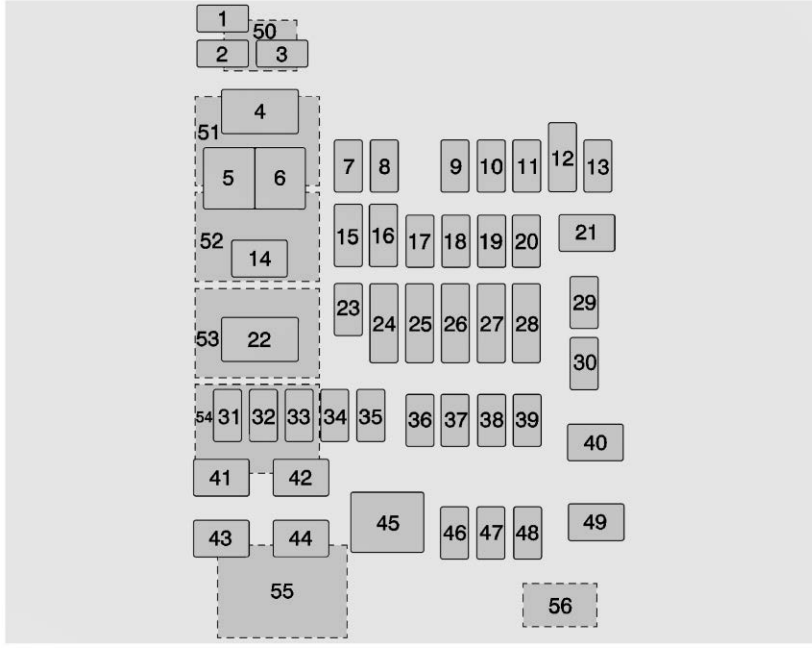
| Relays | Usage |
|---|---|
| 50 | Accessory power outlet 2 |
| 51 | – |
| 52 | Retained accessory power |
| 53 | Miscellaneous run crank |
| 54 | – |
| 55 | – |
| 56 | – |

## Instrument Panel Fuse Block (Right)



The right instrument panel fuse block access door is on the passenger side edge of the instrument panel.

Pull off the cover to access the fuse block.




The vehicle may not be equipped with all of the fuses, relays, and features shown.

| Fuses | Usage |
|---|---|
| 1 | – |
| 2 | – |

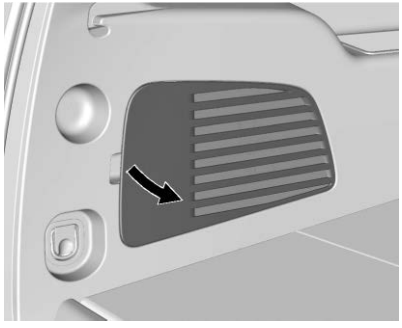
| Fuses | Usage |
|---|---|
| 3 | – |
| 4 | Accessory power outlet 4 |
| 5 | – |
| 6 | – |
| 7 | – |
| 8 | Glove box |
| 9 | – |
| 10 | – |
| 11 | – |
| 12 | Steering wheel controls |
| 13 | Body control module 8 |
| 14 | – |
| 15 | – |
| 16 | – |
| 17 | – |
| 18 | – |
| 19 | Body control module 4 |
| 20 | Rear seat entertainment |

| Fuses | Usage |
|---|---|
| 21 | Sunroof |
| 22 | – |
| 23 | – |
| 24 | – |
| 25 | – |
| 26 | Infotainment/Airbag |
| 27 | –/RF window switch/ Rain sensor |
| 28 | Obstacle detection/USB |
| 29 | Radio |
| 30 | – |
| 31 | – |
| 32 | – |
| 33 | – |
| 34 | – |
| 35 | – |
| 36 | Special equipment option B2 |
| 37 | Special equipment option |
| 38 | Body control module 2 |

| Fuses | Usage |
|---|---|
| 39 | DC to AC inverter |
| 40 | – |
| 41 | – |
| 42 | – |
| 43 | – |
| 44 | Right door window motor |
| 45 | Front blower |
| 46 | Body control module 6 |
| 47 | Body control module 7 |
| 48 | Amplifier |
| 49 | Right front seat |
| 50 | Accessory power outlet 3 |
| 51 | – |
| 53 | – |
| 54 | – |
| 55 | – |
| 56 | – |

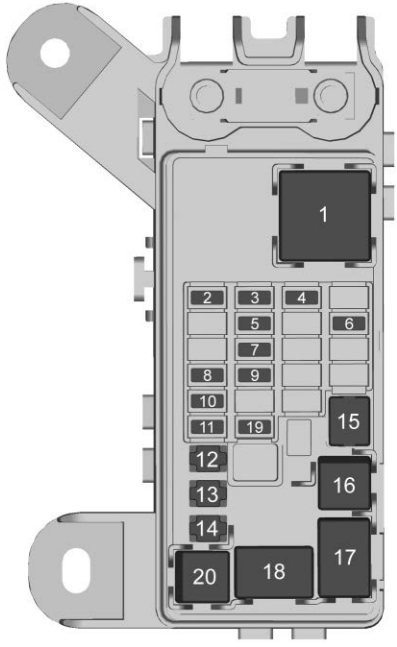
| Relays | Usage |
|---|---|
| 52 | Retained accessory power |

## Rear Compartment Fuse Block



The rear compartment fuse block is behind the access panel on the left side of the compartment.

Pull the panel out by grabbing the finger access slot at the rear edge.




The vehicle may not be equipped with all of the fuses, relays, and features shown.

| Fuses | Usage |
|---|---|
| 2 | – |
| 3 | Right heated second row seat |
| 4 | Heated mirrors |
| 5 | Liftgate |
| 6 | Glass breakage |
| 7 | Liftglass |
| 8 | Liftgate module logic |
| 9 | Rear wiper |
| 10 | Rear heating, ventilation, and air conditioning blower |
| 11 | Second row seat |
| 12 | Liftgate module |
| 13 | Third row seat |
| 14 | Rear accessory power outlet |
| 15 | Rear window defogger |
| 19 | Rear fog lamp (if equipped) |

| Relays | Usage |
|---|---|
| 1 | Rear window defogger |
| 16 | Liftgate |
| 17 | Liftglass |
| 18 | Rear fog lamp |
| 20 | Heated mirror |

# 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. There could be a blowout and a serious crash. See *Vehicle Load Limits* ➪ *193*.

(Continued)

**Warning (Continued)**

- 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.
- Worn or old tires can cause a crash. If the tread is badly worn, replace them.

(Continued)

**Warning (Continued)**

- 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* ⇨ *307* 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* ⇨ *300*.

## 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 ice or snow covered roads is expected. See your dealer for details regarding winter tire availability and proper tire selection. Also, see *Buying New Tires* ⇨ *314*.

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.

## Low-Profile Tires

The vehicle has low profile tires that are classified as touring tires and are designed for on road use. The low-profile, wide tread design is not recommended for off-road driving. See *Off-Road Driving* ⇨ *186*, for additional information.

**Caution**

Low-profile tires are more susceptible to damage from road hazards or curb impact than standard profile tires. Tire and/or wheel assembly damage can occur when coming into contact with road hazards like potholes, or sharp edged objects, or when sliding into a curb. The warranty does not cover this type of damage. Keep tires set to the correct inflation pressure and when possible, avoid contact with curbs, potholes, and other road hazards.

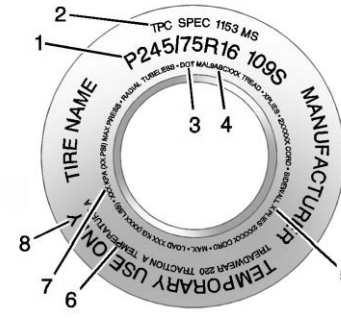
## All-Terrain Tires

This vehicle may have all-terrain tires. These tires provide good performance on most road surfaces, weather conditions, and for off-road driving. See *Off-Road Driving* ⇨ *186*.

The tread pattern on these tires may wear more quickly than other tires. Consider rotating the tires more frequently than at 12 000 km (7,500 mi) intervals if irregular wear is noted when the tires are inspected. See *Tire Inspection* ⇨ *312*.

## Tire Sidewall Labeling

Useful information about a tire is molded into the sidewall. The example shows a typical passenger vehicle tire sidewall.




Passenger (P-Metric)/Spare Tire

**(1) Tire Size :** The tire size code 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 for more detail.

**(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 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* ⇨ *316*.

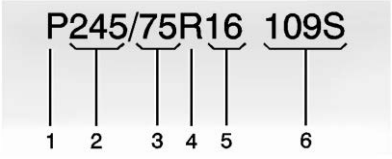
**(7) Maximum Cold Inflation Load Limit :** Maximum load that can be carried and the maximum pressure needed to support that load. For information on recommended tire pressure see *Tire Pressure* ⇨ *305* and *Vehicle Load Limits* ⇨ *193*.

**(8) Temporary Use Only :** Only use a temporary spare tire until the road tire is repaired and replaced. This spare tire should not be driven on over 112 km/h (70 mph), or 88 km/h (55 mph) when pulling a trailer, with the proper inflation pressure. See *Full-Size Spare Tire* ⇨ *328*.

## Tire Designations

### Tire Size

The example shows a typical passenger vehicle tire size.




Passenger (P-Metric) Tire

**(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 75, as shown in item C of the tire illustration, it would mean that the tire's sidewall is 75 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 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* ⇨ *305*.

**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* ⇨ *193*.

**GAWR FRT :** Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits* ⇨ *193*.

**GAWR RR :** Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits* ⇨ *193*.

**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 lb). See *Vehicle Load Limits* ⇨ *193*.

**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* ⇨ *305* and *Vehicle Load Limits* ⇨ *193*.

**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* ⇨ *313*.

**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* ⇨ *316*.

**Vehicle Capacity Weight :** The number of designated seating positions multiplied by 68 kg (150 lb) plus the rated cargo load. See *Vehicle Load Limits* ⇨ *193*.

**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* ⇨ *193*.

## Tire Pressure

Tires need the correct amount of air pressure to operate effectively.

**Caution**

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.

(Continued)

**Caution (Continued)**

- 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.

For additional information regarding how much weight the vehicle can carry, and an example of the Tire and Loading Information label, see *Vehicle Load Limits* ⇨ *193*. 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 the tires once a month or more.

Do not forget the spare tire, if the vehicle has one. See *Full-Size Spare Tire* ⇨ *328* for additional information.

### 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.

Re-check the tire pressure with the tire gauge.

Put the valve caps back on the valve stems to keep out dirt and moisture and prevent leaks. Use only valve caps designed for the vehicle by GM. TPMS sensors could be damaged and would not be covered by the vehicle warranty.

## Tire Pressure for High-Speed Operation

**⚠ Warning**

Driving at high speeds, 160 km/h (100 mph) or higher, puts additional strain on tires. Sustained high-speed driving causes excessive heat buildup and can cause sudden tire failure. This could cause 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 allow the vehicle to be driven at high speeds, make sure the tires are rated for high-speed operation, are in excellent condition, and are set to the correct cold tire inflation pressure for the vehicle load.

When driving the vehicle at speeds of 160 km/h (100 mph) or higher, set the cold inflation pressure to 20 kPa (3 psi) above the recommended tire pressure shown on the Tire and Loading Information label. Return the tires to the recommended cold tire inflation pressure when high-speed driving has ended.
See *Vehicle Load Limits* ⇨ *193* and *Tire Pressure* ⇨ *305*.

## 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* ⇨ *308*.

See *Radio Frequency Statement* ⇨ *372*.

## 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 transmit 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* ⇨ *193*.

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)* ⇨ *145*.

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* ⇨ *193* for an example of the Tire and Loading Information label and its location. Also see *Tire Pressure* ⇨ *305*.

The TPMS can warn about a low tire pressure condition but it does not replace normal tire maintenance. See *Tire Inspection* ⇨ *312*, *Tire Rotation* ⇨ *312*, and *Tires* ⇨ *299*.

**Caution**

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.

## 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 pressure 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* ⇨ *314*.
- 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 pressure condition. See your dealer for service if the TPMS malfunction light and DIC message come on and stay on.

## Tire Fill Alert (If Equipped)

This feature provides visual and audible alerts outside the vehicle to help when inflating an underinflated tire to the recommended cold tire pressure.

When the low tire pressure warning light comes on:

1. Park the vehicle in a safe, level place.
2. Set the parking brake firmly.
3. Place the vehicle in P (Park).
4. Add air to the tire that is underinflated. The turn signal lamp will flash.

   When the recommended pressure is reached, the horn sounds once and the turn signal lamp will stop flashing and briefly turn solid.

Repeat these steps for all underinflated tires that have illuminated the low tire pressure warning light.

If the tire is overinflated by more than 35 kPa (5 psi), the horn will sound multiple times and the turn signal lamp will continue to flash for eight seconds after filling stops. To release and correct the pressure, while the turn signal lamp is still flashing, briefly press the center of the valve stem. When the recommended pressure is reached, the horn sounds once.

If the turn signal lamp does not flash within 15 seconds after starting to inflate the tire, the tire fill alert has not been activated or is not working.

If the hazard warning flashers are on, the tire fill alert visual feedback will not work properly.

The TPMS will not activate the tire fill alert properly under the following conditions:

- There is interference from an external device or transmitter.
- The air pressure from the inflation device is not sufficient to inflate the tire.
- There is a malfunction in the TPMS.
- There is a malfunction in the horn or turn signal lamps.
- The identification code of the TPMS sensor is not registered to the system.
- The battery of the TPMS sensor is low.

If the tire fill alert does not operate due to TPMS interference, move the vehicle about 1 m (3 ft) back or forward and try again. If the tire fill alert feature is not working, use a tire pressure gauge.

## 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 tire. See your dealer for service or to purchase a relearn tool. A TPMS relearn tool can also be purchased. See Tire Pressure Monitor Sensor Activation Tool at www.gmtoolsandequipment.com or call 1-800-GM TOOLS (1-800-468-6657).

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 in Service Mode. See *Ignition Positions* ⇨ *199*.
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)* ⇨ *145*.
4. Use the five-way DIC control on the right side of the steering wheel to scroll to the Tire Pressure screen under the DIC info page. See *Driver Information Center (DIC)* ⇨ *145*.
5. Press and hold SEL 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. Turn the vehicle 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:

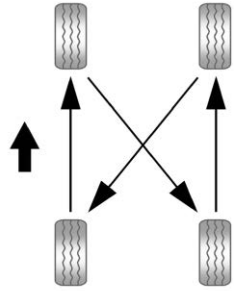
- The indicators at three or more places around the tire can be seen.
- There is cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.
- The tire has a puncture, cut, or other damage 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* ⇨ *347*.

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* ⇨ *313* and *Wheel Replacement* ⇨ *317*.



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* ⇨ *305* and *Vehicle Load Limits* ⇨ *193*.

Reset the Tire Pressure Monitor System. See *Tire Pressure Monitor Operation* ⇨ *308*.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications* ⇨ *359*.

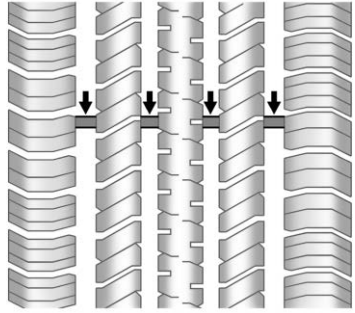
**⚠ Warning**

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 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. Some commercial truck tires may not have treadwear indicators.

See *Tire Inspection* ⇨ *312* and *Tire Rotation* ⇨ *312* for additional information.

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 manufacture 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* ⇨ *301* for additional information.

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* ⇨ *312* 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.

**⚠ 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.

(Continued)

**Warning (Continued)**

This vehicle may have a different size spare than the road tires originally installed on the vehicle. When new, the vehicle included a spare tire and wheel assembly with a similar overall diameter as the road tires and wheels, so it is all right to drive on it. The spare tire was developed for use on this vehicle and will not affect vehicle handling.

**⚠ 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.

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 tires' maximum speed capability when using winter tires with a lower speed rating.

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* ⇨ *307*.

The Tire and Loading Information label indicates the original equipment tires on the vehicle. See *Vehicle Load Limits* ⇨ *193* for the label location and more information about the Tire and Loading Information label.

## 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

(Continued)

**Warning (Continued)**

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* ⇨ *314* and *Accessories and Modifications* ⇨ *265*.

## Uniform Tire Quality Grading

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.

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**

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

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

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 are not necessary on a regular basis. Consider an alignment check if there is unusual tire wear or the vehicle is significantly pulling to one side or the other. Some slight pull to the left or right, depending on the crown of the road and/or other road surface variations such as troughs or ruts, is normal. If the vehicle is vibrating when driving on a smooth road, the tires and wheels may 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.

**Caution**

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.

### 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 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

(Continued)

**Warning (Continued)**

recommends it for the vehicle's tire size combination and road conditions. Follow that manufacturer's instructions. To avoid vehicle damage, drive slowly 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 rear tires.

## If a Tire Goes Flat

It is unusual for a tire to blowout while driving, especially if the tires are maintained properly. If air goes out of a tire, it is much more likely to leak out slowly. But if there ever is 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 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.

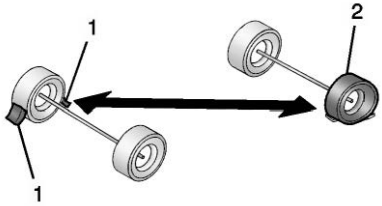
If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place, well off the road, if possible. Turn on the hazard warning flashers. See *Hazard Warning Flashers* ⇨ *168*.

**⚠ 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 the shift lever in P (Park).
3. For vehicles with four-wheel drive with an N (Neutral) transfer case position, be sure the transfer case is in a drive gear — not in N (Neutral).
4. Turn off the engine and do not restart while the vehicle is raised.
5. Do not allow passengers to remain in the vehicle.
6. Place wheel blocks, if equipped, on both sides of the tire at the opposite corner of the tire being changed.

When the vehicle has a flat tire (2), use the following example as a guide to assist in the placement of the wheel blocks (1), if equipped.




1. Wheel Block (If Equipped)
2. Flat Tire

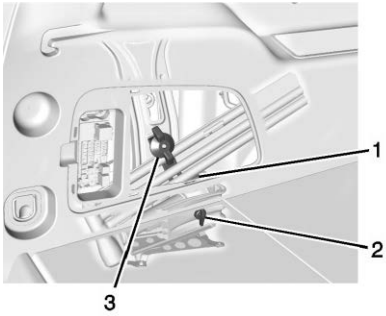
The following information explains how to use the jack and change a tire.

## Tire Changing

Before changing a flat tire, see "Hands-Free Operation" under *Liftgate* ⇨ *41*.

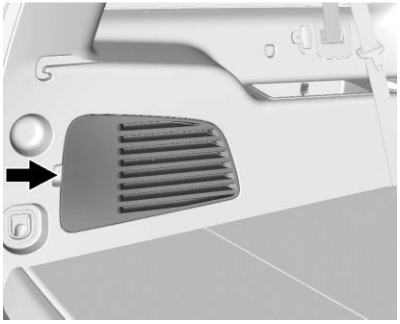
### Removing the Spare Tire and Tools

The equipment needed to change a flat tire is stored in the rear of the vehicle, on the driver side, behind a door in the trim panel.




1. Jack Knob
2. Wing Nut Retaining the Wheel Blocks
3. Wing Nut Retaining the Tool Bag

   If equipped, the tow eye bolt will be in a bag secured to the tool bag.



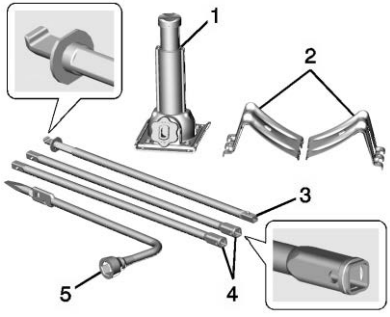
1. Pull to open the trim panel door.

   The third row driver side seat may need to be folded to access the trim panel door.
2. Lift the acoustic pad to access the jack and tools.
3. Turn the wing nut retaining the tool bag (3) counterclockwise to remove it.

   Pull the tool bag toward the front of the vehicle and lift the rear portion of the bag upward to remove it.

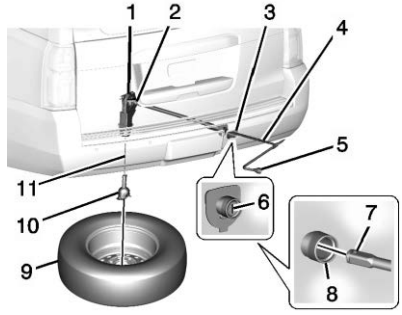
4. Turn the jack knob (1) counterclockwise to release the jack and wheel blocks from the bracket.
5. Turn the wing nut retaining the wheel blocks (2) counterclockwise to remove the wheel blocks and the wheel block retainer.

Use the following tools:




1. Jack
2. Wheel Blocks
3. Jack Handle
4. Jack Handle Extensions
5. Wheel Wrench

To access the spare tire, refer to the following graphics and instructions:

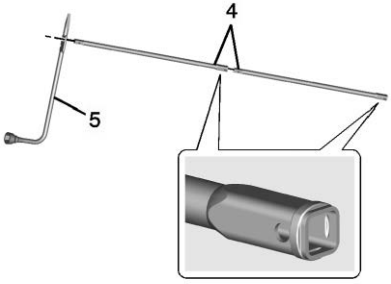



1. Hoist Assembly
2. Hoist Shaft
3. Hoist Shaft Access Cover/Hole
4. Jack Handle Extensions
5. Wheel Wrench
6. Spare Tire Lock
7. Hoist End of Extension Tool
8. Hoist Shaft Access Hole
9. Spare Tire (Valve Stem Pointed Down)
10. Tire/Wheel Retainer
11. Hoist Cable

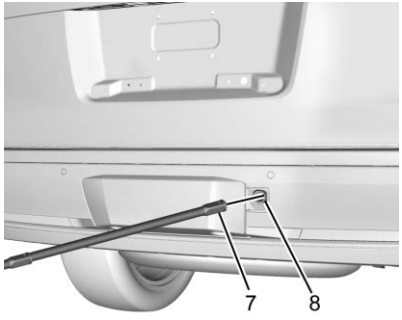
1. Open the hoist shaft access door (3) on the bumper to access the spare tire lock (6).

If equipped with a hitch cover, turn the hitch cover retainers counterclockwise and pull the cover downward to remove it before removing the hoist shaft access door.

2. To remove the spare tire lock (6), insert the key located inside the remote, turn it clockwise, and then pull it straight out.



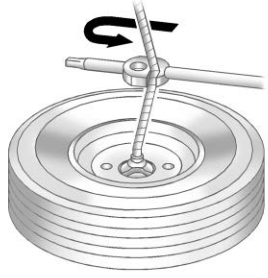

3. Assemble the two jack handle extensions (4) and wheel wrench (5), as shown.



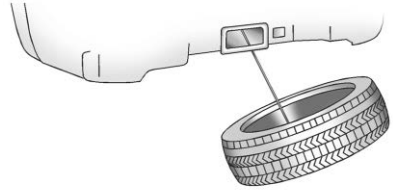

4. Insert the open end of the extension (7) through the hole in the rear bumper (8) (hoist shaft access hole).

   Be sure the hoist end of the extension (7) connects to the hoist shaft. The ribbed square end of the extension is used to lower the spare tire.

5. Turn the wheel wrench counterclockwise to lower the spare tire to the ground. Continue to turn the wheel wrench until the spare tire can be pulled out from under the vehicle.



6. Use the wheel wrench hook to pull the hoist cable closer to assist in reaching the spare tire.



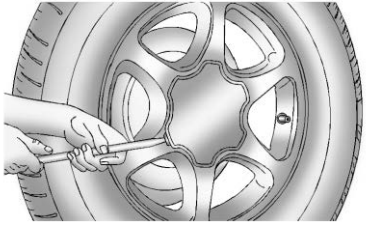
7. Tilt the tire toward the vehicle with some slack in the cable to access the tire/wheel retainer. Tilt the retainer and pull it and the cable and spring through the center of the wheel.

   Once the retainer is separated from the guide pin, tilt the retainer and pull it through the center of the wheel along with the cable and latch.

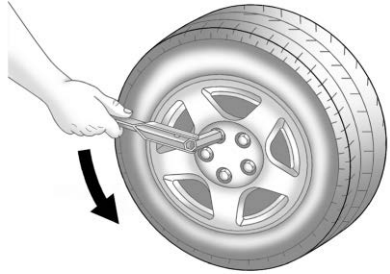
8. Put the spare tire near the flat tire.

## Removing the Flat Tire and Installing the Spare Tire

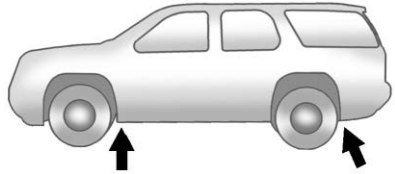
1. Do a safety check before proceeding. See *If a Tire Goes Flat* ⇨ *318* for more information.



2. If the vehicle has a center cap that covers the wheel fasteners, place the chisel end of the wheel wrench in the slot on the wheel and gently pry the cap out.

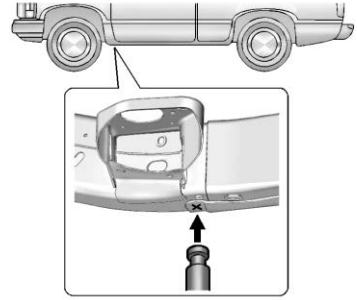


3. Use the wheel wrench to loosen all the wheel nuts. Turn the wheel wrench counterclockwise to loosen the wheel nuts. Do not remove the wheel nuts yet.



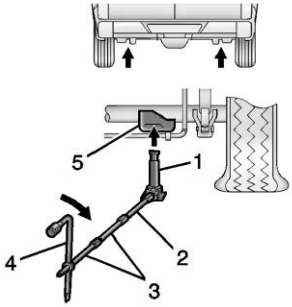
Jacking Locations (Overall View)

4. Position the jack under the vehicle, as shown.



Left Front Shown, Right Front Similar

**Front Tire Flat:** If the flat tire is on a front tire of the vehicle, use the jack handle and only one jack handle extension. Attach the wheel wrench to the jack handle extension. Attach the jack handle to the jack. Position the jack on the frame behind the flat tire where the frame sections overlap. Turn the wheel wrench clockwise to raise the vehicle. Raise the vehicle far enough off the ground so there is enough room for the spare tire to clear the ground.




Rear Position

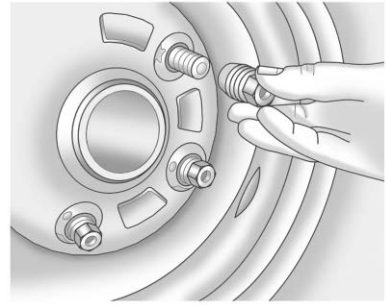
**Rear Tire Flat:** If the flat tire is on a rear tire of the vehicle, use the jack handle (2) and both jack handle extensions (3). Attach the wheel wrench (4) to the jack handle extensions (3). Attach the jack handle (2) to the jack (1). Use the jacking pad (5) provided on the rear axle. Turn the wheel wrench (4) clockwise to raise the vehicle. Raise the vehicle far enough off the ground so there is enough room for the spare tire to clear the ground.

**⚠ Warning**

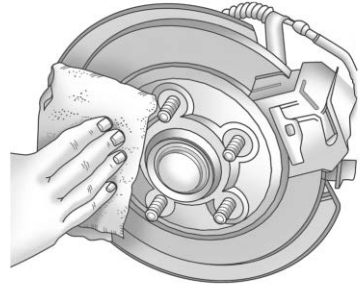
Getting under a vehicle when it is lifted on a jack is dangerous. If the vehicle slips off the jack, you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.

**⚠ 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.



5. Remove all of the wheel nuts.
6. Take off the flat tire.



7. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.

**⚠ Warning**

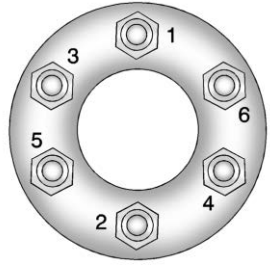
Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

8. Put the wheel nuts back on with the rounded end of the nuts toward the wheel after mounting the spare tire.

**⚠ 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.

9. Tighten each wheel nut by hand. Then use the wheel wrench to tighten the nuts until the wheel is held against the hub.
10. Turn the wheel wrench counterclockwise to lower the vehicle. Lower the jack completely.




11. Tighten the nuts firmly in a crisscross sequence as shown by turning the wheel wrench clockwise.

**⚠ 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 aftermarket manufacturer when using accessory locking wheel nuts. See *Capacities and Specifications* ⇨ *359* for original equipment wheel nut torque specifications.

**Caution**

Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive

(Continued)

**Caution (Continued)**

brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See *Capacities and Specifications* ⇨ *359* for the wheel nut torque specification.

When reinstalling the regular wheel and tire, also reinstall the center cap, if equipped. Line up the tab on the center cap with the slot in the wheel. The cap only goes in one way. Place the cap on the wheel and press until it snaps into place.

## 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

(Continued)

**Warning (Continued)**

collision, loose equipment could strike someone. Store all these in the proper place.

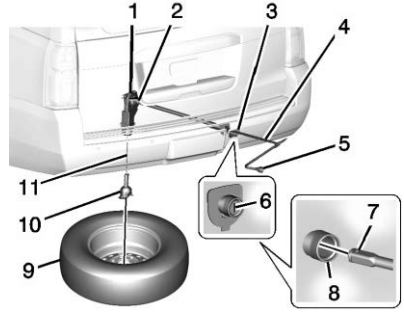
**Caution**

Storing an aluminum wheel with a flat tire under your vehicle for an extended period of time or with the valve stem pointing up can damage the wheel. Always stow the wheel with the valve stem pointing down and have the wheel/tire repaired as soon as possible.

**Caution**

The tire hoist can be damaged if there is no tension on the cable when using it. To have the necessary tension, the spare or road tire and wheel assembly must be installed on the tire hoist to use it.

Store the tire under the rear of the vehicle in the spare tire carrier. Refer to the following graphics and instructions:

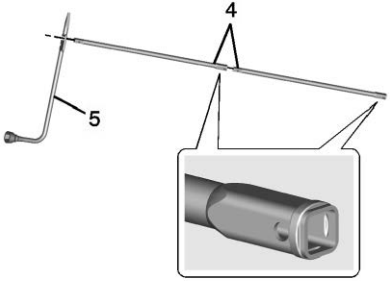



1. Hoist Assembly
2. Hoist Shaft
3. Hoist Shaft Access Cover/Hole
4. Jack Handle Extensions
5. Wheel Wrench
6. Spare Tire Lock
7. Hoist End of Extension Tool
8. Hoist Shaft Access Hole
9. Spare Tire (Valve Stem Pointed Down)

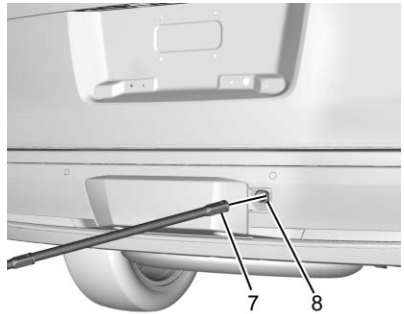
10. Tire/Wheel Retainer
11. Hoist Cable

1. Put the tire (9) on the ground at the rear of the vehicle with the valve stem pointed down, and to the rear.
2. Tilt the tire toward the vehicle. Separate the tire/wheel retainer from the guide pin. Pull the pin through the center of the wheel. Tilt the retainer down through the center wheel opening.

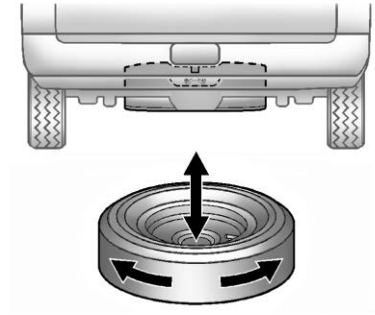
   Make sure the retainer is fully seated across the underside of the wheel.




3. Assemble the two jack handle extensions (4) and wheel wrench (5).




4. Insert the open end of the extension (7) through the hole in the rear bumper (8) (hoist shaft access hole).
5. Raise the tire part way upward. Make sure the retainer is seated in the wheel opening.
6. Raise the tire fully against the underside of the vehicle by turning the wheel wrench clockwise until you hear two clicks or feel it skip twice. The cable cannot be overtightened.



7. Make sure the tire is stored securely. Push, pull, and then try to turn the tire. If the tire moves, use the wheel wrench to tighten the cable.
8. Reinstall the spare tire lock.
9. Reinstall the hoist shaft access cover.

   If equipped, reinstall the hitch cover and turn the retainers clockwise.

To store the tools:

1. Return the tools (wheel wrench, jack handle, and jack handle extensions) to the tool bag.

2. Assemble the wheel blocks and jack together with the wing nut.
3. Position the jack and wheel blocks in the driver side trim panel over the wheelhouse.
4. Turn the jack knob clockwise until the jack is secured tight in the mounting bracket. Be sure to position the holes in the base of the jack onto the pin in the mounting bracket.
5. Use the retaining bracket to fasten the tool bag on the stud and turn the wing nut clockwise to secure.
6. Close the trim panel door.

## 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* ⇨ *305* and *Vehicle Load Limits* ⇨ *193*. For instructions on how to remove, install, or store a spare tire, see *Tire Changing* ⇨ *320*.

If equipped with a temporary use full-size spare tire, it is indicated on the tire sidewall. See *Tire Sidewall Labeling* ⇨ *301*. This spare tire should not be driven on over 112 km/h (70 mph), or 88 km/h (55 mph) when pulling a trailer, at the proper inflation pressure. Repair and replace the road tire as soon as it is convenient, and stow the spare tire for future use.

**Caution**

If the vehicle has four-wheel drive and a different size spare tire is installed, do not drive in four-wheel drive until the flat tire is repaired and/or replaced. The vehicle could be damaged and the repairs would not be covered by the warranty. Never use four-wheel drive when a different size spare tire is installed on the vehicle.

The vehicle may have a different size spare tire than the road tires originally installed on the vehicle. This spare tire was developed for use on this vehicle, so it is all right to drive on it. If the vehicle has four-wheel drive and a different size spare tire is installed, drive only in two-wheel drive.

After installing the spare tire on the vehicle, stop as soon as possible and check that the spare tire is correctly inflated.

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 your spare tire and its wheel together. If the vehicle has a spare tire that does not match the original road tires and wheels in size and type, do not include the spare in the tire rotation.

# Jump Starting

## Jump Starting - North America

For more information about the vehicle battery, see *Battery - North America* ⇨ *280*.

If the vehicle's battery has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

**⚠ Warning**

**WARNING:** Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. **WASH HANDS AFTER HANDLING.** For

(Continued)

**Warning (Continued)**

more information go to www.P65Warnings.ca.gov/passenger-vehicle.

See *California Proposition 65 Warning* ⇨ *264* and the back cover.

**⚠ 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.

**Caution**

Ignoring these steps could result in costly damage to the vehicle that would not be covered by the vehicle warranty. Trying to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle.

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

**Caution**

If the other vehicle does not have a 12-volt system with a negative ground, both vehicles can be damaged. Only use a vehicle that has a 12-volt system with a negative ground for jump starting.

2. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause an unwanted

ground connection. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems.

To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put the automatic transmission in P (Park) or a manual transmission in Neutral before setting the parking brake. For vehicles with four-wheel-drive with a N (Neutral) transfer case position, be sure the transfer case is in a drive gear — not N (Neutral).

**Caution**

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.

3. Turn the ignition off on both vehicles. Unplug unnecessary accessories plugged into the accessory power outlets. Turn off the radio and all the lamps that are not needed. This will avoid sparks and help save both batteries. And it could save the radio!

4. Open the hood on the other vehicle and locate the positive (+) and negative (–) terminal locations on that vehicle.

   The positive (+) terminal is under a red plastic cover at the positive battery post. To uncover the positive (+) terminal, open the red plastic cover.

   For more information on the location of the remote positive (+) and remote negative (–) terminals, see *Engine Compartment Overview* ⇨ *267*.

**⚠ 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.

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.

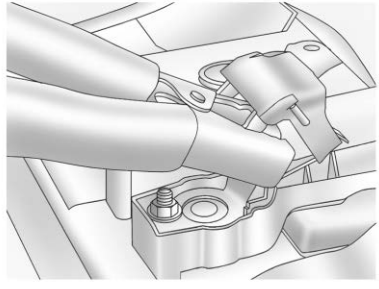
**⚠ Warning**

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

5. Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged too.

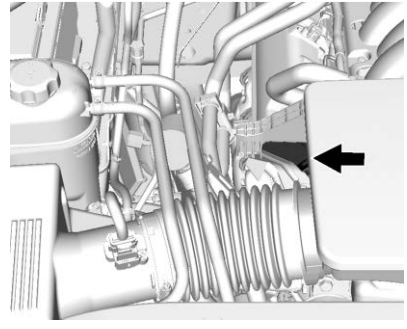
   Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (–) will go to a heavy, unpainted metal engine part or to a remote negative (–) terminal if the vehicle has one.

   Do not connect positive (+) to negative (–) or you will get a short that would damage the battery and maybe other parts too. And do not connect the negative (–) cable to the negative (–) terminal on the dead battery because this can cause sparks.



6. Connect the red positive (+) cable to the positive (+) terminal of the vehicle with the dead battery.
7. Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.
8. Connect the black negative (–) cable to the negative (–) terminal of the good battery. Use a remote negative (–) terminal if the vehicle has one.

   Do not let the other end touch anything until the next step.



9. Connect the other end of the negative (–) cable to the metal bracket that is bolted to the engine and supports the resonator, on the vehicle with the dead battery.
10. Start the vehicle with the good battery and run the engine for a while.
11. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

**Caution**

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.

After starting the disabled vehicle and removing the jumper cables, allow it to idle for several minutes.

## Towing the Vehicle

**Caution**

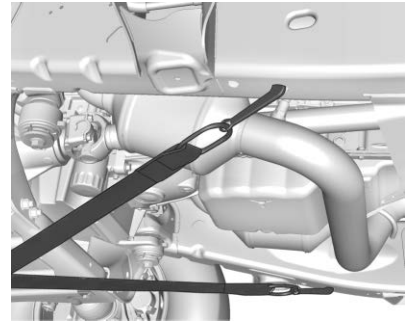
Incorrectly towing a disabled vehicle may cause damage. The damage would not be covered by the vehicle warranty.

Do not lash or hook to suspension components. Use the proper straps around the tires to secure the vehicle.

Use only a flatbed tow truck for towing a disabled vehicle. Never use a sling type lift or damage will occur. Use ramps to help reduce approach angles if necessary. A towed vehicle should have its drive wheels off the ground.

Consult a professional towing service if the disabled vehicle must be towed.

### Front Attachment Points



The vehicle is equipped with specific attachment points to be used to pull the vehicle onto a flatbed car carrier from a flat road surface. Do not use these attachment points to pull the vehicle from snow, mud or sand.

## 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 dinghy 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 on a dolly.

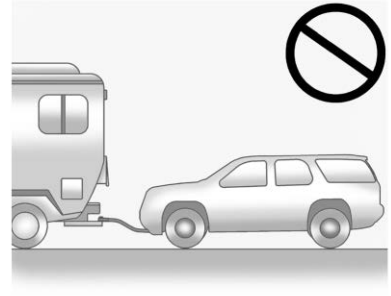
Follow the tow vehicle manufacturer's instructions. See your dealer or trailering professional for additional advice and equipment recommendations.

**Caution**

Use of a shield mounted in front of the vehicle grille could restrict airflow and cause damage to the transmission. The repairs would not be covered by the vehicle warranty. If using a shield, only use one that attaches to the towing vehicle.

## Dinghy Towing

### Two-Wheel-Drive Vehicles

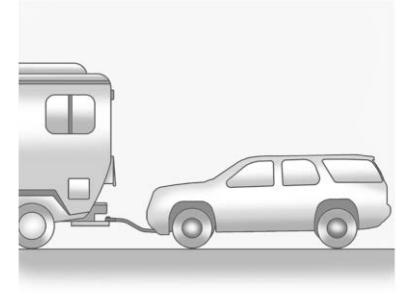


**Caution**

If the two-wheel-drive 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.

Two-wheel-drive vehicles should not be towed with all four wheels on the ground.

### Four-Wheel-Drive Vehicles



Only dinghy tow four-wheel-drive vehicles with a two-speed transfer case that have an N (Neutral) and a Four-Wheel Drive Low (4 ↓) setting.

**⚠ Warning**

Shifting a four-wheel-drive vehicle's transfer case into N (Neutral) can cause the vehicle to roll even if the transmission is in P (Park). You or others could be injured. Set the parking brake before shifting the transfer case to N (Neutral).

To dinghy tow:

1. Position the vehicle being towed behind the tow vehicle, facing forward and on a level surface.
2. Securely attach the vehicle being towed to the tow vehicle.
3. Apply the parking brake and start the engine.

   For vehicles with Electric Parking Brakes (EPB), the EPB cannot be applied and the tires must be chocked.
4. Shift the transfer case to N (Neutral). See “Shifting into N (Neutral)” under *Four-Wheel Drive* ⇨ *211*. Check that the vehicle is in N (Neutral) by shifting the transmission to R (Reverse) and then to D (Drive). There should be no movement of the vehicle while shifting.
5. Shift the transmission into D (Drive). Turn the engine off.

**Caution**

Failure to disconnect the negative battery cable or to have it contact the terminals can cause damage to the vehicle.

6. Disconnect the negative battery cable at the battery and secure the nut and bolt. Cover the negative battery post with a non-conductive material to prevent any contact with the negative battery terminal.
7. Shift the transmission to P (Park).

**Caution**

If the steering column is locked, vehicle damage may occur.

8. Move the steering wheel to make sure the steering column is unlocked.
9. With a foot on the brake pedal, release the parking brake.
10. If equipped with Keyless Access, keep the RKE transmitter outside of the vehicle, and manually lock the doors. Access the vehicle as if it has a dead RKE transmitter battery, by using the key in the door lock.

### Disconnecting the Towed Vehicle

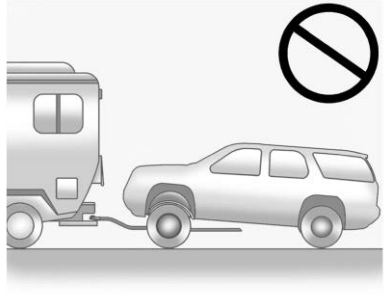
Before disconnecting the towed vehicle:

1. Park on a level surface.
2. Set the parking brake, then shift the transmission to P (Park).
3. Connect the battery.
4. Apply the brake pedal.
5. Turn the ignition to ON/RUN with the engine off. Shift the transfer case out of N (Neutral) to 2 ↑. See “Shifting out of N (Neutral)” under *Four-Wheel Drive* ⇨ *211*. See your dealer if the transfer case cannot be shifted out of N (Neutral).

6. Check that the vehicle is in 2 ↑ by starting the engine and shifting the transmission to R (Reverse) and then to D (Drive). There should be movement of the vehicle while shifting.
7. Shift the transmission to P (Park) and turn off the ignition.
8. Disconnect the vehicle from the tow vehicle.
9. Release the parking brake.
10. Reset any lost presets.

    The outside temperature display will default to 0 °C (32 °F) but will reset with normal usage.

## Dolly Towing – Front Towing (Front Wheels Off the Ground)



**Caution**

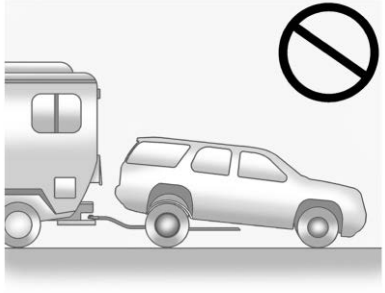
If a two-wheel-drive vehicle is towed with the rear wheels on the ground, the transmission could be damaged. The repairs would not be covered by the vehicle warranty. Never tow the vehicle with the rear wheels on the ground.

**Caution**

Towing a four-wheel-drive vehicle with all four wheels on the ground, or even with only two of its wheels on the ground, will damage drivetrain components. Do not tow a four-wheel-drive vehicle with any of its wheels on the ground.

This vehicle should not be towed with the rear wheels on the ground.

## Dolly Towing – Rear Towing (Rear Wheels Off the Ground) – Four-Wheel-Drive Vehicles

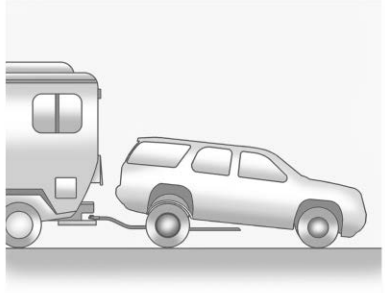


**Caution**

Towing a four-wheel-drive vehicle with all four wheels on the ground, or even with only two of its wheels on the ground, will damage drivetrain components. Do not tow a four-wheel-drive vehicle with any of its wheels on the ground.

This vehicle should not be towed with any wheels on the ground.

## Dolly Towing – Rear Towing (Rear Wheels Off the Ground) – Two-Wheel-Drive Vehicles



To dolly tow the vehicle from the rear:

1. Attach the dolly to the tow vehicle following the dolly manufacturer's instructions.
2. Drive the rear wheels onto the dolly.
3. Firmly set the parking brake. See *Parking Brake* ⇨ *215*.
4. Put the transmission in P (Park).
5. Secure the vehicle to the dolly following the manufacturer's instructions.
6. Use an adequate clamping device designed for towing to ensure that the front wheels are locked into the straight position.
7. Turn the ignition to LOCK/OFF.

# Appearance Care

## Exterior Care

### Locks

Locks are lubricated at the factory. Use a de-icing agent only when absolutely necessary, and have the locks greased after using. See *Recommended Fluids and Lubricants* ⇨ *355*.

### Washing the Vehicle

To preserve the vehicle's finish, wash it often and out of direct sunlight.

**Caution**

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 warranty. Approved cleaning products can be obtained from your dealer. Follow all manufacturer directions regarding

(Continued)

**Caution (Continued)**

correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.

**Caution**

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.

**Caution**

Do not power wash any component under the hood that has this symbol.

This could cause damage that would not be covered by the vehicle warranty.

If using an automatic car wash, follow the car wash instructions. The windshield wiper and rear window wiper, if equipped, must be off. Remove any accessories that may be damaged or interfere with the car wash equipment.

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.

**Caution**

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 Moldings

**Caution**

Failure to clean and protect the bright metal moldings can result in a hazy white finish or pitting. This damage would not be covered by the vehicle warranty.

The bright metal moldings on the vehicle are aluminum, chrome or stainless steel. To prevent damage always follow these cleaning instructions:

- Be sure the molding is cool to the touch before applying any cleaning solution.
- Use only approved cleaning solutions for aluminum, chrome or stainless steel. Some cleaners are highly acidic or contain alkaline substances and can damage the moldings.
- Always dilute a concentrated cleaner according to the manufacturer's instructions.
- Do not use cleaners that are not intended for automotive use.
- Use a nonabrasive wax on the vehicle after washing to protect and extend the molding finish.

## Cleaning Exterior Lamps/Lenses, Emblems, Decals, and Stripes

Use only lukewarm or cold water, a soft cloth, and a car washing soap to clean exterior lamps, lenses, emblems, decals, and stripes. Follow instructions under "Washing the Vehicle" previously in this section.

Lamp covers are made of plastic, and some have a UV protective coating. Do not clean or wipe them when dry.

Do not use any of the following on lamp covers:

- Abrasive or caustic agents.
- Washer fluids and other cleaning agents in higher concentrations than suggested by the manufacturer.
- Solvents, alcohols, fuels, or other harsh cleaners.
- Ice scrapers or other hard items.

- Aftermarket appearance caps or covers while the lamps are illuminated, due to excessive heat generated.

**Caution**

Failure to clean lamps properly can cause damage to the lamp cover that would not be covered by the vehicle warranty.

**Caution**

Using wax on low gloss black finish stripes can increase the gloss level and create a non-uniform finish. Clean low gloss stripes with soap and water only.

## Air Intakes

Clear debris from the air intakes, between the hood and windshield, when washing the vehicle.

## 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 weatherstrip lubricant on weatherstrips to make them last longer, seal better, and not stick or squeak. Lubricate weatherstrips at least once a year. Hot, dry climates may require more frequent application. Black marks from rubber material on painted surfaces can be removed by rubbing with a clean cloth. See *Recommended Fluids and Lubricants* ⇨ *355*.

## Tires

Use a stiff brush with tire cleaner to clean the tires.

**Caution**

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.

**Caution**

Chrome wheels and other chrome trim may be damaged if the vehicle is not washed after driving on roads

(Continued)

**Caution (Continued)**

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.

**Caution**

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.

## Brake System

Visually inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear and rotors for surface condition. Inspect drum brake linings/shoes for wear or cracks. Inspect all other brake parts.

## Steering, Suspension, and Chassis Components

Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year.

Inspect power steering for proper attachment, connections, binding, leaks, cracks, chafing, etc.

Visually check constant velocity joint boots and axle seals for leaks.

For 1500 Series vehicles, at least every other oil change lubricate the outer tie rod ends.

Control arm ball joints on 1500 Series vehicles are maintenance-free.

**Caution**

Lubrication of applicable steering/suspension points should not be done unless the temperature is –12 °C (10 °F) or higher, or damage could result.

## Body Component Lubrication

Lubricate all key lock cylinders, hood hinges, liftgate hinges, steel fuel door hinge and power assist step hinges, 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

At least twice a year, spring and fall, use plain water to flush any corrosive materials from the underbody. Take care to thoroughly clean any areas where mud and other debris can collect. If equipped with power assist steps, extend them and then use a high pressure wash to clean all joints and gaps.

Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

### 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. See “Finish Care” previously in this section.

## Interior Care

To prevent dirt particle abrasions, regularly clean the vehicle's interior. Immediately remove any soils. Newspapers or dark garments can 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.

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 on any switches or controls. Remove cleaners quickly.

Before using cleaners, read and follow all safety instructions on the label. While cleaning the interior, open the doors and windows to get proper ventilation.

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 soil from any interior surface.
- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with too much pressure.
- Do not use laundry detergents or dishwashing soaps with degreasers. For liquid cleaners, use approximately 20 drops per 3.8 L (1 gal) of water. A concentrated soap solution will create streaks and attract 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. If necessary, use a commercial glass cleaner after cleaning with plain water.

**Caution**

To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.

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 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 vacuum brush attachment is being used, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible:

- 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. 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 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.

After cleaning, use a paper towel to blot excess moisture.

### Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays

Use a microfiber cloth on high gloss surfaces or vehicle displays. First, use a soft bristle brush to remove dirt that can scratch the surface. Then gently clean by rubbing with a microfiber cloth. 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.

**Caution**

Do not attach a device with a suction cup to the display. This may cause damage and would not be covered by the vehicle warranty.

### Instrument Panel, Leather, Vinyl, Other Plastic Surfaces, Low Gloss Paint Surfaces, and Natural Open Pore Wood 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.

**Caution**

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, 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.

**Caution**

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

If equipped, wash with warm water and mild detergent. Do not use chlorine bleach. Rinse with cold water, and then dry completely.

### Care of Seat Belts

Keep belts clean and dry.

**⚠ Warning**

Do not bleach or dye seat belt webbing. It may severely weaken the webbing. In a crash, they might not be able to provide adequate protection. Clean and rinse seat belt webbing only with mild soap and lukewarm water. Allow the webbing to dry.

## Floor Mats

**⚠ Warning**

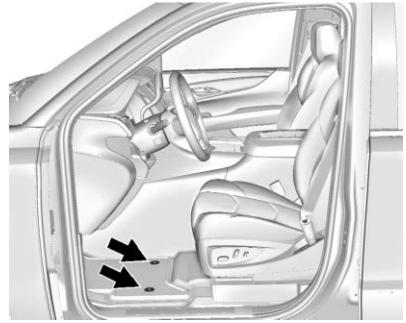
If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

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.
- Do not use a floor mat if the vehicle is not equipped with a floor mat retainer on the driver side floor.
- 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.

### Removing and Replacing the Floor Mats

Pull up on the rear of the floor mat to unlock each retainer and remove.



Reinstall by lining up the floor mat retainer openings over the carpet retainers and snapping into position.

Make sure the floor mat is properly secured in place.

Verify the floor mat does not interfere with the pedals.

# Service and Maintenance

**General Information**
General Information ..... 345

**Cadillac Premium Care Maintenance**
Cadillac Premium Care Maintenance ..... 347

**Maintenance Schedule**
Maintenance Schedule ..... 347

**Special Application Services**
Special Application Services ..... 352

**Additional Maintenance and Care**
Additional Maintenance and Care ..... 352

**Recommended Fluids, Lubricants, and Parts**
Recommended Fluids and Lubricants ..... 355
Maintenance Replacement Parts ..... 356

**Maintenance Records**
Maintenance Records ..... 357

## 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.

**Caution**

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.

Do not have chemical flushes that are not approved by GM performed on the vehicle. The use of flushes, solvents, cleaners, or lubricants that are not approved by GM could damage the vehicle, requiring expensive repairs that are not covered by the vehicle warranty.

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* ⇨ *193*.
- Are driven on reasonable road surfaces within legal driving limits.
- Use the recommended fuel. See *Fuel* ⇨ *248*.

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* ⇨ *265*.

# Cadillac Premium Care Maintenance

This vehicle comes with Cadillac Premium Care Maintenance. It is a maintenance program that covers select services, when scheduled in accordance with the owner's manual, including:

- Oil changes based on the vehicle's oil life monitor system.
- Tire rotation every 12 000 km (7,500 mi).
- 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* ⇨ *268*.

### Once a Month

- Check the tire inflation pressures. See *Tire Pressure* ⇨ *305*.
- Inspect the tires for wear. See *Tire Inspection* ⇨ *312*.
- Check the windshield washer fluid level. See *Washer Fluid* ⇨ *278*.

## 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 may not indicate the need for vehicle service for up to 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* ⇨ *270*.

## Power Take Off (PTO) and Extended Idle Use

When the vehicle is used with the PTO equipment or used in a way that requires extended idle time, one hour of use shall be deemed the same as 53 km (33 mi). See *Driver Information Center (DIC)* ⇨ *145* for hourmeter.

## 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* ⇨ *312*.

- Check engine oil level and oil life percentage. If needed, change engine oil and filter, and reset oil life system.
  See *Engine Oil* ⇨ *268* and *Engine Oil Life System* ⇨ *270*.
- Check engine coolant level. See *Cooling System* ⇨ *273*.

- Check windshield washer fluid level. See *Washer Fluid* ⇨ *278*.
- Visually inspect windshield wiper blades for wear, cracking, or contamination. See *Exterior Care* ⇨ *337*. Replace worn or damaged wiper blades. See *Wiper Blade Replacement* ⇨ *284*.
- Check tire inflation pressures. See *Tire Pressure* ⇨ *305*.
- Inspect tire wear. See *Tire Inspection* ⇨ *312*.
- Visually check for fluid leaks.
- Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter* ⇨ *272*.
- Inspect brake system. See *Exterior Care* ⇨ *337*.
- Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear. See *Exterior Care* ⇨ *337*.
- Lubricate the suspension and steering components at least every other oil change (if equipped with grease fittings).
- Check restraint system components. See *Safety System Check* ⇨ *83*.
- 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* ⇨ *337*.
- Check starter switch. See *Starter Switch Check* ⇨ *283*.
- Check automatic transmission shift lock control function. See *Automatic Transmission Shift Lock Control Function Check* ⇨ *283*.
- Check parking brake and automatic transmission park mechanism. See *Park Brake and P (Park) Mechanism Check* ⇨ *284*.
- 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. If the hold open is low, service the gas strut. See *Gas Strut(s)* ⇨ *285*.
- Inspect sunroof track and seal, if equipped. See *Sunroof* ⇨ *56*.
- Verify spare tire key lock operation and lubricate as needed. See *Tire Changing* ⇨ *320*.

| Maintenance Schedule Additional Required Services - Normal | 12 000 km/7,500 mi | 24 000 km/15,000 mi | 36 000 km/22,500 mi | 48 000 km/30,000 mi | 60 000 km/37,500 mi | 72 000 km/45,000 mi | 84 000 km/52,500 mi | 96 000 km/60,000 mi | 108 000 km/67,500 mi | 120 000 km/75,000 mi | 132 000 km/82,500 mi | 144 000 km/90,000 mi | 156 000 km/97,500 mi | 168 000 km/105,000 mi | 180 000 km/112,500 mi | 192 000 km/120,000 mi | 204 000 km/127,500 mi | 216 000 km/135,000 mi | 228 000 km/142,500 mi | 240 000 km/150,000 mi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 transfer case fluid, if equipped with 4WD. (4) | | | | | | | | | | | | | ✓ | | | | | | | |
| Replace spark plugs. Inspect spark plug wires. | | | | | | | | | | | | | ✓ | | | | | | | |
| Drain and fill engine cooling system. (5) | | | | | | | | | | | | | | | | | | | | ✓ |
| Visually inspect accessory drive belts. (6) | | | | | | | | | | | | | | | | | | | | ✓ |
| Replace brake fluid. (7) | | | | | | | | | | | | | | | | | | | | |

## Footnotes — Maintenance Schedule Additional Required Services - Normal

**(1)** Or every two years, whichever comes first. More frequent passenger compartment air filter replacement may be needed if driving in areas with heavy traffic, poor air quality, high dust levels, or environmental allergens. Passenger compartment air filter replacement may also be needed if there is reduced airflow, window fogging, or odors. Your GM dealer can help determine when to replace the filter.

**(2)** Visually check all fuel and vapor lines and hoses for proper attachment, connection, routing, and condition.

**(3)** Or every four years, whichever comes first. If driving in dusty conditions, inspect the filter at each oil change or more often as needed.

**(4)** Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

**(5)** Or every five years, whichever comes first. See *Cooling System* ⇨ *273*.

**(6)** Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

**(7)** Replace brake fluid every five years. See *Brake Fluid* ⇨ *279*.

| Maintenance Schedule Additional Required Services - Severe | 12 000 km/7,500 mi | 24 000 km/15,000 mi | 36 000 km/22,500 mi | 48 000 km/30,000 mi | 60 000 km/37,500 mi | 72 000 km/45,000 mi | 84 000 km/52,500 mi | 96 000 km/60,000 mi | 108 000 km/67,500 mi | 120 000 km/75,000 mi | 132 000 km/82,500 mi | 144 000 km/90,000 mi | 156 000 km/97,500 mi | 168 000 km/105,000 mi | 180 000 km/112,500 mi | 192 000 km/120,000 mi | 204 000 km/127,500 mi | 216 000 km/135,000 mi | 228 000 km/142,500 mi | 240 000 km/150,000 mi |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 and filter. | | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | |
| Change transfer case fluid, if equipped with 4WD. (4) | | | | | | ✓ | | | | | | ✓ | | | | | | ✓ | | |
| Replace spark plugs. Inspect spark plug wires. | | | | | | | | | | | | | ✓ | | | | | | | |
| Drain and fill engine cooling system. (5) | | | | | | | | | | | | | | | | | | | | ✓ |
| Visually inspect accessory drive belts. (6) | | | | | | | | | | | | | | | | | | | | ✓ |
| Replace brake fluid. (7) | | | | | | | | | | | | | | | | | | | | |

## Footnotes — Maintenance Schedule Additional Required Services - Severe

**(1)** Or every two years, whichever comes first. More frequent passenger compartment air filter replacement may be needed if driving in areas with heavy traffic, poor air quality, high dust levels, or environmental allergens. Passenger compartment air filter replacement may also be needed if there is reduced airflow, window fogging, or odors. Your GM dealer can help determine when to replace the filter.

**(2)** Visually check all fuel and vapor lines and hoses for proper attachment, connection, routing, and condition.

**(3)** Or every four years, whichever comes first. If driving in dusty conditions, inspect the filter at each oil change or more often as needed.

**(4)** Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

**(5)** Or every five years, whichever comes first. See *Cooling System* ⇨ *273*.

**(6)** Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

**(7)** Replace brake fluid every five years. See *Brake Fluid* ⇨ *279*.

## Special Application Services

- Severe Commercial Use Vehicles Only: Lubricate chassis components every oil change.
- Have underbody flushing service performed. See "Underbody Maintenance" in *Exterior Care* ⇨ *337*.

## 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 12-volt 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 have access to tools and equipment to inspect the belts and recommend adjustment or 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* ⇨ *355* 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 and 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* ⇨ *341* and *Exterior Care* ⇨ *337*.

### 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

Fluids and lubricants identified below by name, part number, or specification can be obtained from your dealer.

| Usage | Fluid/Lubricant |
|---|---|
| Automatic Transmission | DEXRON ULV Automatic Transmission Fluid (GM Part No. 19352619, in Canada 19352620). |
| Chassis Lubrication | Chassis Lubricant (GM Part No. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB. |
| Engine Coolant | 50/50 mixture of clean, drinkable water and use only DEX-COOL Coolant. See *Cooling System* ⇨ *273*. |
| Engine Oil | Engine oil meeting the dexos1 specification of the proper SAE viscosity grade. ACDelco dexos1 is recommended. See *Engine Oil* ⇨ *268*. |
| Front Axle (4WD Only) | SAE 75W-90 Synthetic Axle Lubricant (GM Part No. 88900401, in Canada 89021678). |
| Hydraulic Brake System | DOT 3 Hydraulic Brake Fluid (GM Part No. 19353126, in Canada 19299819). |
| Key Lock Cylinders, Hood Hinges, Body Door Hinge Pins, Power Assist Steps, Liftgate Hinge, Linkage, and Outer Liftgate Handle Pivot Points, and Fuel Door Hinge | Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474). |
| Rear Axle | SAE 75W-85 Synthetic Axle Lubricant (GM Part No. 19300457, in Canada 19300458). |

| Usage | Fluid/Lubricant |
|---|---|
| Transfer Case | DEXRON-VI Automatic Transmission Fluid. |
| Weatherstrip Conditioning | Weatherstrip Lubricant (GM Part No. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. 12345579, in Canada 10953481). |
| Weatherstrip Squeaks | Synthetic Grease with Teflon, Superlube (GM Part No. 12371287, in Canada 10953437). |
| Windshield Washer | Automotive windshield washer fluid that meets regional freeze protection requirements. |

## 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 | 22845992 | A3181C |
| Oil Filter | 19330000 | PF63E |
| Passenger Compartment Air Filter | 23281440 | CF188 |
| Spark Plugs | 12622441 | 41-114 |
| Wiper Blades | | |
| Front Driver Side – 55 cm (21.7 in) | 22756331 | — |
| Front Passenger Side – 55 cm (21.7 in) | 22756331 | — |
| Rear – 33 cm (13.0 in) | 22956295 | — |

# 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 |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# Technical Data

**Vehicle Identification**
Vehicle Identification Number (VIN) ..... 358
Service Parts Identification Label ..... 358

**Vehicle Data**
Capacities and Specifications .... 359
Engine Drive Belt Routing ..... 361

# Vehicle Identification

## Vehicle Identification Number (VIN)

This legal identifier is in the front corner of the instrument panel, on the driver side of the vehicle. It can be seen through the windshield from outside. The Vehicle Identification Number (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* ⇨ *359* for the vehicle's engine code.

## Service Parts Identification Label

There may be a label on the inside of the glove box that contains the following information:

- Vehicle Identification Number (VIN)
- Model designation
- Paint information
- Production options and special equipment

If there is no label, there is a barcode on the certification label on the center (B) pillar to scan for this same information.

# Vehicle Data

## Capacities and Specifications

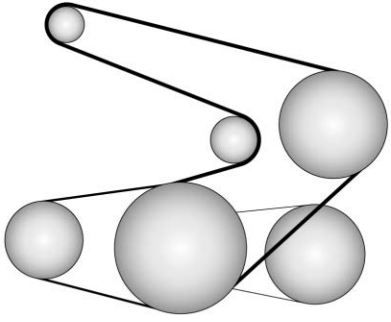
The following approximate capacities are given in metric and English conversions. See *Recommended Fluids and Lubricants* ⇨ *355* for more information.

| 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. | |
| Cooling System | 16.8 L | 17.8 qt |
| Engine Oil with Filter | 7.6 L | 8.0 qt |
| Fuel Tank | | |
| Short Wheelbase | 98.4 L | 26.0 gal |
| Long Wheelbase | 119.2 L | 31.5 gal |
| Transfer Case Fluid | 1.5 L | 1.6 qt |
| Wheel Nut Torque | 190 N•m | 140 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 | Spark Plug Gap |
|---|---|---|
| 6.2L V8 | J | 0.95–1.10mm (0.037–0.043 in) |

## Engine Drive Belt Routing



# Customer Information

## Customer Information

Customer Satisfaction Procedure ..... 362
Customer Assistance Offices .... 364
Customer Assistance for Text Telephone (TTY) Users ..... 365
Online Owner Center ..... 365
GM Mobility Reimbursement Program ..... 365
Roadside Service ..... 366
Scheduling Service Appointments ..... 368
Courtesy Transportation Program ..... 368
Collision Damage Repair ..... 369
Service Publications Ordering Information ..... 371
Radio Frequency Statement .... . 372

## Reporting Safety Defects

Reporting Safety Defects to the United States Government ..... 372
Reporting Safety Defects to the Canadian Government ..... 373
Reporting Safety Defects to General Motors ..... 373

## Vehicle Data Recording and Privacy

Vehicle Data Recording and Privacy ..... 374
Event Data Recorders ..... 374
OnStar ..... 375
Infotainment System ..... 375

# 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.
3033 Wilson Boulevard
Suite 600
Arlington, VA 22201

Telephone: 1-800-955-5100
http://www.bbb.org/council/programs-services/dispute-handling-and-resolution/bbb-auto-line

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 Company wants you to be aware of its participation in a no-charge mediation/arbitration program. General Motors of Canada Company 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 about 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 Cadillac Customer Care Centre, 1-888-446-2000, or write to:

General Motors Cadillac Customer Care Centre
General Motors of Canada Company
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: 1-800-224-1400

From U.S. Virgin Islands:

1-800-496-9994

### Canada

General Motors of Canada Company
Cadillac Customer Care Centre, Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7
www.gm.ca

1-888-446-2000 (English/French)
Cadillac Roadside Service:
1-800-882-1112

### Overseas

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 allows interaction with Cadillac and keeps important vehicle-specific information in one place.

#### Membership Benefits

**:** Download owner's manuals and view vehicle-specific how-to videos.

**:** View maintenance schedules, alerts, and OnStar onboard vehicle diagnostic information. Schedule service appointments.

**:** View printable dealer-recorded service records and self-recorded service records.

**:** Select a dealer and view locations, maps, phone numbers, and hours.

**:** Track your vehicle's warranty information.

**:** View active recalls or search by Vehicle Identification Number (VIN). See *Vehicle Identification Number (VIN)* ⇨ *358*.

**:** View GM Card, SiriusXM Satellite radio (if equipped), and OnStar account information.

**:** Chat with online help representatives.

See my.cadillac.com to register your vehicle.

### Cadillac Owner Centre (Canada) cadillacowner.ca

Visit the Cadillac Owner Centre:

- Chat live with online help representatives.
- Locate owner resources such as lease-end, financing, and warranty information.
- Retrieve favorite articles, quizzes, tips, and multimedia galleries organized into the Featured Articles and Auto Care Sections.
- Download owner's manuals.
- Find Cadillac-recommended maintenance services.

## GM Mobility Reimbursement Program

GENERAL MOTORS MOBILITY

This program is available to qualified applicants for cost reimbursement, up to certain limits, of eligible aftermarket adaptive equipment required for the vehicle, such as hand controls or a wheelchair/scooter lift for the vehicle.

To learn about the GM Mobility program, see 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. See www.gm.ca or call 1-800-GM-DRIVE (800-463-7483) 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 for the duration of the vehicle's powertrain warranty.

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. General Motors North America and Cadillac reserve the right to make any changes or discontinue the Roadside Service program at any time without notification.

General Motors North America and Cadillac 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 not 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 Powertrain warranty period. Items considered are hotel, meals, and rental car or a vehicle being delivered back to the customer, up to 500 miles.

## 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

Service is not provided if a vehicle is in an area that is not accessible to the service vehicle or is not a regularly traveled or maintained public road, which includes ice and winter roads. Off-road use is not covered.

## Services Specific to Canadian-Purchased Vehicles

- **Fuel delivery:** Reimbursement is up to 7 liters. 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. Items considered are hotel, meals, and rental car or a vehicle being delivered back to the customer, up to 800 km.
- **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 do so, your dealer may offer the following transportation options:

#### Shuttle Service

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 overnight warranty repairs are needed, and public transportation is used, the expense must be supported by original receipts and within the maximum amount allowed by GM for shuttle service. If U.S. customers arrange their own transportation, 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.

### Courtesy Rental Vehicle

For an overnight warranty repair, the dealer may provide an available courtesy rental vehicle or provide for reimbursement of a rental vehicle. Reimbursement is limited and must be supported by original receipts as well as a signed and completed 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. Additional fees such as fuel usage charges, taxes, levies, usage fees, excessive mileage, or rental usage beyond the completion of the repair are also your responsibility.

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. Contact your dealer for specific availability.

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* ⇨ *366*.

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?* ⇨ *89*.

### 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.

### Owner Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The Owner's Manual includes the Maintenance Schedule for all models.

In-Portfolio: Includes a Portfolio, Owner's Manual, and Warranty Manual.

RETAIL SELL PRICE: $35.00 – $40.00 (U.S.) plus handling and shipping fees.

Without Pouch: Owner's Manual only.

RETAIL SELL PRICE: $25.00 (U.S.) plus handling and shipping fees.

### Current and Past Models

Service and Owner publications are available for many current and past model year 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), see 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.

## Radio Frequency Statement

This vehicle has systems that operate on a radio frequency that complies with Part 15/Part 18 of the Federal Communications Commission (FCC) rules and with Innovation, Science and Economic Development (ISED) Canada's RSP-100 / license-exempt RSS's / ICES-001.

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.

# 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 Company. Call Transport Canada at 1-800-333-0510; go to:

www.tc.gc.ca/recalls (English)

www.tc.gc.ca/rappels (French)

or write to:

Transport Canada
Motor Vehicle Safety Directorate
Defect Investigations and Recalls Division
80 Noel Street
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 Company
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

In Mexico, call 01-800-466-0805.

In other Central America and Caribbean Countries, call 52-722-236-0680.

# 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 these 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 service plan, additional data may be collected through the OnStar system. This includes information about the vehicle's operation; 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.

See *OnStar Additional Information* ➪ *382*.

## Infotainment System

Using the navigation 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.

# OnStar

**OnStar Overview**
OnStar Overview ..... 376

**OnStar Services**
Emergency ..... 377
Security ..... 378
Navigation ..... 378
Connections ..... 379
Diagnostics ..... 381

**OnStar Additional Information**
OnStar Additional Information ..... 382

## OnStar Overview

Voice Command Button

Blue OnStar Button

Red Emergency Button

This vehicle may be equipped with a comprehensive, in-vehicle system that can connect to an OnStar Advisor for Emergency, Security, Navigation, Connections, and Diagnostics Services. OnStar services may require a paid service plan and data plan. OnStar requires the vehicle battery and electrical system, cellular service, and GPS satellite signals to be available and operating. OnStar acts as a link to existing emergency service providers. OnStar may collect information about you and your vehicle, including location information. See OnStar User Terms, Privacy Statement, and Software Terms for more details including system limitations at www.onstar.com (U.S.) or www.onstar.ca (Canada).

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.
- Off: System is active. Press twice to speak with an OnStar Advisor.

Press or call 1-888-4ONSTAR (1-888-466-7827) to speak to an Advisor.

Functionality of the Voice Command button may vary by vehicle and region.

Press to:

- Open the OnStar app on the infotainment display. See the infotainment manual for information on how to use the OnStar app.

Or

- 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.
- Obtain and customize the Wi-Fi hotspot name or SSID and password, if equipped.

Press to connect to an Advisor to:

- Verify account information or update contact information.
- Get driving directions.
- Receive a Diagnostic check of the vehicle's key operating systems.
- Receive Roadside Assistance.
- Manage Wi-Fi Settings, if equipped.

Press SOS to get a priority connection to an OnStar Advisor available 24/7 to:

- Get help for an emergency.
- Be a Good Samaritan or respond to an AMBER Alert.
- Get assistance in severe weather or other crisis situations and find evacuation routes.

# OnStar Services

## Emergency

Emergency Services require an active, OnStar service plan (excludes Basic Plan). With Automatic Crash Response, built-in sensors can automatically alert a specially trained OnStar Advisor who is immediately connected in to the vehicle to help.

Press SOS for a priority connection to an OnStar Advisor who can contact emergency service providers, direct them to your exact location, and relay important information.

With OnStar Crisis Assist, specially trained Advisors are available 24 hours a day, 7 days a week, to provide a central point of contact, assistance, and information during a crisis.

With Roadside Assistance, Advisors can locate a nearby service provider to help with a flat tire, a battery jump, or an empty gas tank.

## Security

If equipped, OnStar provides these services:

- With Stolen Vehicle Assistance, OnStar Advisors can use GPS to pinpoint the vehicle and help authorities quickly recover it.
- With Remote Ignition Block, if equipped, OnStar can block the engine from being restarted.
- With Stolen Vehicle Slowdown, if equipped, OnStar can work with law enforcement to gradually slow the vehicle down.

### Theft Alarm Notification

If equipped, if the doors are locked and the vehicle alarm sounds, a notification by text, e-mail, or phone call will be sent. If the vehicle is stolen, an OnStar Advisor can work with authorities to recover the vehicle.

## Navigation

OnStar navigation requires a specific OnStar service plan.

Press to receive Turn-by-Turn directions or have them sent to the vehicle's navigation screen, if equipped.

### Turn-by-Turn Navigation

1. Press to connect to an Advisor.
2. Request directions to be downloaded to the vehicle.
3. Follow the voice-guided commands.

### Using Voice Commands During a Planned Route

Functionality of the Voice Command button may vary by vehicle and region. For some vehicles, press to open the OnStar app on the infotainment display. For other vehicles press as follows.

#### Cancel Route

1. Press . System responds: "OnStar ready," then a tone.
2. Say "Cancel route." System responds: "Do you want to cancel directions?"
3. Say "Yes." System responds: "OK, request completed, thank you, goodbye."

#### Route Preview

1. Press . System responds: "OnStar ready," then a tone.
2. Say "Route preview." System responds with the next three maneuvers.

#### Repeat

1. Press . 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.

#### Get My Destination

1. Press . System responds: "OnStar ready," then a tone.

2. Say “Get my destination.” System responds with the address and distance to the destination, then responds with “OnStar ready,” then a tone.

### Send Destination to Vehicle

Directions can be sent to the vehicle’s navigation screen, if equipped.

Press , then ask the Advisor to download directions to the vehicle’s navigation system, if equipped. After the call ends, the navigation screen will provide prompts to begin driving directions. Routes that are sent to the navigation screen can only be canceled through the navigation system.

See www.onstar.com (U.S.) or www.onstar.ca (Canada).

## Connections

The following OnStar services help with staying connected.

For coverage maps, see www.onstar.com (U.S.) or www.onstar.ca (Canada).

### Ensuring Security

- Change the default passwords for the Wi-Fi hotspot and myCadillac mobile app. Make these passwords different from each other and use a combination of letters, numbers, and symbols to increase the security.
- Change the default name of the SSID (Service Set Identifier). This is your network’s name that is visible to other wireless devices. Choose a unique name and avoid family names or vehicle descriptions.

### OnStar Wi-Fi Hotspot (If Equipped)

The vehicle may have a built-in Wi-Fi hotspot that provides access to the Internet and web content at 4G LTE speed. Up to seven mobile devices can be connected. A data plan is required. Use the in-vehicle controls only when it is safe to do so.

1. To retrieve Wi-Fi hotspot information, press  to open the OnStar app on the infotainment display, then select Wi-Fi Hotspot. On some vehicles, touch Wi-Fi or Wi-Fi Settings on the screen.
2. The Wi-Fi settings will display the Wi-Fi hotspot name (SSID), password, and on some vehicles, the connection type (no Internet connection, 3G, 4G, 4G LTE), and signal quality (poor, good, excellent).
3. To change the SSID or password, press  or call 1-888-4ONSTAR to connect with an Advisor. On some vehicles, the SSID and password can be changed in the Wi-Fi Hotspot menu.

After initial set-up, your vehicle’s Wi-Fi hotspot will connect automatically to your mobile devices. Manage data usage by turning Wi-Fi on or off on your mobile device, by using the myCadillac mobile app, or by contacting an OnStar Advisor. On some vehicles, Wi-Fi can also be managed from the Wi-Fi Hotspot menu.

### MyCadillac Mobile App (If Available)

Download the myCadillac mobile app to compatible Apple and Android smartphones. Cadillac users can access the following services from a smartphone:

- Remotely start/stop the vehicle, if factory-equipped.
- Lock/unlock doors, if equipped with automatic locks.
- Activate the horn and lamps.
- Check the vehicle's fuel level, oil life, or tire pressure, if factory-equipped with the Tire Pressure Monitor System.
- Send destinations to the vehicle.
- Locate the vehicle on a map (U.S. market only).
- Turn the vehicle's Wi-Fi hotspot on/off, manage settings, and monitor data consumption, if equipped.
- Locate a dealer and schedule service.
- Request roadside assistance.
- Set a parking reminder with pin drop, take a photo, make a note, and set a timer.
- Connect with Cadillac on social media.

For myCadillac mobile app information and compatibility, see www.my.cadillac.com.

An active OnStar service, compatible device, factory-installed remote start, and power locks are required. Data rates apply. See www.onstar.com for details and system limitations.

## Remote Services

Contact an OnStar Advisor to unlock the doors or sound the horn and flash the lamps.

## OnStar AtYourService

OnStar Advisors can provide offers from restaurants and retailers on your route, help locate hotels, or book a room. These services vary by market.

## OnStar Hands-Free Calling

Make and receive calls with the built-in wireless calling service, which requires available minutes. Functionality of the Voice Command button may vary by vehicle and region. For some vehicles, press to open the OnStar app on the infotainment display, then select Hands-Free calling. For other vehicles press as follows.

### Make a Call

1. Press . System responds: "OnStar ready."
2. Say "Call." System responds: "Call. 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 . System responds: "OnStar ready."

2. Say “Call.” System responds: “Call. Please say the name or number to call.”
3. Say “911” without pausing. System responds: “911.”
4. Say “Call.” System responds: “OK, dialing 911.”

### Retrieve My Number

1. Press . System responds: “OnStar ready.”
2. Say “My number.” System responds: “Your OnStar Hands-Free Calling number is,” then says the number.

### End a Call

Press . System responds: “Call ended.”

### Verify Minutes and Expiration

Press and say “Minutes” then “Verify” to check how many minutes remain and their expiration date.

## Diagnostics

By monitoring and reporting on the vehicle’s key systems, OnStar Advanced Diagnostics provides a way to keep up on maintenance. Capabilities vary by model. See www.onstar.com for details and system limitations. Message and data rates may apply.

Advanced Diagnostics requires an active OnStar paid service plan, e-mail address on file, and enrollment in Advanced Diagnostics.

Includes:

- Diagnostic Alerts: Set preferences to receive real-time e-mails, texts, or monthly reports of the vehicle’s health. Or press to have an Advisor initiate a remote diagnostic report.
- Proactive Alerts: Receive a real-time e-mail or text message regarding potential issues with key vehicle components, such as the battery, fuel system, or starter system. Alerts for potential issues appear on the infotainment display. Proactive Alerts are designed to help predict specific types of issues based on information collected from the vehicle. Other factors may affect vehicle performance. Not all issues will deliver alerts. In some cases, a dealer service check may be required to confirm the accuracy of the alerts.
- Dealer Maintenance Notification: Have the vehicle notify your preferred dealer when it is time for maintenance. Your dealer will then contact you to set up an appointment.

To begin, press to speak to an Advisor, or see www.onstar.com.

# OnStar Additional Information

## OnStar Smart Driver

OnStar Smart Driver provides information about driving behavior to help maximize overall vehicle performance, reduce wear and tear, and enhance fuel efficiency. An Insurance Discounts Eligibility feature is also offered within OnStar Smart Driver. See www.onstar.com for details regarding vehicle eligibility and system limitations. OnStar, General Motors, and their affiliates are not insurance providers. Obtain insurance only from licensed insurance providers.

## In-Vehicle Audio Messages

Audio messages may play important information at the following times:

- Prior to vehicle purchase. Press to set up an account.
- With the OnStar Basic Plan, every 60 days.
- After change in ownership and at 90 days.

## Transferring Service

Press to request account transfer eligibility information. The Advisor can cancel or change account information.

## Selling/Transferring the Vehicle

Call 1-888-4ONSTAR (1-888-466-7827) immediately to terminate your OnStar services if the vehicle is disposed of, sold, transferred, or if the lease ends.

## Reactivation for Subsequent Owners

Press and follow the prompts to speak to an Advisor as soon as possible. The Advisor will update vehicle records and explain OnStar service options.

## How OnStar Service Works

Automatic Crash Response, Emergency Services, Crisis Assist, Stolen Vehicle Assistance, Advanced Vehicle Diagnostics, Remote Services, 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 User Terms, Privacy Statement, and Software Terms:

- Call 1-888-4ONSTAR (1-888-466-7827).
- See www.onstar.com (U.S.).
- See www.onstar.ca (Canada).
- Call TTY 1-877-248-2080.
- Press to speak with an Advisor.

OnStar services cannot work unless the vehicle is in a place where OnStar has an agreement with a wireless service provider for service in that area. The wireless service provider must also have coverage, network capacity, reception, and technology compatible with OnStar services. Service involving location information about the vehicle cannot work unless GPS signals are available, unobstructed, and compatible with the OnStar hardware. OnStar services

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 services may not work. Other problems beyond the control of OnStar — 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 — may prevent service.

See *Radio Frequency Statement* ⇨ *372*.

## Services for People with Disabilities

Advisors provide services to help with physical disabilities and medical conditions.

Press ⓞⓝ to help:

- Locate a gas station with an attendant to pump gas.
- Find a hotel, restaurant, etc., that meets accessibility needs.
- Provide directions to the closest hospital or pharmacy in urgent situations.

## TTY Users

OnStar has the ability to communicate to 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 OnStar services, except Virtual Advisor and OnStar Turn-by-Turn Navigation.

## OnStar Personal Identification Number (PIN)

A PIN is needed to access some OnStar services. The PIN will need to be changed the first time when speaking with an Advisor. To change the OnStar PIN, contact an OnStar Advisor by pressing ⓞⓝ or calling 1-888-4ONSTAR.

## Warranty

OnStar equipment may be warranted as part of the vehicle warranty.

## Languages

The vehicle can be programmed to respond in multiple languages.

Press ⓞⓝ and ask for an Advisor. Advisors are available in English, Spanish, and French. Available languages may vary by country.

## Potential Issues

OnStar cannot perform Remote Door Unlock or Stolen Vehicle Assistance after the vehicle has been off continuously for 10 days without an ignition cycle. If the vehicle has not been started for 10 days, OnStar can contact Roadside Assistance or 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 and underpasses; 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

Cellular reception is required for OnStar to send remote signals to the vehicle. Do not place items over or near the antenna to prevent blocking cellular and GPS signal reception.

## 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. Press On 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* ⇨ *262*. Added electrical equipment may interfere with the operation of the OnStar system and cause it to not operate.

## Vehicle Software Updates

OnStar or GM may remotely deliver software updates or changes to the vehicle without further notice or consent. These updates or changes may enhance or maintain safety, security, or the operation of the vehicle or the vehicle systems. Software updates or changes may affect or erase data or settings that are stored in the vehicle, such as OnStar Hands-Free Calling name tags, saved navigation destinations, or pre-set radio stations. Neither OnStar nor GM is responsible for any affected or erased data or settings. These updates or changes may also collect personal information. Such collection is described in the OnStar privacy statement or separately disclosed at the time of installation. These updates or changes may also cause a system to automatically communicate with GM servers to collect information about vehicle system status, identify whether updates or changes are available, or deliver updates or changes. An active OnStar agreement constitutes consent to these software updates or changes and agreement that either OnStar or GM may remotely deliver them to the vehicle.

## Privacy

The complete OnStar Privacy Statement may be found at www.onstar.com (U.S.), or www.onstar.ca (Canada). We recommend that you review it. If you

have any questions, call 1-888-4ONSTAR (1-888-466-7827) or press to speak with an Advisor. 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 - Software Acknowledgements

Certain OnStar components include libcurl and unzip software and other third party software. Below are the notices and licenses associated with libcurl and unzip and for other third party software please see http://opensource.lge.com/index

www.onstar.com/us/en/

### 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.

# Index


**A**

Accessories and Modifications ..... 265
Accessory Power ..... 203
Active Fuel Management ..... 205
Adaptive Cruise Control ..... 225
Add-On Electrical Equipment ..... 262
Additional Information
  OnStar ..... 382
Additional Maintenance
  and Care ..... 352
Adjustable Throttle and Brake
  Pedal ..... 198
Adjustments
  Lumbar, Front Seats .....61
Air Cleaner/Filter, Engine ..... 272
Air Conditioning .....173, 178
Air Filter, Passenger
  Compartment ..... 180
Air Vents ..... 179
Airbag System
  Check .....95
  How Does an Airbag Restrain?.....88
  Passenger Sensing System .....90
  What Makes an Airbag Inflate? ....88
  What Will You See after an
    Airbag Inflates? .....89
  When Should an Airbag
    Inflate?.....87
Airbag System (cont'd)
  Where Are the Airbags? .....86
Airbags
  Adding Equipment to the
    Vehicle .....94
  Passenger Status Indicator ..... 135
  Readiness Light ..... 135
  Servicing Airbag-Equipped
    Vehicles .....94
  System Check .....84
Alarm
  Vehicle Security .....46
Alert
  Lane Change ..... 244
  Side Blind Zone (SBZA) ..... 244
All-Season Tires ..... 300
All-Terrain Tires ..... 301
Antilock Brake System (ABS) ..... 215
  Warning Light ..... 140
Appearance Care
  Exterior ..... 337
  Interior ..... 341
Armrest Storage ..... 117
Ashtrays ..... 129
Assistance Systems for Driving .... 240
Assistance Systems for Parking
  and Backing ..... 233

Automatic
Door Locks .....39
Forward Braking ..... 242
Headlamp System ..... 167
Level Control ..... 222
Transmission ..... 206
Transmission Fluid ..... 271
Automatic Transmission
Manual Mode ..... 209
Shift Lock Control Function
Check ..... 283
Axle, Front ..... 282
Axle, Rear ..... 282

## B

Battery
Exterior Lighting Battery
Saver ..... 171
Load Management ..... 171
Power Protection ..... 171
Battery - North America .....280, 329
Blade Replacement, Wiper ..... 284
Brake
Parking, Electric ..... 216
Pedal and Adjustable Throttle ... 198
System Warning Light ..... 138
Brakes ..... 278
Antilock ..... 215
Brakes (cont'd)
Assist ..... 217
Fluid ..... 279
Parking ..... 215
Braking ..... 184
Automatic Forward ..... 242
Break-In, New Vehicle ..... 198
Bulb Replacement
Headlamp Aiming ..... 287
Headlamps ..... 287
License Plate Lamps ..... 287
Buying New Tires ..... 314

## C

Cadillac Premium Care
Maintenance ..... 347
Calibration ..... 124
California
Fuel Requirements ..... 249
Perchlorate Materials
Requirements ..... 265
California Proposition
65 Warning .....264, 280, 329,
Back Cover
Canadian Vehicle Owners .....2
Capacities and Specifications ..... 359
Carbon Monoxide
Engine Exhaust ..... 205
Carbon Monoxide (cont'd)
Liftgate .....41
Winter Driving ..... 192
Cargo
Tie-Downs ..... 118
Caution, Danger, and Warning .....3
Center Console Storage ..... 118
Chains, Tire ..... 318
Charging
Wireless ..... 127
Charging System Light ..... 136
Check
Engine Light (Malfunction
Indicator) ..... 137
Child Restraints
Infants and Young Children .....98
Lower Anchors and Tethers
for Children ..... 103
Older Children .....96
Securing .....111, 113
Systems ..... 100
Child-View Mirror ..... 53
Cigarette Lighter ..... 129
Circuit Breakers ..... 288
Cleaning
Exterior Care ..... 337
Interior Care ..... 341

Climate Control Systems
Dual Automatic ..... 173
Rear ..... 178
Clock ..... 124
Cluster, Instrument ..... 130
Collision Damage Repair ..... 369
Compartments
Storage ..... 116
Compass ..... 124
Connections
OnStar ..... 379
Control
Traction and Electronic
Stability ..... 218
Control of a Vehicle ..... 184
Convenience Net ..... 118
Convex Mirrors ..... 49
Coolant
Engine Temperature Gauge ..... 134
Engine Temperature Warning
Light ..... 142
Cooling .....173, 178
Cooling System ..... 273
Cornering Lamps ..... 169
Courtesy Transportation
Program ..... 368
Cruise Control ..... 222
Light ..... 144
Cruise Control, Adaptive ..... 225
Cupholders ..... 117
Customer Assistance ..... 365
Offices ..... 364
Text Telephone (TTY) Users ..... 365
Customer Information
Service Publications Ordering
Information ..... 371
Customer Satisfaction
Procedure ..... 362

## D

Damage Repair, Collision ..... 369
Danger, Warning, and Caution .....3
Data Collection
Infotainment System ..... 375
OnStar ..... 375
Data Recorders, Event ..... 374
Daytime Running Lamps (DRL) ... 166
Defensive Driving ..... 184
Delayed Locking ..... 39
Diagnostics
OnStar ..... 381
Distracted Driving ..... 183
Dome Lamps ..... 169
Door
Ajar Light ..... 145
Delayed Locking .....39
Door (cont'd)
Locks .....37
Power Locks .....39
Drive Belt Routing, Engine ..... 361
Driver Assistance Systems ..... 233
Driver Information
Center (DIC) ..... 145
Driver Mode Control ..... 220
Driving
Assistance Systems ..... 240
Characteristics and
Towing Tips ..... 252
Defensive ..... 184
Drunk ..... 184
For Better Fuel Economy .....27
Hill and Mountain Roads ..... 191
If the Vehicle is Stuck ..... 193
Loss of Control ..... 186
Off-Road ..... 186
Off-Road Recovery ..... 185
Vehicle Load Limits ..... 193
Wet Roads ..... 190
Winter ..... 192
Winter Mode Light ..... 140
Dual Automatic Climate
Control System ..... 173

## E


Electric Parking Brake ..... 216
Electric Parking Brake Light ..... 139
Electrical Equipment, Add-On ..... 262
Electrical System
  Engine Compartment Fuse Block ..... 289
  Fuses and Circuit Breakers ..... 288
  Instrument Panel Fuse Block ..... 293, 296
  Overload ..... 288
  Rear Compartment Fuse Block ..... 298
Emergency
  OnStar ..... 377
Engine
  Air Cleaner/Filter ..... 272
  Check Light (Malfunction Indicator) ..... 137
  Compartment Overview ..... 267
  Coolant Temperature Gauge ..... 134
  Coolant Temperature Warning Light ..... 142
  Cooling System ..... 273
  Drive Belt Routing ..... 361
  Exhaust ..... 205
  Fan ..... 277
  Heater ..... 201
Engine (cont'd)
  Oil Life System ..... 270
  Oil Pressure Light ..... 143
  Overheating ..... 276
  Power Messages ..... 151
  Running While Parked ..... 206
  Starting ..... 200
Entry Lighting ..... 170
Equipment, Towing ..... 258
Event Data Recorders ..... 374
Exit Lighting ..... 170
Extended Parking ..... 205
Extender, Seat Belt ..... 82
Exterior Lamp Controls ..... 164
Exterior Lamps Off Reminder ..... 166
Exterior Lighting Battery Saver ..... 171


## F


Fan
  Engine ..... 277
Features
  Memory ..... 13
Filter,
  Engine Air Cleaner ..... 272
Flash-to-Pass ..... 166
Flashers, Hazard Warning ..... 168
Flat Tire ..... 318
  Changing ..... 320
Floor Mats ..... 344
Fluid
  Automatic Transmission ..... 271
  Brakes ..... 279
  Four-Wheel Drive Transfer Case ..... 211
  Washer ..... 278
Folding Mirrors ..... 50
Forward Automatic Braking ..... 242
Forward Collision Alert (FCA) System ..... 240
Four-Wheel Drive ..... 211, 281
Frequency Statement
  Radio ..... 372
Front Axle ..... 282
Front Seats
  Heated and Cooled ..... 67
Fuel ..... 248
  Additives ..... 249
  Economy Driving ..... 27
  Filling a Portable Fuel Container ..... 251
  Filling the Tank ..... 249
  Foreign Countries ..... 249
  Gauge ..... 133
  Low Fuel Warning Light ..... 143
  Management, Active ..... 205
  Requirements, California ..... 249

Full-Size Spare Tire ..... 328
Fuses
Engine Compartment Fuse Block ..... 289
Fuses and Circuit Breakers ..... 288
Instrument Panel Fuse Block ..... 293, 296
Rear Compartment Fuse Block ..... 298

**G**

Garage Door Opener ..... 160
Programming ..... 160
Gas Strut(s) ..... 285
Gauges
Engine Coolant Temperature .... 134
Fuel ..... 133
Odometer ..... 132
Speedometer ..... 132
Tachometer ..... 133
Trip Odometer ..... 133
Warning Lights and Indicators ..... 129
General Information
Service and Maintenance ..... 345
Towing ..... 252
Vehicle Care ..... 264
Glass Replacement ..... 285
Glove Box ..... 116
GM Mobility Reimbursement Program ..... 365

**H**

Hazard Warning Flashers ..... 168
Head Restraints ..... 59
Head-up Display ..... 147
Headlamps
Aiming ..... 287
Automatic ..... 167
Bulb Replacement ..... 287
Daytime Running Lamps (DRL) ..... 166
Flash-to-Pass ..... 166
High-Beam On Light ..... 144
High/Low Beam Changer ..... 166
Lamps On Reminder ..... 144
Heated
Rear Seats ..... 68
Steering Wheel ..... 121
Heated and Cooled Front Seats ..... 67
Heated Mirrors ..... 51
Heater
Engine ..... 201
Heating ..... 173, 178
High-Beam On Light ..... 144
High-Speed Operation ..... 307
Hill and Mountain Roads ..... 191
Hill Start Assist (HSA) ..... 218
Hood ..... 266
Horn ..... 121
How to Wear Seat Belts Properly ... 76
HVAC ..... 173, 178

**I**

Ignition Positions ..... 199
Immobilizer ..... 48
Indicator
Vehicle Ahead ..... 141
Infants and Young Children, Restraints ..... 98
Infotainment ..... 172
Infotainment System ..... 375
Instrument Cluster ..... 130
Instrument Panel
Storage Area ..... 116
Interior Rearview Mirrors ..... 51
Introduction ..... 2

**J**

Jump Starting - North America .... 329

**K**

Keyless Entry
Remote (RKE) System ..... 29
Keys ..... 28

## L


Labeling, Tire Sidewall ..... 301
Lamps
  Cornering ..... 169
  Daytime Running (DRL) ..... 166
  Dome ..... 169
  Exterior Controls ..... 164
  Exterior Lamps Off Reminder .... 166
  Exterior Lighting Battery Saver ..... 171
  License Plate ..... 287
  Malfunction Indicator (Check Engine) ..... 137
  On Reminder ..... 144
  Reading ..... 170
Lane Change Alert (LCA) ..... 244
Lane Departure Warning (LDW) ..... 246
Lane Keep Assist (LKA) ..... 246
Lane Keep Assist Light ..... 140
Lap-Shoulder Belt ..... 77
LATCH System Replacing Parts after a Crash .... 110
LATCH, Lower Anchors and Tethers for Children ..... 103
LED Lighting ..... 287
Level Control
  Automatic ..... 222
Liftgate ..... 41
Lighter, Cigarette ..... 129
Lighting
  Entry ..... 170
  Exit ..... 170
  Illumination Control ..... 169
  LED ..... 287
Lights
  Airbag Readiness ..... 135
  Antilock Brake System (ABS) Warning ..... 140
  Brake System Warning ..... 138
  Charging System ..... 136
  Check Engine (Malfunction Indicator) ..... 137
  Cruise Control ..... 144
  Door Ajar ..... 145
  Electric Parking Brake ..... 139
  Engine Coolant Temperature Warning ..... 142
  Engine Oil Pressure ..... 143
  Flash-to-Pass ..... 166
  High-Beam On ..... 144
  High/Low Beam Changer ..... 166
  Lane Keep Assist ..... 140
  Low Fuel Warning ..... 143
  Seat Belt Reminders ..... 134
  Security ..... 143
Lights (cont'd)
  Service Electric Parking Brake ... 139
  Sport Mode ..... 140
  StabiliTrak OFF ..... 141
  Tire Pressure ..... 142
  Tow/Haul Mode ..... 140
  Traction Control System (TCS)/StabiliTrak ..... 142
  Traction Off ..... 141
  Winter Driving Mode ..... 140
Locking Rear Axle ..... 222
Locks
  Automatic Door ..... 39
  Delayed Locking ..... 39
  Door ..... 37
  Lockout Protection ..... 40
  Power Door ..... 39
  Safety ..... 40
Loss of Control ..... 186
Low Fuel Warning Light ..... 143
Low-Profile Tires ..... 301
Lower Anchors and Tethers for Children (LATCH System) ..... 103
Lumbar Adjustment ..... 61
  Front Seats ..... 61


## M


Magnetic Ride Control ..... 221

Maintenance
Records ..... 357
Maintenance and Care
Additional ..... 352
Maintenance Schedule ..... 347
Recommended Fluids and
Lubricants ..... 355
Transfer Case ..... 211
Malfunction Indicator Lamp ..... 137
Manual Mode ..... 209
Massage ..... 66
Memory Features ..... 13
Memory Seats ..... 63
Messages
Engine Power ..... 151
Vehicle ..... 151
Vehicle Speed ..... 152
Mirror
Child-View ..... 53
Rear Camera ..... 52
Mirrors
Automatic Dimming Rearview ..... 51
Convex ..... 49
Folding ..... 50
Heated ..... 51
Power ..... 50
Tilt in Reverse ..... 51
Mirrors, Interior Rearview ..... 51
Mode ..... 220
Driver Control ..... 220
Monitor System, Tire Pressure ..... 307

## N

Navigation
OnStar ..... 378
Net, Convenience ..... 118
New Vehicle Break-In ..... 198

## O

Odometer ..... 132
Trip ..... 133
Off-Road ..... 186
Driving ..... 186
Recovery ..... 185
Oil
Engine ..... 268
Engine Oil Life System ..... 270
Pressure Light ..... 143
Older Children, Restraints ..... 96
Online Owner Center ..... 365
OnStar ..... 375
OnStar Additional Information ..... 382
OnStar Connections ..... 379
OnStar Diagnostics ..... 381
OnStar Emergency ..... 377
OnStar Navigation ..... 378
OnStar Overview ..... 376
OnStar Security ..... 378
Ordering
Service Publications ..... 371
Outlets
Power ..... 125
Overheating, Engine ..... 276

## P

Park
Shifting Into ..... 203
Shifting Out of ..... 204
Parking
Brake ..... 215
Brake and P (Park)
Mechanism Check ..... 284
Extended ..... 205
Over Things That Burn ..... 205
Parking Assist ..... 233
Parking or Backing
Assistance Systems ..... 233
Passenger Airbag Status
Indicator ..... 135
Passenger Compartment Air
Filter ..... 180
Passenger Sensing System ..... 90
Perchlorate Materials
Requirements, California ..... 265

Personalization
Vehicle ..... 152
Power
Door Locks .....39
Mirrors .....50
Outlets ..... 125
Protection, Battery ..... 171
Retained Accessory (RAP) ..... 203
Seat Adjustment .....60
Windows .....54
Power Assist Steps ..... 45
Pregnancy, Using Seat Belts ..... 82
Premium Care Maintenance
Cadillac ..... 347
Privacy
Vehicle Data Recording ..... 374
Program
Courtesy Transportation ..... 368
Proposition
65 Warning,
California .....264, 280, 329, Back Cover

## R

Radio Frequency Statement ..... 372
Reading Lamps ..... 170
Rear Axle ..... 282
Rear Axle (cont'd)
Locking ..... 222
Rear Camera Mirror ..... 52
Rear Climate Control System ..... 178
Rear Seats ..... 68
Heated .....68
Rear Storage ..... 117
Rear Vision Camera (RVC) ..... 233
Rear Window Washer/Wiper ..... 123
Rearview Mirrors
Automatic Dimming .....51
Reclining Seatbacks ..... 63
Recommended Fluids and
Lubricants ..... 355
Records
Maintenance ..... 357
Recreational Vehicle Towing ..... 333
Reimbursement Program, GM
Mobility ..... 365
Remote Keyless Entry (RKE)
System ..... 29
Remote Vehicle Start ..... 36
Replacement
Glass ..... 285
Replacement Parts
Airbags .....95
Maintenance ..... 356
Replacing Airbag System ..... 95
Replacing LATCH System Parts
after a Crash ..... 110
Replacing Seat Belt System
Parts after a Crash ..... 83
Reporting Safety Defects
Canadian Government ..... 373
General Motors ..... 373
U.S. Government ..... 372
Restraints
Where to Put ..... 102
Retained Accessory
Power (RAP) ..... 203
Reverse Tilt Mirrors ..... 51
Ride Control Systems
Magnetic ..... 221
Roads
Driving, Wet ..... 190
Roadside Service ..... 366
Roof
Sunroof .....56
Roof Rack System ..... 119
Rotation, Tires ..... 312
Routing, Engine Drive Belt ..... 361
Running the Vehicle While
Parked ..... 206

## S


Safety Defects Reporting
  Canadian Government ..... 373
  General Motors ..... 373
  U.S. Government ..... 372
Safety Locks ..... 40
Safety System Check ..... 83
Scheduling Appointments ..... 368
Seat Belts ..... 75
  Care .....83
  Extender .....82
  How to Wear Seat Belts
    Properly .....76
  Lap-Shoulder Belt .....77
  Reminders ..... 134
  Replacing after a Crash .....83
  Use During Pregnancy .....82
Seats
  Head Restraints .....59
  Heated, Rear .....68
  Lumbar Adjustment, Front .....61
  Memory .....63
  Power Adjustment, Front .....60
  Rear .....68
  Reclining Seatbacks .....63
  Second Row .....69
  Third Row Seat .....73
Second Row Seats ..... 69
Securing Child Restraints .....111, 113
Security
  Light ..... 143
  OnStar ..... 378
  Vehicle .....46
  Vehicle Alarm .....46
Service
  Accessories and
    Modifications ..... 265
  Doing Your Own Work ..... 265
  Maintenance Records ..... 357
  Maintenance, General
    Information ..... 345
  Parts Identification Label ..... 358
  Publications Ordering
    Information ..... 371
  Scheduling Appointments ..... 368
Service Electric Parking Brake
  Light ..... 139
Services
  Special Application ..... 352
Servicing the Airbag ..... 94
Shift Lock Control Function
  Check, Automatic
  Transmission ..... 283
Shifting
  Into Park ..... 203
  Out of Park ..... 204
Side Blind Zone Alert (SBZA) ..... 244
Signals, Turn and Lane-Change .... 168
Special Application Services ..... 352
Specifications and Capacities ..... 359
Speedometer ..... 132
Sport Mode Light ..... 140
StabiliTrak
  OFF Light ..... 141
Start Assist, Hill ..... 218
Start Vehicle, Remote ..... 36
Starter Switch Check ..... 283
Starting the Engine ..... 200
Steering ..... 185
  Heated Wheel ..... 121
  Wheel Adjustment ..... 121
  Wheel Controls ..... 121
Steps
  Power Assist .....45
Storage
  Rear ..... 117
Storage Areas
  Armrest ..... 117
  Center Console ..... 118
  Convenience Net ..... 118
  Glove Box ..... 116
  Instrument Panel ..... 116
  Roof Rack System ..... 119
  Sunglasses ..... 117

Storage Compartments ..... 116
Struts
  Gas ..... 285
Stuck Vehicle ..... 193
Sun Visors ..... 56
Sunglass Storage ..... 117
Sunroof ..... 56
Symbols .....3
System
  Forward Collision Alert (FCA) .... 240
  Infotainment ..... 172, 375
  Roof Rack ..... 119
Systems
  Driver Assistance ..... 233

**T**

Tachometer ..... 133
Text Telephone (TTY) Users ..... 365
Theft-Deterrent Systems ..... 48
  Immobilizer .....48
Third-Row Seats ..... 73
Throttle, Adjustable ..... 198
Time ..... 124
Tires ..... 299
  All-Season ..... 300
  All-Terrain ..... 301
  Buying New Tires ..... 314
  Chains ..... 318
Tires (cont'd)
  Changing ..... 320
  Designations ..... 302
  Different Size ..... 315
  Full-Size Spare ..... 328
  If a Tire Goes Flat ..... 318
  Inspection ..... 312
  Low Profile ..... 301
  Pressure ..... 305, 307
  Pressure Light ..... 142
  Pressure Monitor Operation ..... 308
  Pressure Monitor System ..... 307
  Rotation ..... 312
  Sidewall Labeling ..... 301
  Terminology and Definitions .... 303
  Uniform Tire Quality Grading .... 316
  Wheel Alignment and Tire
    Balance ..... 317
  Wheel Replacement ..... 317
  When It Is Time for New
    Tires ..... 313
  Winter ..... 300
Tow/Haul Mode ..... 210
Tow/Haul Mode Light ..... 140
Towing
  Driving Characteristics ..... 252
  Equipment ..... 258
  General Information ..... 252
Towing (cont'd)
  Recreational Vehicle ..... 333
  Trailer ..... 255
  Trailer Sway Control (TSC) ..... 260
  Vehicle ..... 332
Traction
  Control System (TCS)/
    StabiliTrak Light ..... 142
  Off Light ..... 141
Traction Control/Electronic
  Stability Control ..... 218
Trailer
  Sway Control (TSC) ..... 260
  Towing ..... 255
Transfer Case ..... 211
Transmission
  Automatic ..... 206
  Fluid, Automatic ..... 271
Transportation Program,
  Courtesy ..... 368
Trip Odometer ..... 133
Turn and Lane-Change Signals .... 168

**U**

Uniform Tire Quality Grading ..... 316
Universal Remote System ..... 160
  Operation ..... 163

Universal Remote System (cont'd)
Programming ..... 160
Using This Manual .....2

## V

Vehicle
Alarm System .....46
Canadian Owners ..... 2
Control ..... 184
Identification Number (VIN) ..... 358
Load Limits ..... 193
Messages ..... 151
Personalization ..... 152
Remote Start .....36
Security .....46
Speed Messages ..... 152
Towing ..... 332
Vehicle Ahead Indicator ..... 141
Vehicle Care
Tire Pressure ..... 305
Vehicle Data Recording and
Privacy ..... 374
Ventilation, Air ..... 179
Visors ..... 56

## W

Warning
Brake System Light ..... 138
Caution and Danger ..... 3
Warning (cont'd)
Lane Departure (LDW) ..... 246
Warning Lights, Gauges, and
Indicators ..... 129
Warnings
Hazard Flashers ..... 168
Washer Fluid ..... 278
Wheels
Alignment and Tire Balance ..... 317
Different Size ..... 315
Replacement ..... 317
When It Is Time for New Tires .... 313
Where to Put the Restraint ..... 102
Wi-Fi ..... 379
Windows ..... 54
Power .....54
Windshield
Replacement ..... 285
Wiper/Washer ..... 121
Winter
Driving ..... 192
Winter Driving Mode Light ..... 140
Winter Tires ..... 300
Wiper Blade Replacement ..... 284
Wipers
Rear Washer ..... 123
Wireless Charging ..... 127

# WARNING

Operating, servicing and maintaining a passenger vehicle or off-road vehicle can expose you to chemicals including engine exhaust, carbon monoxide, phthalates, and lead, which are known to the State of California to cause cancer and birth defects or other reproductive harm. To minimize exposure, avoid breathing exhaust, do not idle engine except as necessary, service your vehicle in a well-ventilated area and wear gloves or wash your hands frequently when servicing your vehicle. For more information go to www.P65Warnings.ca.gov/passenger-vehicle.

**U.S. Only**

84016525 B