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**2015**

**Encore**



# 2015 Buick Encore Owner Manual

<b>In Brief</b> .....	1-1	<b>Storage</b> .....	4-1	<b>Climate Controls</b> .....	8-1
Instrument Panel .....	1-2	Storage Compartments .....	4-1	Climate Control Systems .....	8-1
Initial Drive Information .....	1-4	Additional Storage Features .....	4-3	Air Vents .....	8-6
Vehicle Features .....	1-15	Roof Rack System .....	4-5	Maintenance .....	8-6
Performance and Maintenance .....	1-18	<b>Instruments and Controls</b> .....	5-1	<b>Driving and Operating</b> .....	9-1
<b>Keys, Doors, and Windows</b> .....	2-1	Controls .....	5-2	Driving Information .....	9-2
Keys and Locks .....	2-1	Warning Lights, Gauges, and Indicators .....	5-7	Starting and Operating .....	9-14
Doors .....	2-9	Information Displays .....	5-22	Engine Exhaust .....	9-22
Vehicle Security .....	2-11	Vehicle Messages .....	5-25	Automatic Transmission .....	9-23
Exterior Mirrors .....	2-13	Vehicle Personalization .....	5-30	Drive Systems .....	9-26
Interior Mirrors .....	2-14	<b>Lighting</b> .....	6-1	Brakes .....	9-26
Windows .....	2-15	Exterior Lighting .....	6-1	Ride Control Systems .....	9-28
Roof .....	2-17	Interior Lighting .....	6-5	Cruise Control .....	9-30
<b>Seats and Restraints</b> .....	3-1	Lighting Features .....	6-6	Driver Assistance Systems .....	9-33
Head Restraints .....	3-2	<b>Infotainment System</b> .....	7-1	Fuel .....	9-42
Front Seats .....	3-3	Introduction .....	7-1	Towing .....	9-46
Rear Seats .....	3-10			Conversions and Add-Ons .....	9-46
Safety Belts .....	3-14			<b>Vehicle Care</b> .....	10-1
Airbag System .....	3-23			General Information .....	10-2
Child Restraints .....	3-36			Vehicle Checks .....	10-3
				Headlamp Aiming .....	10-23
				Bulb Replacement .....	10-24
				Electrical System .....	10-27
				Wheels and Tires .....	10-35

# 2015 Buick Encore Owner Manual

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Jump Starting .....	10-62	<b>OnStar</b> .....	14-1
Towing .....	10-65	OnStar Overview .....	14-1
Appearance Care .....	10-67	OnStar Services .....	14-2
<b>Service and Maintenance</b> ...	11-1	OnStar Additional Information .....	14-6
General Information .....	11-1	<b>Index</b> .....	i-1
Maintenance Schedule .....	11-2		
Special Application Services .....	11-8		
Additional Maintenance and Care .....	11-8		
Recommended Fluids, Lubricants, and Parts .....	11-12		
Maintenance Records .....	11-14		
<b>Technical Data</b> .....	12-1		
Vehicle Identification .....	12-1		
Vehicle Data .....	12-2		
<b>Customer Information</b> .....	13-1		
Customer Information .....	13-1		
Reporting Safety Defects .....	13-12		
Vehicle Data Recording and Privacy .....	13-14		



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For vehicles first sold in Canada, substitute the name "General Motors of Canada Limited" for Buick 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

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Part No. 23118886 A First Printing

specifications, features/applications that may not be available in your region, or changes subsequent to the printing of this owner 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

### Propriétaires Canadiens

A French language manual can be obtained from your dealer, at [www.helminc.com](http://www.helminc.com), or from:

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

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

## Using this Manual

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

## About Driving the Vehicle

As with other vehicles of this type, failure to operate this vehicle correctly may result in loss of control or an accident. Be sure to read the driving guidelines in this manual in the section called "Driving and Operating" and specifically *Driver Behavior on page 9-2*, *Driving Environment on page 9-2*, and *Vehicle Design on page 9-2*.

## iv Introduction

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### Danger, Warnings, and Cautions

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



**Danger**

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.

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

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

### Vehicle Symbol Chart

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

 : Airbag Readiness Light


 : Air Conditioning

 : Antilock Brake System (ABS)

 : Audio Steering Wheel Controls or OnStar® (if equipped)

 : Brake System Warning Light

 : Charging System

 : Cruise Control


 : Engine Coolant Temperature


 : Exterior Lamps

 : Fog Lamps

 : Fuel Gauge

 : Fuses

 : Headlamp High/Low-Beam Changer

 : LATCH System Child Restraints

 : Malfunction Indicator Lamp

 : Oil Pressure

 : Power

 : Remote Vehicle Start

 : Safety Belt Reminders

 : Tire Pressure Monitor

 : Traction Control/StabiliTrak®

 : Windshield Washer Fluid



## In Brief

### Instrument Panel

Instrument Panel ..... 1-2

### Initial Drive Information

Remote Keyless Entry (RKE)  
System ..... 1-4  
Remote Vehicle Start ..... 1-4  
Door Locks ..... 1-5  
Liftgate ..... 1-5  
Windows ..... 1-6  
Seat Adjustment ..... 1-6  
Memory Features ..... 1-7  
Second Row Seats ..... 1-8  
Heated Seats ..... 1-8  
Head Restraint Adjustment .... 1-8  
Safety Belts ..... 1-9  
Passenger Sensing System ... 1-9

Mirror Adjustment ..... 1-9  
Steering Wheel  
Adjustment ..... 1-10  
Interior Lighting ..... 1-10  
Exterior Lighting ..... 1-11  
Windshield Wiper/Washer .... 1-12  
Climate Controls ..... 1-13  
Transmission ..... 1-14

### Vehicle Features

Infotainment System ..... 1-15  
Steering Wheel Controls .... 1-15  
Cruise Control ..... 1-15  
Driver Information  
Center (DIC) ..... 1-16  
Forward Collision Alert (FCA)  
System ..... 1-16  
Lane Departure  
Warning (LDW) ..... 1-16

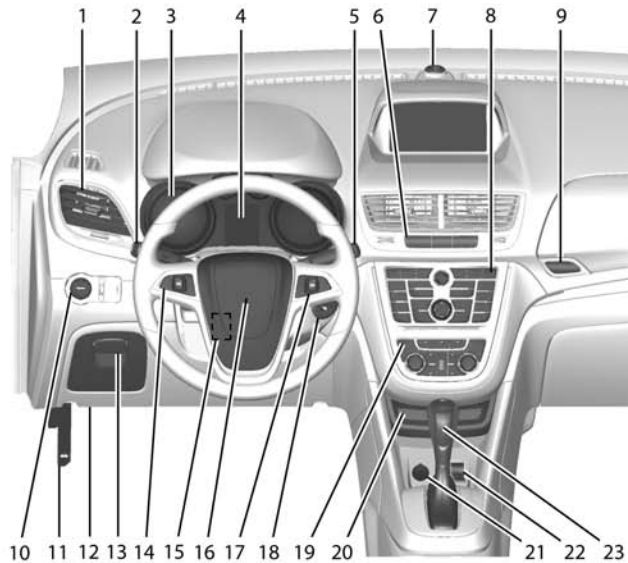
Side Blind Zone  
Alert (SBZA) ..... 1-16  
Rear Vision  
Camera (RVC) ..... 1-17  
Rear Cross Traffic Alert  
(RCTA) System ..... 1-17  
Parking Assist ..... 1-17  
Power Outlets ..... 1-17  
Sunroof ..... 1-17

### Performance and Maintenance

Traction Control/Electronic  
Stability Control ..... 1-18  
Tire Pressure Monitor ..... 1-18  
Engine Oil Life System ..... 1-19  
Driving for Better Fuel  
Economy ..... 1-19  
Roadside Assistance  
Program ..... 1-20  
OnStar® ..... 1-20



## Instrument Panel



1. *Air Vents on page 8-6.*
2. *Turn Signal Lever. See Turn and Lane-Change Signals on page 6-4.*  
*Headlamp High/Low-Beam Changer on page 6-2.*
3. *Instrument Cluster on page 5-8.*
4. *Driver Information Center (DIC) Display. See Driver Information Center (DIC) on page 5-22.*
5. *Windshield Wiper/Washer on page 5-2.*  
*Rear Window Wiper/Washer on page 5-4.*
6. *Traction Control/Electronic Stability Control on page 9-28.*  
*Hazard Warning Flashers on page 6-3.*  
*Passenger Airbag Status Indicator. See Passenger Sensing System on page 3-30.*
7. *Light Sensor. See Automatic Headlamp System on page 6-3.*
8. *Infotainment on page 7-1.*
9. *Instrument Panel Storage on page 4-1.*
10. *Exterior Lamp Controls on page 6-1.*  
*Instrument Panel Illumination Control on page 6-5.*  
*Front Fog Lamps on page 6-4 (If Equipped).*
11. *Hood Release. See Hood on page 10-4.*
12. *Data Link Connector (DLC) (Out of View). See Malfunction Indicator Lamp on page 5-13.*
13. *Instrument Panel Storage on page 4-1.*
14. *Cruise Control on page 9-30.*  
*Forward Collision Alert (FCA) System on page 9-33 (If Equipped).*
15. *Steering Wheel Adjustment on page 5-2.*
16. *Horn on page 5-2.*
17. *Steering Wheel Controls on page 5-2.*
18. *Ignition Positions on page 9-14.*
19. *Climate Control Systems on page 8-1 or Dual Automatic Climate Control System on page 8-3 (If Equipped).*
20. *Parking Assist on page 9-34 (If Equipped).*  
*Lane Departure Warning (LDW) on page 9-40 (If Equipped).*
21. *Power Outlets on page 5-5.*
22. *Auxiliary Input Jack. See the Infotainment Manual.*
23. *Shift Lever. See Automatic Transmission on page 9-23.*


## Initial Drive Information


### Remote Keyless Entry (RKE) System

The RKE transmitter may work up to 30 m (98 ft) away from the vehicle.




Press the key release button to extend the key blade. The key can be used for the ignition and all locks.

 : Press to unlock the driver door, all doors, or, if equipped, the locking fuel door. The hazard warning flashers may flash.

 : Press to lock the doors, or, if equipped, the locking fuel door.

Lock and unlock feedback can be personalized. See *Vehicle Personalization* on page 5-30.



 : If equipped, press and hold briefly to initiate vehicle locator. Press and hold for at least three seconds to sound the panic alarm. Press again to cancel the panic alarm.

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

### Remote Vehicle Start

For vehicles with this feature, the engine can be started from outside the vehicle.

### Starting the Vehicle


1. Aim the RKE transmitter at the vehicle.
2. Press and release .
3. Immediately after completing Step 2, press and hold  for several seconds or until the turn signal lamps flash.

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

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

### Canceling a Remote Start

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



- Aim the RKE transmitter at the vehicle and press and hold  until the parking lamps turn off.

- Turn on the hazard warning flashers.
- Turn the vehicle on and then off.

See *Remote Vehicle Start* on page 2-5.

## Door Locks

To lock or unlock a door manually:

- From the inside, to lock the door, use the lock knob on the top of the door panel.
- From the outside, turn the key toward the front or rear of the vehicle, or press  or  on the Remote Keyless Entry (RKE) transmitter.

## Power Door Locks







 : Press to unlock the doors.

 : Press to lock the doors.

See *Power Door Locks* on page 2-7.

## Liftgate

To lock or unlock the liftgate from inside, press  or  on the power door locks. See *Power Door Locks* on page 2-7.

To lock or unlock the liftgate from outside, press  or  on the Remote Keyless Entry (RKE) transmitter. See *Remote Keyless Entry (RKE) System Operation* on page 2-3.



To open the liftgate, press the touch pad in the pull cup under the license plate and lift manually.

See *Liftgate* on page 2-9.

## Windows

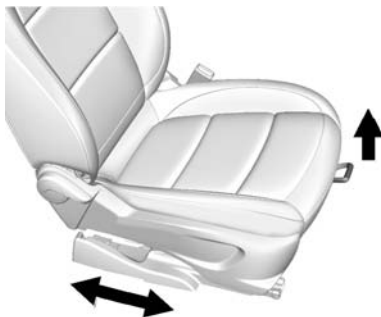


Press the switch to lower the window. Pull up on the front edge of the switch to raise it. See *Power Windows* on page 2-15.

The switches work when the vehicle is in ON/RUN or ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* on page 9-19.

## Seat Adjustment

### Manual Seats



To adjust a manual seat:

1. Pull the handle at the front of the seat.
2. Slide the seat to the desired position and release the handle.
3. Try to move the seat back and forth to be sure it is locked in place.

See *Seat Adjustment* on page 3-3.

### Power Seats



To adjust a power 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 entire seat by moving the rear of the control up or down.

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

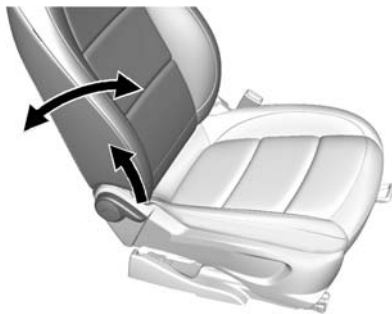
## Lumbar Adjustment



If available, press the front or rear of the switch to increase or decrease lumbar support. Release the switch when the desired level of support is reached.

See *Lumbar Adjustment* on page 3-4.

## Reclining Seatbacks



### Manual Seat Shown, Power Seat Similar

To recline the seatback:

1. Lift the lever.  
If necessary, move the safety belt out of the way to access the lever.
2. Move the seatback to the desired position, 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 an upright position:

1. Lift the lever fully without applying pressure to the seatback, and the seatback returns to the upright position.
2. Push and pull on the seatback to make sure it is locked.

See *Reclining Seatbacks* on page 3-5.

## Memory Features



## 1-8 In Brief

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If available, the MEM, “1,” and “2” buttons on the outboard side of the driver seat are used to manually save and recall the driver seat and outside mirror positions. These manually stored positions are referred to as Button Memory positions.

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

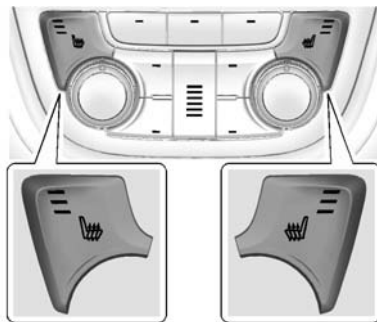
See *Memory Seats on page 3-6* and *Vehicle Personalization on page 5-30*.

### Second Row Seats



The rear seatbacks can be folded down to increase cargo space.

See *Rear Seats on page 3-10*.

### Heated Seats



If equipped, the controls are on the climate control panel. The engine must be running to operate the heated seats.

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

Press the control once for the highest setting. With each press of the control, the heated seat will change to the next lower setting,

and then the off setting. Three lights indicate the highest setting and one light the lowest.

See *Heated Front Seats on page 3-8*.

### Head Restraint Adjustment

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

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

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

## Safety Belts



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

- *Safety Belts on page 3-14.*
- *How to Wear Safety Belts Properly on page 3-16.*
- *Lap-Shoulder Belt on page 3-17.*
- *Lower Anchors and Tethers for Children (LATCH System) on page 3-44.*

## Passenger Sensing System



United States



Canada and Mexico

The passenger sensing system turns off the front outboard passenger frontal airbag and knee airbag (if equipped) under certain conditions. No other airbag is affected by the passenger sensing system. See *Passenger Sensing System on page 3-30* for important information.

The passenger airbag status indicator will be visible on the instrument panel when the vehicle is started. See *Passenger Airbag Status Indicator on page 5-12*.

## Mirror Adjustment

### Exterior Mirrors




To adjust the mirrors:

1. Turn the selector switch to L (Left) or R (Right) to choose the driver or passenger mirror.



## 1-10 In Brief

2. Move the control to adjust the mirror.
3. Turn the selector switch to  to deselect the mirror.

### Interior Mirror

#### Adjustment

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

#### Manual Rearview Mirror

If equipped with a manual rearview mirror, push the tab forward for daytime use and pull it for nighttime use to avoid glare from the headlamps from behind. See *Manual Rearview Mirror on page 2-14*.

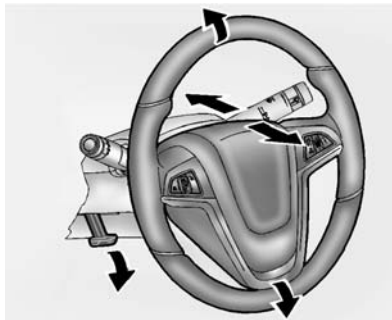
#### Automatic Dimming Rearview Mirror

If equipped with an automatic dimming rearview mirror, the mirror will automatically reduce the glare

from the headlamps from behind. The dimming feature comes on when the vehicle is started.

See *Automatic Dimming Rearview Mirror on page 2-15*.

### Steering Wheel Adjustment



To adjust the steering wheel:

1. Pull the lever down.
2. Move the steering wheel up or down.

3. Pull or push the steering wheel closer or away from you.
4. Lift the lever up to lock the steering wheel in place.


Do not adjust the steering wheel while driving.


### Interior Lighting


#### Front and Rear Dome Lamps

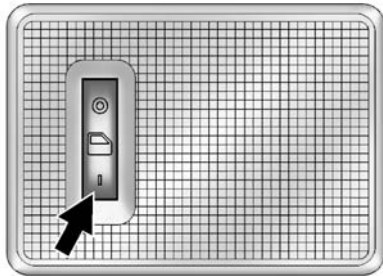


The front dome lamp controls are in the overhead console.


 : Press to turn the lamps off, even when a door is open.


 : When the button is returned to the middle position, the lamps turn on automatically when a door is opened.

 : Press to turn on the dome lamps.



The rear dome lamp controls are in the headliner above the rear seats.

 : Press to turn the lamps off, even when a door is open.



 : When the button is returned to the middle position, the lamps turn on automatically when a door is opened.

| : Press to turn on the dome lamps.

### Reading Lamps

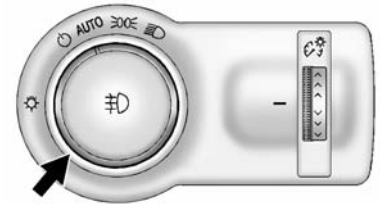


The front reading lamps are in the overhead console.

 or  : Press to turn each lamp on or off.


For more information about interior lighting, see *Instrument Panel Illumination Control* on page 6-5 or *Courtesy Lamps* on page 6-5.

### Exterior Lighting



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


There are four positions:


 : Briefly turn to this position to turn the automatic lamp control off or on again.


**AUTO:** Turns the headlamps on automatically at normal brightness, together with the parking lamps,

## 1-12 In Brief

taillamps, license plate lamps, sidemarker lamps, and instrument panel lights.

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

: Turns on the headlamps, parking lamps, taillamps, license plate lamps, sidemarker lamps, and instrument panel lights. A warning chime sounds if the driver door is opened when the ignition switch is off and the headlamps are on.

: If equipped with fog lamps, press to turn the lamps on or off.

See:

- *Exterior Lamp Controls on page 6-1*
- *Daytime Running Lamps (DRL) on page 6-2*
- *Front Fog Lamps on page 6-4*

### Windshield Wiper/Washer




The windshield wiper/washer lever is located on the right side of the steering column.

Move the lever to one of the following positions:

**HI:** Use for fast wipes.


**LO:** Use for slow wipes.



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

**OFF:** Use to turn the wipers off.

**1X:** For a single wipe, briefly move the wiper lever down. For several wipes, hold the wiper lever down.

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


### Rear Window Wiper/Washer

If equipped with the rear wiper/washer, the controls are on the end of the windshield wiper lever.

**ON:** Press the upper portion of the button for continuous rear window wipes.

**OFF:** The rear wiper turns off when the button is returned to the middle position.

**INT (Intermittent Rear Wipes):** Press the lower portion of the button to set a delay between wipes.

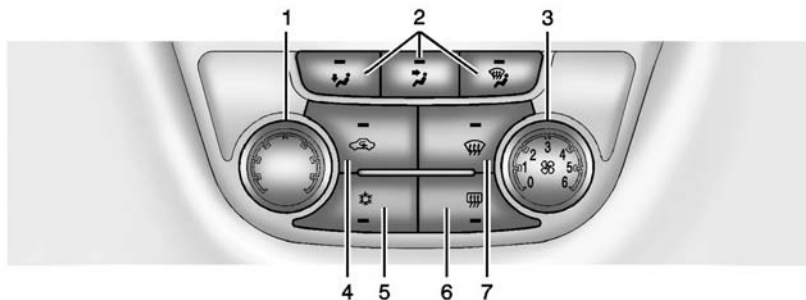
↑  **REAR (Rear Washer):** Push the windshield wiper lever forward to spray washer fluid on the rear window. The lever returns to its starting position when released.

See *Windshield Wiper/Washer* on page 5-2 and *Rear Window Wiper/Washer* on page 5-4 (If Equipped).

## Climate Controls

The heating, cooling, defrosting, and ventilation for the vehicle can be controlled with these systems.

### Climate Control System



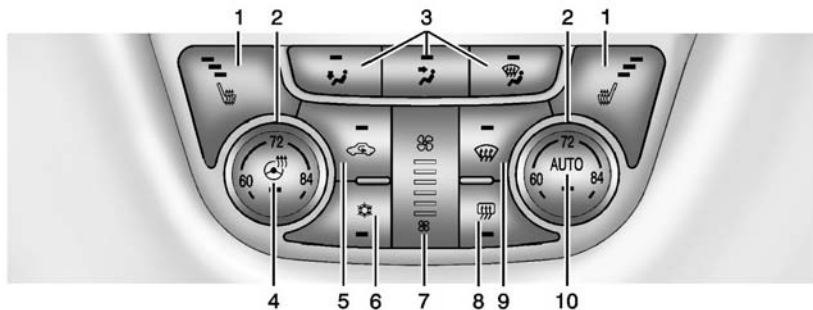
1. Temperature Control
2. Air Delivery Modes
3. Fan Control
4. Recirculation
5. Air Conditioning

6. Rear Window Defogger
7. Defrost

See *Climate Control Systems* on page 8-1 (If Equipped).

## 1-14 In Brief

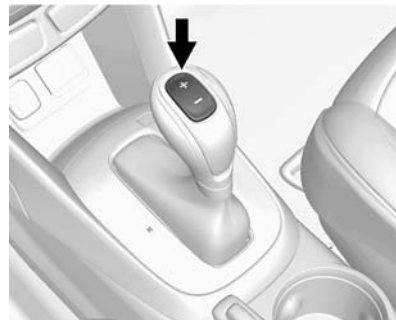
### Dual Automatic Climate Control System



1. Driver and Passenger Heated Seats (If Equipped)
  2. Driver and Passenger Temperature Controls
  3. Air Delivery Modes
  4. Heated Steering Wheel (If Equipped)
  5. Recirculation
  6. Air Conditioning
  7. Fan Controls
  8. Rear Window Defogger
  9. Defrost
  10. AUTO (Automatic Operation)
- See *Dual Automatic Climate Control System* on page 8-3 (If Equipped).

### Transmission

#### Driver Shift Control (DSC)



DSC allows you to shift an automatic transmission similar to a manual transmission. To use the DSC feature:

1. Move the shift lever from D (Drive) rearward to M (Manual Mode).

2. Press the + (plus) end of the button on the top of the shift lever to upshift, or push the - (minus) end of the button to downshift.

See *Manual Mode* on page 9-25.

## Vehicle Features

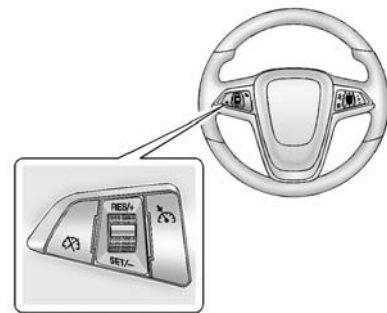
### Infotainment System


See the infotainment manual for information on the radio, audio players, phone, navigation system, 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 cruise control system on or off. A white indicator comes in the instrument cluster when cruise is turned on.

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

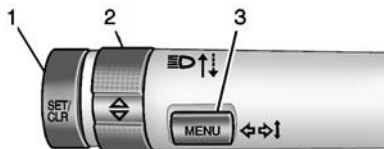
**SET/-**: Move the thumbwheel down briefly to set the speed and activate cruise control. If cruise control is already active, use to decrease speed.

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

See *Cruise Control* on page 9-30.

### Driver Information Center (DIC)

The DIC display is in the instrument cluster. It shows the status of many vehicle systems. The controls for the DIC are on the turn signal lever.




1. **SET/CLR**: Press to set or clear the menu item displayed.

2. **△ ▽**: Turn the band to scroll through the menu items.
3. **MENU**: Press to display the DIC menus. This button is also used to return to or exit the last screen displayed on the DIC.


See *Driver Information Center (DIC)* on page 5-22.

### 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. When approaching a vehicle ahead too quickly, FCA provides a visual alert and rapidly beeps.

See *Forward Collision Alert (FCA) System* on page 9-33.

### Lane Departure Warning (LDW)

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

See *Lane Departure Warning (LDW)* on page 9-40.

### Side Blind Zone Alert (SBZA)

If equipped, SBZA will detect vehicles in the next lane over in the vehicle's side blind zone area. When this happens, the SBZA display will light up in the corresponding outside side mirror and will flash if the turn signal is on.

See *Side Blind Zone Alert (SBZA)* on page 9-36.

## Rear Vision Camera (RVC)

If equipped, RVC displays a view of the area behind the vehicle, on the infotainment system display, when the vehicle is shifted into R (Reverse).

See *Rear Vision Camera (RVC)* on page 9-38.

## Rear Cross Traffic Alert (RCTA) System

If equipped, the RCTA system uses a triangle with an arrow displayed on the RVC screen to warn of traffic behind your vehicle that may cross your vehicle's path while in R (Reverse). In addition, beeps will sound.

See "Rear Cross Traffic Alert (RCTA)" under *Rear Vision Camera (RVC)* on page 9-38.

## Parking Assist

If available, Front and Rear Parking Assist (FRPA) uses sensors on the front and rear bumpers to detect objects while parking the vehicle. It operates at speeds less than 8 km/h (5 mph). FRPA uses audio beeps to provide distance and system information.

Keep the sensors on the vehicle's front and rear bumpers clean to ensure proper operation.

See *Parking Assist* on page 9-34.

## Power Outlets

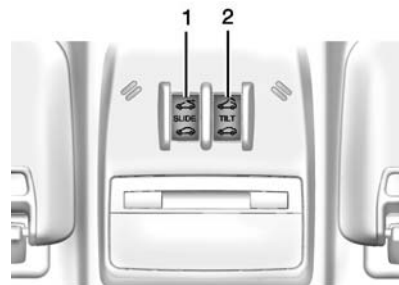
The accessory power outlet can be used to plug in electrical equipment, such as a cell phone or MP3 player.

There is one accessory power outlet on the center stack below the climate control. This outlet is powered when the key is in ON/RUN or ACC/ACCESSORY, or until the driver door is opened within

10 minutes of turning off the vehicle. See *Retained Accessory Power (RAP)* on page 9-19.

See *Power Outlets* on page 5-5.

## Sunroof



If equipped, the sunroof only operates when the ignition is turned to ON/RUN or Retained Accessory Power (RAP) is active.

**Open/Close:** Press and hold the front or rear of switch (1) to open or close the sunroof.



**Vent:** Press and hold the front or rear of switch (2) to vent or close the sunroof.

Manually close the sunshade.

The sunroof will not operate if the vehicle has an electrical failure. If problems persist, see your dealer.







See *Sunroof on page 2-17*.


## Performance and Maintenance

### Traction Control/ Electronic Stability Control

The traction control system limits wheel spin. The system is on when the vehicle is started.

The StabiliTrak system assists with directional control of the vehicle in difficult driving conditions. The system is on when the vehicle is started.

- To turn off traction control, press and release  on the center stack.  illuminates in the instrument cluster.
- Press and release  again to turn traction control back on.
- To turn off both Traction Control and StabiliTrak, press and hold  until  and  illuminate in the instrument cluster.

- Press  again to turn on both systems.

See *Traction Control/Electronic Stability Control on page 9-28*.

### Tire Pressure Monitor

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



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

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

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

See *Tire Pressure Monitor System* on page 10-44.

## Engine Oil Life System

The engine oil life system calculates engine oil life based on vehicle use and displays the CHANGE ENGINE OIL SOON DIC message when it is necessary to change the engine oil and filter.

Remember, the oil life display must be reset after each oil change. It will not reset itself. Also, be careful not to reset the oil life display accidentally at any time other than

when the oil has just been changed. It cannot be reset accurately until the next oil change.

### Resetting the Oil Life System

1. Press the MENU button to show Remaining Oil Life on the display. This display shows an estimate of the oil's remaining useful life. If 99% is displayed, that means that 99% of the current oil life remains.
2. To reset the engine oil life system, press the SET/CLR button while the oil life display is active. After a few seconds, there will be a single chime and the oil life will be reset to 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.

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

## Driving for Better Fuel Economy

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

- Avoid fast starts and accelerate smoothly.
- Brake gradually and avoid abrupt stops.
- Avoid idling the engine for long periods of time.
- When road and weather conditions are appropriate, use cruise control.
- Always follow posted speed limits or drive more slowly when conditions require.
- Keep vehicle tires properly inflated.
- Combine several trips into a single trip.

- Replace the vehicle's tires with the same TPC Spec number molded into the tire's sidewall near the size.
- Follow recommended scheduled maintenance.

### Roadside Assistance Program

U.S.: 1-800-252-1112

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

Canada: 1-800-268-6800

New Buick owners are automatically enrolled in the Roadside Assistance Program.

See *Roadside Assistance Program* on page 13-5.

### OnStar®

This vehicle may be equipped with a comprehensive, in-vehicle system that can connect to a live OnStar Advisor for Emergency, Security, Navigation, Connection, and

Diagnostic Services. OnStar services may require a paid subscription. See *OnStar Overview* on page 14-1.

# Keys, Doors, and Windows

## Keys and Locks

- Keys ..... 2-1
- Remote Keyless Entry (RKE) System ..... 2-2
- Remote Keyless Entry (RKE) System Operation ..... 2-3
- Remote Vehicle Start ..... 2-5
- Door Locks ..... 2-7
- Power Door Locks ..... 2-7
- Delayed Locking ..... 2-8
- Automatic Door Locks ..... 2-8
- Lockout Protection ..... 2-8
- Safety Locks ..... 2-8

## Doors

- Liftgate ..... 2-9

## Vehicle Security

- Vehicle Security ..... 2-11
- Vehicle Alarm System ..... 2-11
- Immobilizer ..... 2-12
- Immobilizer Operation ..... 2-12

## Exterior Mirrors

- Convex Mirrors ..... 2-13
- Power Mirrors ..... 2-13
- Folding Mirrors ..... 2-14
- Heated Mirrors ..... 2-14
- Reverse Tilt Mirrors ..... 2-14

## Interior Mirrors

- Interior Rearview Mirrors ..... 2-14
- Manual Rearview Mirror ..... 2-14
- Automatic Dimming Rearview Mirror ..... 2-15

## Windows

- Windows ..... 2-15
- Power Windows ..... 2-15
- Sun Visors ..... 2-17

## Roof

- Sunroof ..... 2-17

# Keys and Locks

## Keys

 **Warning**

Leaving children in a vehicle with the ignition key 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 keys in the ignition, and children or others could be caught in the path of a closing window. Do not leave children in a vehicle with the ignition key.

## 2-2 Keys, Doors, and Windows



The key that is part of the Remote Keyless Entry (RKE) transmitter can be used for the ignition and all locks.



Press the key release button on the RKE transmitter to extend the key blade. Press the button and the key blade to retract the key.

The key code is stamped on the key number plate and can be used to make new keys at any dealer. Store this information in a safe place outside the vehicle.

If it becomes difficult to turn the key in the ignition, inspect the key blade for debris. Periodically clean with a brush or pick.

See your dealer if a new key is needed.

If locked out of the vehicle, see *Roadside Assistance Program* on page 13-5.

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

### Remote Keyless Entry (RKE) System

See *Radio Frequency Statement* on page 13-12.

If there is a decrease in the RKE operating range:

- Check the distance. The transmitter may be too far from the vehicle.
- Check the location. Other vehicles or objects may be blocking the signal.
- Check the transmitter's battery. See "Battery Replacement" later in this section.

- If the transmitter is still not working correctly, see your dealer or a qualified technician for service.

## Remote Keyless Entry (RKE) System Operation

The RKE transmitter may work up to 30 m (98 ft) away from the vehicle.

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



The following may be available:

**🔒 (Lock):** Press to lock all doors or, if equipped, the locking fuel door.

The hazard warning flashers may flash and/or the horn may sound to indicate locking. See “Remote Lock/Unlock/Start” under *Vehicle Personalization on page 5-30*.

If the driver door is open when **🔒** is pressed and Open Door Anti Lock Out is enabled through vehicle personalization, all doors will lock and then the driver door will unlock. See “Remote Lock/Unlock/Start” under *Vehicle Personalization on page 5-30*.

Pressing **🔒** may also arm the theft-deterrent system. See *Vehicle Alarm System on page 2-11*.

**🔓 (Unlock):** Press to unlock the driver door, all doors or, if equipped, the locking fuel door. See “Remote Lock/Unlock/Start” under *Vehicle Personalization on page 5-30*.

The hazard warning flashers will flash to indicate unlocking. See “Remote Lock/Unlock/Start” under *Vehicle Personalization on page 5-30*.

Pressing **🔒** will disarm the theft-deterrent system. See *Vehicle Alarm System on page 2-11*.

**🚨 (Vehicle Locator/Panic Alarm):** If equipped, press and hold briefly to initiate vehicle locator. The exterior lamps flash and the horn chirps three times.

Press and hold **🚨** for at least three seconds to sound the panic alarm. The horn sounds and the turn signals flash for 30 seconds, or until **🚨** is pressed again or the key is placed in the ignition and turned to ACC/ACCESSORY or ON/RUN.

**🔁 (Remote Vehicle Start):** If equipped, press **🔒** and then press and hold **🔁** for several seconds to start the engine from outside the

## 2-4 Keys, Doors, and Windows

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vehicle using the RKE transmitter. See *Remote Vehicle Start* on page 2-5.

The buttons on the keys are disabled when there is a key in the ignition.

### Programming Transmitters to the Vehicle

Only RKE transmitters programmed to this vehicle will work. If a transmitter is lost or stolen, a replacement can be purchased and programmed through your dealer. When the replacement transmitter is programmed to this vehicle, all remaining transmitters must also be reprogrammed. Any lost or stolen transmitters will no longer work once the new transmitter is programmed.

### Programming with a Recognized Transmitter

To program a new key:

1. Insert the original, already programmed key in the ignition and turn to the key to the ON/RUN position.
2. Turn the key to LOCK/OFF, and remove the key.
3. Insert the new key to be programmed and turn it to the ON/RUN position within five seconds.

The security light will turn off once the key has been programmed.

4. Repeat Steps 1–3 if additional keys are to be programmed.

If a key is lost or damaged, see your dealer to have a new key made.

### Programming without a Recognized Transmitter

U.S. owners are permitted to program a new key to their vehicle when a recognized key is not

available. Canadian regulations require that Canadian owners see their dealer for programming new keys when a recognized key is not available.

If there are no currently recognized keys available, follow this procedure to program the first key.

This procedure will take approximately 30 minutes to complete for the first key. The vehicle must be off and all of the keys you wish to program must be with you.

1. Insert the new vehicle key into the ignition.
2. Turn to ON/RUN. The security light will come on.
3. Wait 10 minutes until the security light turns off.
4. Turn the ignition to LOCK/OFF.
5. Repeat Steps 2–4 two more times. After the third time, turn to ON/RUN; the key is learned and all previously known keys will no longer work with the vehicle.

Remaining keys can be learned by following the procedure in “Programming with a Recognized Transmitter.”

### Battery Replacement

The battery is not rechargeable. To replace the battery:

#### Caution


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



1. Extend the key blade and open the battery cover on the back of the transmitter by prying with a finger.
2. Remove the used battery by pushing on the battery and sliding it toward the key blade.
3. Insert the new battery, positive side facing up. Push the battery down until it is held in place. Replace with a CR2032 or equivalent battery.
4. Snap the battery cover back on to the transmitter.

### Remote Vehicle Start

The vehicle may have this feature that allows you to start the engine from outside the vehicle.

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

The climate control system will use the previous settings during a remote start. The rear defog may come on during remote start based on cold ambient conditions. The rear fog indicator light does not come on during remote start. If the vehicle has heated seats, they may come on during a remote start. See *Heated Front Seats* on page 3-8.

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





## 2-6 Keys, Doors, and Windows

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

### Starting the Vehicle

To start the engine using the remote start feature:

1. Aim the RKE transmitter at the vehicle.
2. Press and release .
3. Immediately after completing Step 2, press and hold  for several seconds or until the turn signal lamps flash. The turn signal lamps flashing confirms the request to remote start the vehicle has been received.

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

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

Start the vehicle before driving.

### Extending Engine Run Time

The engine run time can also be extended by another 10 minutes, if during the first 10 minutes Steps 1–3 are repeated while the engine is still running. This provides a total of 20 minutes.

The remote start can only be extended once.


When the remote start is extended, the second 10-minute period is added on to the first 10 minutes for a total of 20 minutes.

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

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

### Canceling a Remote Start

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

- Aim the RKE transmitter at the vehicle and press and hold  until the parking lamps turn off.
- Turn on the hazard warning flashers.
- Turn the vehicle on and then off.

### Conditions in Which Remote Start Will Not Work

The remote vehicle start feature will not operate if:

- The key is in the ignition.
- The hood is not closed.
- The hazard warning flashers are on.
- The malfunction indicator lamp is on.
- The engine coolant temperature is too high.
- The oil pressure is low.

- Two remote vehicle starts, or a single remote start with an extension, have already been used.
- The vehicle is not in P (Park).

## Door Locks

### Warning

Unlocked doors can be dangerous.



- Passengers, especially children, can easily open the doors and fall out of a moving vehicle. When a door is locked, the handle will not open it. The chance of being thrown out of the vehicle in a crash is increased if the doors are not locked. So, all passengers should wear safety belts properly and the doors should be locked whenever the vehicle is driven.

(Continued)

### Warning (Continued)

- 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.
- 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 a door manually:

- From the inside, to lock the door, use the lock knob on the top of the door panel.
- From the outside, turn the key toward the front or rear of the vehicle, or press  or  on the Remote Keyless Entry (RKE) transmitter.

## Power Door Locks




 (Unlock): Press to unlock the doors.

 (Lock): Press to lock the doors.



Power door locks features can be programmed. See *Vehicle Personalization* on page 5-30.

### Delayed Locking

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

When  is pressed on the power door lock switch while the door 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 on page 5-30*.

### Automatic Door Locks


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

To unlock the doors:

- Press  on a door.
- Shift the transmission into P (Park).

Automatic door unlocking can be programmed through the Driver Information Center (DIC). See *Vehicle Personalization on page 5-30*.

### Lockout Protection

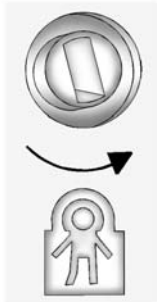
When locking is requested with the driver door open and the key in the ignition, all the doors will lock and then the driver door will unlock. This can be manually overridden by pressing and holding  on the power door lock switch.

If Open Door Anti Lockout is turned on, the vehicle is off with the driver door open, and door locking is requested, all the doors will lock and only the driver door will unlock. The Open Door Anti Lockout feature can be turned on or off using the vehicle personalization menus. See *Vehicle Personalization on page 5-30*.

### Safety Locks

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

## Manual Safety Locks



If equipped, the safety lock is located on the inside edge of the rear doors. To use the safety lock:

1. Insert the key into the safety lock slot and turn it so the slot is in the horizontal position.
2. Close the door.
3. Do the same for the other rear door.

To open a rear door when the safety lock is on:

1. Unlock the door by activating the inside handle, by using the power door lock switch, or by using the Remote Keyless Entry (RKE) transmitter.
2. Open the door from the outside.

To cancel the safety lock:

1. Unlock the door and open it from the outside.
2. Insert the key into the safety lock slot and turn it so the slot is in the vertical position. Do the same for the other door.

## Doors

### Liftgate

#### **Warning**

Exhaust gases can enter the vehicle if it is driven with the liftgate, hatch/trunk open, or with any objects that pass through the seal between the body and the hatch/trunk 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 hatch/trunk open:

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

(Continued)

## 2-10 Keys, Doors, and Windows



### Warning (Continued)



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

For more information about carbon monoxide, see *Engine Exhaust* on page 9-22.

### ⚠ Caution

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

To lock or unlock the liftgate from inside, press  or  on the power door locks. See *Power Door Locks* on page 2-7.

To lock or unlock the liftgate from outside, press  or  on the RKE transmitter. See *Remote Keyless Entry (RKE) System Operation* on page 2-3.



To open the liftgate, press the touch pad in the pull cup below the license plate and lift manually.

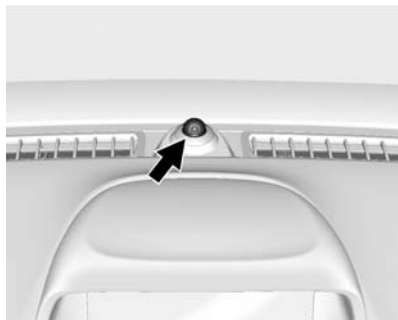
To close the liftgate, push from the center to ensure that it fully latches.

## Vehicle Security

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

## Vehicle Alarm System

If equipped with an anti-theft alarm system, the indicator light, on the instrument panel near the windshield, shows the status of the system.



An 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 two ways:
  - Use the RKE transmitter.
  - 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 indicating the alarm system is operating. 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 any door or the hood 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 any door or the 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.

## 2-12 Keys, Doors, and Windows

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### Disarming the Alarm System

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

- Press  on the RKE transmitter.
- Start the vehicle.


Avoid setting off the alarm by accident by locking the vehicle after all occupants have left the vehicle and all doors are closed.

To avoid setting off the alarm by accident:

- Lock the vehicle after all occupants have exited.
- Always unlock the vehicle with the RKE transmitter.

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 and the horn chirps and the lights flash three times, an attempted break-in has occurred while the system was armed.

### Immobilizer

See *Radio Frequency Statement on page 13-12.*

### 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 key is removed from the ignition.

The system is automatically disarmed when the vehicle is started with the correct key. The key uses a transponder that matches an immobilizer control unit in the vehicle and automatically disarms

the system. Only an authorized key starts the vehicle. The vehicle may not start if the key is damaged.



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

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

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

If the engine still does not start, and the key appears to be undamaged or the light continues to stay on, try another ignition key. If the engine does not start with the other key, the vehicle needs service. If the vehicle

does start, the first key may be damaged. See your dealer who can service the theft-deterrent system and have a new key made.

Do not leave the key 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. Turn the selector switch to L (Left) or R (Right) to choose the driver or passenger mirror.
2. Move the control to adjust the mirror.
3. Turn the selector switch to  to deselect the mirror.



### Folding Mirrors

#### Manual Folding Mirrors

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

### Heated Mirrors

This vehicle has heated mirrors:

 (Rear Window Defogger):

Press to heat the mirrors.

See “Rear Window Defogger” under *Climate Control Systems* on page 8-1.

### 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* on page 5-30.

### Interior Mirrors

#### Interior Rearview Mirrors

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

If equipped with OnStar, the vehicle may have three control buttons at the bottom of the mirror. See your dealer for more information about OnStar and how to subscribe to it. See *OnStar Overview* on page 14-1.

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

#### Manual Rearview Mirror

If equipped with a manual rearview mirror, push the tab forward for daytime use and pull it for nighttime use to avoid glare from the headlights from behind.

## Automatic Dimming Rearview Mirror

If equipped, automatic dimming reduces the glare of headlamps from behind. The dimming feature comes on when the vehicle is started.

## 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 keys in a vehicle with children. When there are children in the rear seat, use the window lockout button to prevent operation of the windows. See *Keys on page 2-1*.

## 2-16 Keys, Doors, and Windows

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The driver door also has switches that control the passenger and rear windows. The switches work when the vehicle is in ON/RUN or ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* on page 9-19.

Press the switch to lower the window. Pull up on the front edge of the switch to raise it.

### Express-Up/Express-Down Windows

If equipped, a window with the express-up/down feature can be raised or lowered without holding the switch. Press or pull the window switch fully and release it to activate the express feature. The express mode can be canceled by pressing or pulling the switch.

### Programming the Power Windows

If the battery on the vehicle has been recharged, disconnected, or replaced, windows with the express-up feature need to be reprogrammed for this feature to work. To program the window:

1. Close all doors with the ignition in ON/RUN or ACC/ACCESSORY, or when RAP is active. See *Retained Accessory Power (RAP)* on page 9-19.
2. Press and continue to hold the window switch until the window is fully open.

3. Pull up and hold the window switch to close the window. Continue to hold it briefly after the window is fully closed.
4. Repeat for each window that has the express-up feature.


### Anti-Pinch Feature


The anti-pinch feature is on windows with the express-up feature. If an object is in the way of the window as it is express-closing, or in certain weather conditions like severe icing, the window will stop and open to a factory preset position. The window functions normally once the obstruction is removed.

## Rear Window Lockout

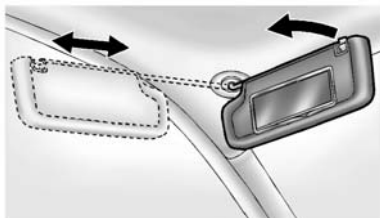


The rear window lockout feature prevents the rear passenger windows from operating, except from the driver position.

Press  to activate the rear window lockout switch. The indicator light comes on when activated.

Press  again to deactivate the lockout switch.

## Sun Visors



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

If equipped, there is a lighted mirror on the sun visor. Lift the cover to open.

## Roof

### Sunroof



If equipped, the sunroof only operates when the ignition is turned to ON/RUN or Retained Accessory Power (RAP) is active.

**Open/Close:** Press and hold the front or rear of switch (1) to open or close the sunroof.

**Vent:** Press and hold the front or rear of switch (2) to vent or close the sunroof.

## 2-18 Keys, Doors, and Windows

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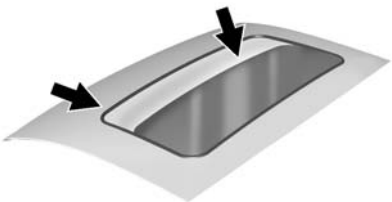
**Express-Open/Express-Close:** To express-open or express-close the sunroof, fully press and release the front or rear of switch (1) until the sunroof reaches the desired position.

Manually close the sunshade.

The sunroof will not operate if the vehicle has an electrical failure.

### Anti-Pinch Feature

If an object is in the path of the sunroof when it is closing, the anti-pinch feature will detect the object and stop the sunroof from closing at the point of the obstruction. The sunroof then returns to the full-open position.



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 ..... 3-2

### Front Seats

Seat Adjustment ..... 3-3  
 Power Seat Adjustment ..... 3-4  
 Lumbar Adjustment ..... 3-4  
 Reclining Seatbacks ..... 3-5  
 Memory Seats ..... 3-6  
 Front Seat Armrest ..... 3-8  
 Heated Front Seats ..... 3-8  
 Folding Seatback ..... 3-9

### Rear Seats

Rear Seats ..... 3-10  
 Rear Seat Armrest ..... 3-14

### Safety Belts

Safety Belts ..... 3-14  
 How to Wear Safety Belts Properly ..... 3-16

Lap-Shoulder Belt ..... 3-17  
 Safety Belt Use During Pregnancy ..... 3-21  
 Safety Belt Extender ..... 3-22  
 Safety System Check ..... 3-22  
 Safety Belt Care ..... 3-22  
 Replacing Safety Belt System Parts after a Crash ..... 3-22

### Airbag System

Airbag System ..... 3-23  
 Where Are the Airbags? .... 3-25  
 When Should an Airbag Inflate? ..... 3-27  
 What Makes an Airbag Inflate? ..... 3-28  
 How Does an Airbag Restrain? ..... 3-28  
 What Will You See after an Airbag Inflates? ..... 3-28  
 Passenger Sensing System ..... 3-30  
 Servicing the Airbag-Equipped Vehicle ..... 3-34

Adding Equipment to the Airbag-Equipped Vehicle ... 3-34  
 Airbag System Check ..... 3-35  
 Replacing Airbag System Parts after a Crash ..... 3-36

### Child Restraints

Older Children ..... 3-36  
 Infants and Young Children ..... 3-38  
 Child Restraint Systems .... 3-41  
 Where to Put the Restraint ... 3-43  
 Lower Anchors and Tethers for Children (LATCH System) ..... 3-44  
 Replacing LATCH System Parts After a Crash ..... 3-50  
 Securing Child Restraints (Rear Seat) ..... 3-50  
 Securing Child Restraints (Front Passenger Seat) .... 3-52

## 3-2 Seats and Restraints

### Head Restraints

#### Warning

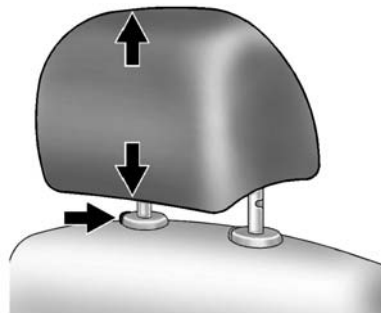
With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.

#### Front Seats

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



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 chances of a neck injury in a crash.



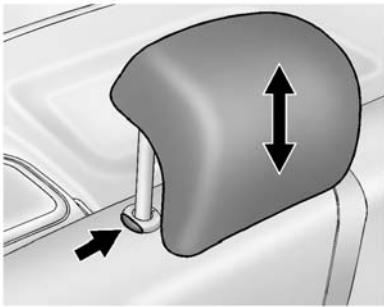
The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure that it is locked in place.

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.

## Rear Seats

The rear seats have head restraints in the outboard seating positions that can be lowered 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.

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

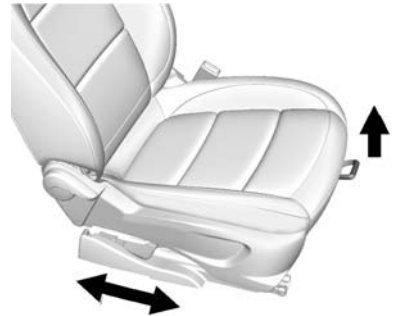
Rear outboard head restraints are not removable.

## Front Seats

### 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.





## 3-4 Seats and Restraints

---

To adjust a manual seat:

1. Pull the handle at the front of the seat.
2. Slide the seat to the desired position and release the handle.
3. Try to move the seat back and forth to be sure it is locked in place.

### Power Seat Adjustment



To adjust a power 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 entire seat by moving the rear of the control up or down.

To adjust the seatback, see *Reclining Seatbacks* on page 3-5.

To adjust the lumbar support, see *Lumbar Adjustment* on page 3-4.

### Lumbar Adjustment

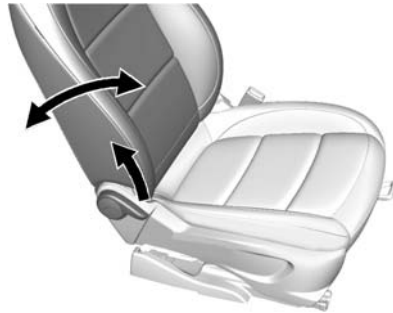


If available, press the front or rear of the switch to increase or decrease lumbar support. Release the switch when the desired level of support is reached.

## Reclining Seatbacks

### 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.



### Manual Seat Shown, Power Seat Similar

To recline the seatback:

1. Lift the lever.  
If necessary, move the safety belt out of the way to access the lever.
2. Move the seatback to the desired position, 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 an upright position:

1. Lift the lever fully without applying pressure to the seatback, and the seatback returns to the upright position.
2. Push and pull on the seatback to make sure it is locked.

### Warning

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

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

(Continued)

## 3-6 Seats and Restraints

### Warning (Continued)

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

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



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

### Memory Seats



If available, the MEM, "1," and "2" buttons on the outboard side of the driver seat are used to manually save and recall the driver seat and outside mirror positions. These manually stored positions are referred to as Button Memory positions.

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

### Storing Button Memory Positions

To save positions into Button Memory:

1. Adjust the driver seat and outside mirrors to the desired driving positions.
2. Press and hold MEM (Memory) and "1" at the same time until a beep sounds.
3. Repeat Steps 1 and 2 for a second driver using "2."

### Recalling Button Memory Positions



To recall the Button Memory positions, press and hold “1” or “2.” The driver seat and outside mirrors move to the positions stored to those buttons when pressed. Releasing “1” or “2” before the stored positions are reached stops the recall.

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

### Recalling RKE Memory Positions


The RKE memory feature can recall the driver seat and outside mirrors to previously stored RKE Memory positions when entering the vehicle.

Every time the ignition is placed in OFF, the positions of the driver seat and outside mirrors are automatically stored to the RKE transmitter that was used to start the vehicle. These positions and settings are called RKE Memory positions and may be different than the previously mentioned Button Memory positions saved to the “1” or “2” buttons.

To recall, press  on the RKE transmitter and open the driver door. If the driver door is already open, press  on the RKE transmitter to activate the recall. The driver seat and outside mirrors will move to the previously saved RKE Memory positions.

This feature is turned on or off using the vehicle personalization menu. See *Vehicle Personalization on page 5-30*.

To stop recall movement, press one of the memory, power mirror, or power seat controls.

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

### Easy Exit Driver Seat

This feature moves the seat rearward allowing the driver more room to exit the vehicle.

To activate, place the ignition in OFF and open the driver door. If the driver door is already open, placing the ignition in OFF will activate the recall.

This feature is turned on or off using the vehicle personalization menu. See *Vehicle Personalization on page 5-30*.

## 3-8 Seats and Restraints

To stop recall movement, press one of the memory or power seat controls.

If something has blocked the driver seat while recalling the exit position, the recall may stop. Remove the obstruction; then press and hold the power seat control rearward for two seconds. Try recalling the exit position again. If the exit position is still not recalling, see your dealer for service.

### Front Seat Armrest

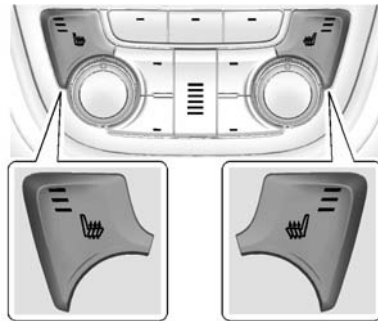


There is an armrest on the inboard side of the driver seat. To raise or lower the armrest, push up or pull down on the armrest.



### Heated Front Seats

#### Warning

If you cannot feel temperature change or pain to the skin, the seat heater may cause burns. To reduce the risk of burns, people with such a condition should use care when using the seat heater, especially for long periods of time. Do not place anything on the seat that insulates against heat, such as a blanket, cushion, cover, or similar item. This may cause the seat heater to overheat. An overheated seat heater may cause a burn or may damage the seat.



If equipped, the controls are on the climate control panel. The engine must be running to operate the heated seats.

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

Press the control once for the highest setting. With each press of the control, the heated seat will change to the next lower setting, and then the off setting. Three lights indicate the highest setting and one light the lowest.

The passenger seat may take longer to heat up.

**Remote Start Heated Seats**

When it is cold outside, the heated seats can be turned on automatically during a remote vehicle start. The heated seats will be canceled when the ignition is turned on. Press the heated seat controls to use the heated seats after the vehicle is started.


The heated seat indicator lights on the control do not turn on during a remote start.


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

The heated seats will not turn on during a remote start unless the heated seat feature is enabled in the vehicle personalization menu. See *Remote Vehicle Start* on page 2-5 and *Vehicle Personalization* on page 5-30.

**Folding Seatback**

The front passenger seatback folds flat.

 <b>Warning</b>
<p>If you fold the seatback forward to carry longer objects, such as skis, be sure any such cargo is not near an airbag. In a crash, an inflating airbag might force that object toward a person. This could cause severe injury or even death. Secure objects away from the area in which an airbag would inflate. For more information, see <i>Where Are the Airbags?</i> on page 3-25 and <i>Vehicle Load Limits</i> on page 9-10.</p>

 <b>Warning</b>
<p>Things you put on this seatback can strike and injure people in a sudden stop or turn, or in a crash. Remove or secure all items before driving.</p>

To fold the seatback:

1. Lower the head restraint all the way. See *Head Restraints* on page 3-2.
2. Move the seat as far back as possible. See *Seat Adjustment* on page 3-3.

## 3-10 Seats and Restraints



3. Lift the lever fully and fold the seatback forward.

If necessary, move the safety belt out of the way to access the lever.

4. Continue lowering the seatback until it is completely folded and locks in place.

To raise the seatback:

1. Lift the lever fully to unlock the seatback. Then, raise the seatback and push it rearward until it re-engages.

2. Push and pull on the seatback to make sure it is locked in place.

### **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.

## Rear Seats

### Folding the Seatback

Either side of the seatback can be folded down for more cargo space. Fold a seatback only when the vehicle is not moving.

### **Caution**

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

### **Caution**

Folding the rear seatback prior to tilting the seat cushion forward may damage the rear seat.

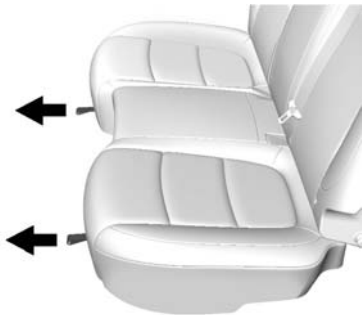
(Continued)

**Caution (Continued)**

Always tilt the rear seat cushion forward before folding the seatback.

To fold a seatback down:

1. Make sure the floor area in front of the rear seats is clear.
2. Fully lower the head restraint.  
See *Head Restraints on page 3-2*.
3. Slide the front seats forward and place the front seatbacks in the upright position. See *Seat Adjustment on page 3-3* and *Reclining Seatbacks on page 3-5*.



4. Pull the strap on the front edge of the rear seat cushion to release the cushion. Tilt the seat cushion forward toward the front of the vehicle.

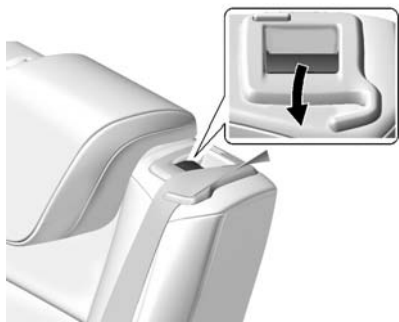
The seat cushion must be tilted forward before the seatback is folded down. Otherwise, the seatback will not fold down properly.

**Rear Seat with Retainer Hook on the Seatback**

5. Make sure the safety belt is in the retainer hook on top of the seatback, if equipped.



## 3-12 Seats and Restraints



### Rear Seat with Retainer Hook on the Seatback

6. Reach under the belt and pull the lever on top of the seatback to unlock the seatback.

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



7. Fold the seatback forward and down.



### Safety Belt Clip on Side Trim

8. Place the outboard safety belt in the safety belt clip (if equipped) on the side trim of the vehicle.
9. Repeat Steps 1–8 for the other seatback and seat cushion, if desired.

### Raising the Seatback

**Warning**

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

**Warning**

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

To return the rear seatback to the normal seating position:



**Safety Belt Clip on Side Trim**

1. Remove the outboard safety belt from the safety belt clip (if equipped) on the side trim of the vehicle.

2. Lift the seatback and push it rearward to lock it in place. A tab near the seatback lever retracts when the seatback is locked in place.

Make sure the safety belts are not pinched by the seatback locking mechanism.

The center rear safety belt may lock when you raise the seatback. If this happens, let the belt go back all the way and start again. If the safety belt is still locked, try again after pulling the seat cushion out.

3. Push and pull the top of the seatback to be sure it is locked into position.

## 3-14 Seats and Restraints

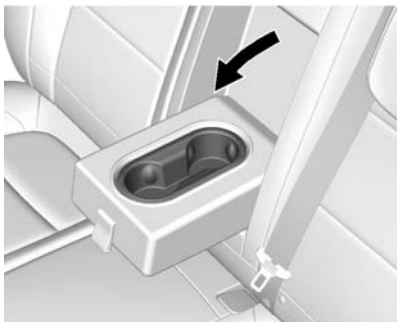
- Return the seat cushion to its original position and push down on the front part of the seat cushion until it latches.

Make sure the safety belts and safety belt buckles are not trapped under the seat cushion and are properly positioned for use.

- Repeat Steps 1–4 for the other seatback and seat cushion, if necessary.

If additional cargo space is not needed, the seatbacks should be kept in the upright, locked position.

### Rear Seat Armrest



The rear seat has an armrest in the center of the seatback. Lower the armrest to access the cupholders.

To fold, lift the armrest up and push it rearward until it is flush with the seatback.

### Safety Belts

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

#### **Warning**

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

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

(Continued)

**Warning (Continued)**

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

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

This vehicle has indicators as a reminder to buckle the safety belts. See *Safety Belt Reminders* on page 5-11.

**Why Safety Belts Work**



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

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

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

**Questions and Answers About Safety Belts**

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

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

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

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

## 3-16 Seats and Restraints

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

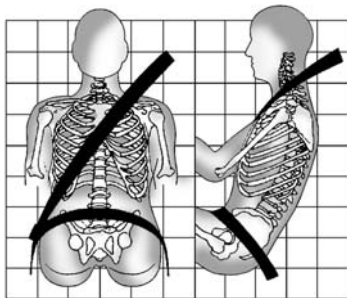
### How to Wear Safety Belts Properly

This section is only for people of adult size.

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

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

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



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

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

#### **Warning**

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

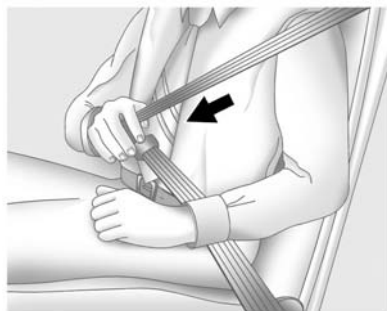
- Never allow the lap or shoulder belt to become loose or twisted.
- Never wear the shoulder belt under both arms or behind your back.
- Never route the lap or shoulder belt over an armrest.

## Lap-Shoulder Belt

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

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

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

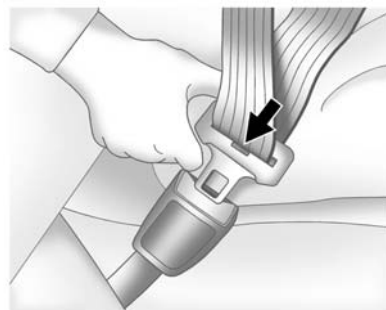


2. Pick up the latch plate and pull the belt across you. Do not let it get twisted.

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

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

The rear center safety belt can only be withdrawn from the retractor if the seatback is in the upright locked position.



3. Push the latch plate into the buckle until it clicks.
4. Pull up on the latch plate to make sure it is secure. If the belt is not long enough, see *Safety Belt Extender* on page 3-22.  
Position the release button on the buckle so that the safety belt could be quickly unbuckled if necessary.
5. If equipped with a shoulder belt height adjuster, move it to the height that is right for you. See “Shoulder Belt Height Adjuster”

## 3-18 Seats and Restraints

later in this section for instructions on use and important safety information.



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

It may be necessary to pull the stitching on the safety belt through the latch plate to fully tighten the lap belt on smaller occupants.



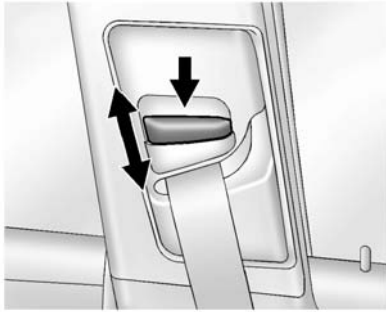
To unlatch the belt, push the button on the buckle. The belt should return to its stowed position. Slide the latch plate up the safety belt webbing when the safety belt is not in use.

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

### Shoulder Belt Height Adjuster

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

Adjust the height so the shoulder portion of the belt is on the shoulder but not falling off of it. The belt should be close to but not contacting the neck. Improper shoulder belt height adjustment could reduce the effectiveness of the safety belt in a crash. See *How to Wear Safety Belts Properly* on page 3-16.



To move the shoulder belt height adjuster down, push down on the release button and move the height adjuster to the desired position. You can move the height 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.

### Safety Belt Pretensioners

This vehicle has safety belt pretensioners for the front outboard occupants. Although the safety belt pretensioners cannot be seen, they are part of the safety belt assembly. They can help tighten the safety belts during the early stages of a moderate to severe frontal, near frontal, or rear crash if the threshold conditions for pretensioner activation are met. Safety belt pretensioners can also help tighten the safety 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 safety belt system will need to be replaced. See *Replacing Safety Belt System Parts after a Crash* on page 3-22.

### Rear Safety Belt Comfort Guides

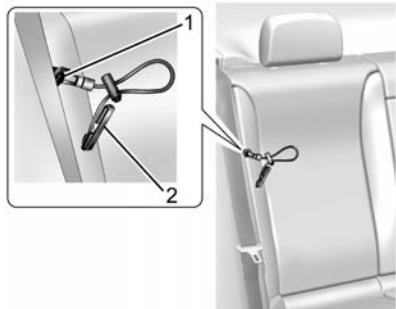
Rear safety belt comfort guides may provide added safety belt comfort for older children who have outgrown booster seats and for some adults. When installed on a shoulder belt, the comfort guide positions the shoulder belt away from the neck and head.

Safety belt comfort guides are available through your dealer. Instructions are included with the guide.

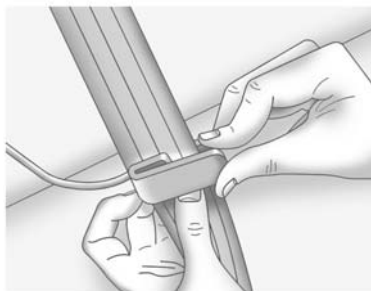


## 3-20 Seats and Restraints

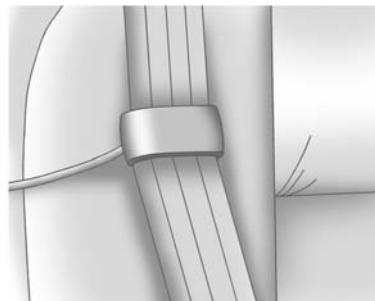
To install:



1. Locate the anchor loop (1) on the rear outboard seatback.
2. Attach the adjustable comfort guide (2) to the anchor loop by threading the hook through the loop.



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



4. 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.
5. The elastic cord on the comfort guide is adjustable. Make it longer or shorter by squeezing both ends of the plastic adjuster and pulling on the elastic cord or the guide.
6. Adjust the guide so the shoulder portion of the belt is on the shoulder and not falling off of it. The belt should be close to, but

not contacting, the neck. Improper comfort guide adjustment could reduce the effectiveness of the safety belt in a crash.

**Warning**

A safety belt that is not properly worn may not provide the protection needed in a crash. The person wearing the belt could be seriously injured. The shoulder belt should go over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces.



7. Buckle and position the safety belt as described previously in this section. Make sure that the shoulder belt crosses the shoulder.

To remove and store the comfort guide, squeeze the belt edges together so that the safety belt can be removed from the guide. Unhook the guide from the loop on the seat. Store the guide in a convenient place like the glove box for the next time it is needed.

## Safety Belt Use During Pregnancy

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



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

## 3-22 Seats and Restraints

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

### Safety Belt Extender

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

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

### Safety System Check

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

Make sure the safety belt reminder light is working. See *Safety Belt Reminders on page 5-11*.

Keep safety belts clean and dry. See *Safety Belt Care on page 3-22*.

### Safety Belt Care

Keep belts clean and dry.

#### Warning

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

### Replacing Safety Belt System Parts after a Crash

#### Warning

A crash can damage the safety belt system in the vehicle. A damaged safety belt system may not properly protect the person using it, resulting in serious injury or even death in a crash. To help make sure the safety belt systems are working properly after a crash, have them

(Continued)

**Warning (Continued)**

inspected and any necessary replacements made as soon as possible.

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

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

Have the safety belt pretensioners checked if the vehicle has been in a crash, or if the airbag readiness light stays on after you start the vehicle or while you are driving. See *Airbag Readiness Light* on page 5-12.

**Airbag System**

The vehicle has the following airbags:

- A frontal airbag for the driver.
- A frontal airbag for the 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 the passenger seated directly behind the driver.
- A roof-rail airbag for the front outboard passenger and the passenger seated directly behind the front outboard passenger.

The vehicle may have the following airbags:

- A knee airbag for the driver.
- A knee airbag for the front outboard passenger.

- Seat-mounted side impact airbags for the second row outboard passengers.

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

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

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

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

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

Airbags are designed to supplement the protection provided by safety belts. Even though today's airbags are also designed to help reduce

## 3-24 Seats and Restraints

the risk of injury from the force of an inflating bag, all airbags must inflate very quickly to do their job.

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

### **Warning**

You can be severely injured or killed in a crash if you are not wearing your safety belt, even with airbags. Airbags are designed to work with safety belts, not replace them. Also, airbags are not designed to inflate in every crash. In some crashes safety belts are the only restraint. See *When Should an Airbag Inflate?* on page 3-27.

Wearing your safety belt during a crash helps reduce the chance of hitting things inside the vehicle or being ejected from it. Airbags are “supplemental restraints” to the safety belts. Everyone in the

(Continued)

### **Warning (Continued)**

vehicle should wear a safety belt properly, whether or not there is an airbag for that person.

### **Warning**

Because airbags inflate with great force and faster than the blink of an eye, anyone who is up against, or very close to any airbag when it inflates can be seriously injured or killed. Do not sit unnecessarily close to any airbag, as you would be if sitting on the edge of the seat or leaning forward. Safety belts help keep you in position before and during a crash. Always wear a safety belt, even with airbags. The driver should sit as far back as possible while still maintaining control of the vehicle.

(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.

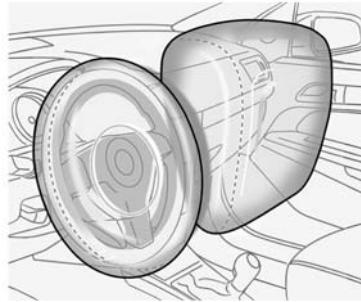
### **Warning**

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* on page 3-36 or *Infants and Young Children* on page 3-38.



There is an airbag readiness light on the instrument cluster which shows the airbag symbol. The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light* on page 5-12 for more information.

## Where Are the Airbags?



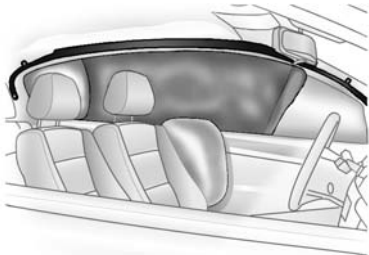
The driver frontal airbag is in the center of the steering wheel.

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



The driver knee airbag (if equipped) is below the steering column. The front outboard passenger knee airbag (if equipped) is below the glove box.

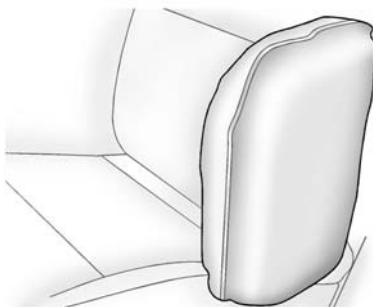
## 3-26 Seats and Restraints



### Driver Side Shown, Passenger Side Similar

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

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



### Rear Seat Driver Side Shown, Passenger Side Similar

On vehicles with second row seat-mounted side impact airbags, they are in the side of the seatback closest to the door.

### 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

(Continued)

### Warning (Continued)

or even death. The path of an inflating airbag must be kept clear. Do not put anything between an occupant and an airbag, and do not attach or put anything on the steering wheel hub or on or near any other airbag covering.

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

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

## When Should an Airbag Inflate?

This vehicle is equipped with airbags. See *Airbag System on page 3-23*. 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, in rear impacts, or in many side impacts.

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

Knee airbags (if equipped) are designed to inflate in moderate to severe frontal or near frontal impacts. Knee airbags are not designed to inflate during vehicle rollovers, in rear impacts, or in many side 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.



## 3-28 Seats and Restraints

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

### What Makes an Airbag Inflate?

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

For airbag locations, see *Where Are the Airbags?* on page 3-25.

### How Does an Airbag Restrain?

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

moderate to severe side collisions, even belted occupants can contact the inside of the vehicle.

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

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

But airbags would not help in many types of collisions, primarily because the occupant's motion is not toward those airbags. See *When Should an Airbag Inflate?* on page 3-27.

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

### What Will You See after an Airbag Inflates?

After the frontal, knee (if equipped), and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize an airbag inflated. Roof-rail airbags may still be at least partially inflated for some time after they inflate. Some components of the airbag module may be hot for several minutes. For location of the airbags, see *Where Are the Airbags?* on page 3-25.

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

 **Warning**

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

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

 **Warning**

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

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

In many crashes severe enough to inflate the airbag, windshields are broken by vehicle deformation.

Additional windshield breakage may also occur from the front outboard passenger airbag.

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

## 3-30 Seats and Restraints

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 instrument panel when the vehicle is started.



#### United States



#### Canada and Mexico

The words ON and OFF, or the symbol for on and off, will be visible during the system check. When the system check is complete, either the word ON or OFF, or the symbol for on or off, will be visible. See *Passenger Airbag Status Indicator* on page 5-12.

The passenger sensing system turns off the front outboard passenger frontal airbag and knee airbag (if equipped) under certain

conditions. No other airbag is affected by the passenger sensing system.

The passenger sensing system works with sensors that are part of the front outboard passenger seat. The sensors are designed to detect the presence of a properly seated occupant and determine if the front outboard passenger frontal airbag and knee airbag (if equipped) 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 age 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 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 airbag(s), no system is fail-safe. No one can guarantee that an airbag will not inflate under some unusual circumstance, even though the airbag(s) are off.

(Continued)

**Warning (Continued)**

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

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

- The front outboard passenger seat is unoccupied.
- The system determines that an infant is present in a rear-facing infant seat.
- The system determines that a small child is present in a child restraint.

- The system determines that a small child is present in a booster seat.
- A front outboard passenger takes his/her weight off of the seat for a period of time.
- A front outboard passenger seat is occupied by a smaller person, such as a child who has outgrown child restraints.
- There is a critical problem with the airbag system or the passenger sensing system.

When the passenger sensing system has turned off the front outboard passenger frontal airbag and knee airbag (if equipped), the off indicator will light and stay lit as a reminder that the airbags are off. See *Passenger Airbag Status Indicator* on page 5-12.

The passenger sensing system is designed to turn on the front outboard passenger frontal airbag and knee airbag (if equipped) anytime the system senses that a person of adult size is sitting

## 3-32 Seats and Restraints

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

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

### **Warning**

If the airbag readiness light ever comes on and stays on, it means that something may be wrong

(Continued)

### **Warning (Continued)**

with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light* on page 5-12 for more information, including important safety information.

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

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

1. Turn the vehicle off.
2. Remove the child restraint from the vehicle.
3. Remove any additional items from the seat such as blankets, cushions, seat covers, seat heaters, or seat massagers.

4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to *Securing Child Restraints (Rear Seat)* on page 3-50 or *Securing Child Restraints (Front Passenger Seat)* on page 3-52.
5. If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, turn the vehicle off. Then slightly recline the vehicle seatback and adjust the seat cushion, if adjustable, to make sure that the vehicle seatback is not pushing the child restraint into the seat cushion. Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint. See *Head Restraints* on page 3-2.
6. Restart the vehicle.

If the on indicator is still lit, secure the child in the child restraint in a rear seat position in the vehicle, and check with your dealer.

### 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. Use the following steps to allow the system to detect that person and enable the front outboard passenger frontal airbag and knee airbag (if equipped):

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. 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**

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

## 3-34 Seats and Restraints

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

The on indicator may be lit if an object, such as a briefcase, handbag, grocery bag, laptop, or other electronic device, is put on an unoccupied seat. If this is not desired, remove the object from the seat.

### Warning

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

### Servicing the Airbag-Equipped Vehicle

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

### Warning

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

### Adding Equipment to the Airbag-Equipped Vehicle

Adding accessories that change the vehicle's frame, bumper system, height, front end, or side sheet metal, may keep the airbag system from working properly. The operation of the airbag system can also be affected by changing or moving any parts of the front seats, safety belts, the airbag sensing and

diagnostic module, steering wheel, instrument panel, any of the airbag modules, ceiling or pillar garnish trim, overhead console, front sensors, side impact sensors, or airbag wiring.

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

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

could either prevent proper deployment of the passenger airbag(s) or prevent the passenger sensing system from properly turning off the passenger airbag(s). See *Passenger Sensing System* on page 3-30.

If the vehicle has rollover roof-rail airbags, see *Different Size Tires and Wheels* on page 10-52 for additional important information.

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

## Airbag System Check

The airbag system does not need regularly scheduled maintenance or replacement. Make sure the airbag readiness light is working. See *Airbag Readiness Light* on page 5-12.

### Caution

If an airbag covering is damaged, opened, or broken, the airbag may not work properly. Do not open or break the airbag coverings. If there are any opened or broken airbag coverings, have the airbag covering and/or airbag module replaced. For the location of the airbags, see *Where Are the Airbags?* on page 3-25. See your dealer for service.



### Replacing Airbag System Parts after a Crash

#### Warning

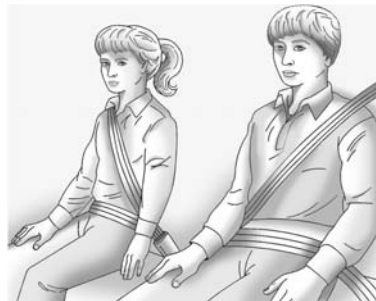
A crash can damage the airbag systems in the vehicle. A damaged airbag system may not work properly and may not protect you and your passenger(s) in a crash, resulting in serious injury or even death. To help make sure the airbag systems are working properly after a crash, have them inspected and any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

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

If the airbag readiness light stays on after the vehicle is started or comes on when you are driving, the airbag system may not work properly. Have the vehicle serviced right away. See *Airbag Readiness Light on page 5-12*.

### Child Restraints

#### Older Children



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

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

- Sit all the way back on the seat. Do the knees bend at the seat edge? If yes, continue. If no, return to the booster seat.
- Buckle the lap-shoulder belt. Does the shoulder belt rest on the shoulder? If yes, continue. If no, try using the rear safety belt comfort guide, if available. See “Rear Safety Belt Comfort Guides” under *Lap-Shoulder Belt on page 3-17*. 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 safety belt fit be maintained for the length of the trip? If yes, continue. If no, return to the booster seat.


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

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

Also see “Rear Safety Belt Comfort Guides” under *Lap-Shoulder Belt on page 3-17*.

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 safety belts properly.

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



### Warning

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

(Continued)

### Warning (Continued)

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



### 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

(Continued)

## 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 (Continued)**

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 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 safety belts.

Every time infants and young children ride in vehicles, they should have the protection provided by appropriate child restraints. Neither the vehicle's safety 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. 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 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

(Continued)

## 3-40 Seats and Restraints

### Warning (Continued)

the front outboard seat, always move the front passenger seat as far back as it will go.



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

**A:** Add-on child restraints, which are purchased by the vehicle owner, are available in four basic types. Selection of a particular restraint should take into consideration not only the child's

weight, height, and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

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

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

### Warning

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

### Warning

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

(Continued)

**Warning (Continued)**

any bony structure. This alone could cause serious or fatal injuries. To reduce the risk of serious or fatal injuries during a crash, young children should always be secured in appropriate child restraints.

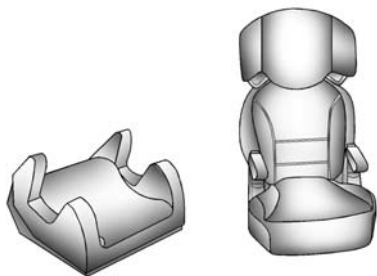
**Child Restraint Systems****Rear-Facing Infant Seat**

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

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

**Forward-Facing Child Seat**

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



### Booster Seats

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

### Securing an Add-On Child Restraint in the Vehicle

#### Warning

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

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraint systems must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by the LATCH system. See *Lower Anchors and Tethers for Children (LATCH System)* on page 3-44.

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


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

### Where to Put the Restraint

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

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 deploys.

 <b>Warning</b>
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
(Continued)

<b>Warning (Continued)</b>
system is fail-safe. No one can guarantee that an airbag will not deploy under some unusual circumstance, even though it is turned off.
Secure rear-facing child restraints in a rear seat, even if the airbag is off. If you secure a forward-facing child restraint in the 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 <i>Passenger Sensing System</i> on page 3-30 for additional information.

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



## 3-44 Seats and Restraints

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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 safety belt assemblies or LATCH anchors for additional passengers or child restraints. Adjacent seating positions should not be used if the child restraint prevents access to or interferes with the routing of the safety belt.

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

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

### Lower Anchors and Tethers for Children (LATCH System)

The LATCH system secures a child restraint during driving or in a crash. LATCH attachments on the child restraint are used to attach the child restraint to the anchors in the vehicle. 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 safety belts. Do not use both the safety belts and the LATCH anchorage system to secure a rear-facing or forward-facing child seat.

Booster seats use the vehicle's safety belts to secure the child in 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.

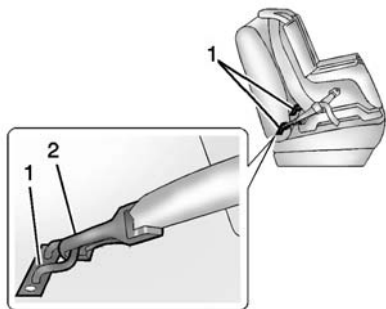
When installing a child restraint with a top tether, you must also use either the lower anchors or the safety belts to properly secure the child restraint. A child restraint must never be installed using only the top tether and anchor.

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 safety belt alone instead of the LATCH anchorage system once the combined weight is more than 29.5 kg (65 lbs).

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

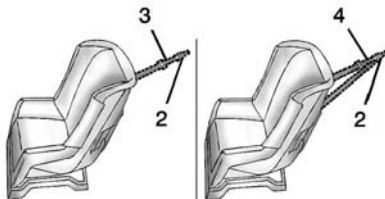
Not all vehicle seating positions or child restraints have lower anchors and attachments or top tethers and attachments.

### Lower Anchors



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

### Top Tether Anchor



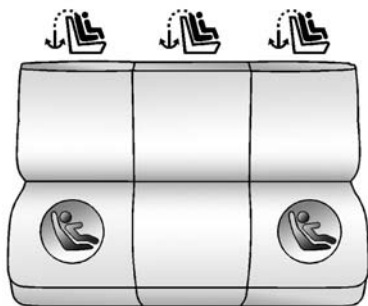
A top tether (3, 4) anchors the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment (2) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child restraint during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

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


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

## 3-46 Seats and Restraints

### Lower Anchor and Top Tether Anchor Locations



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

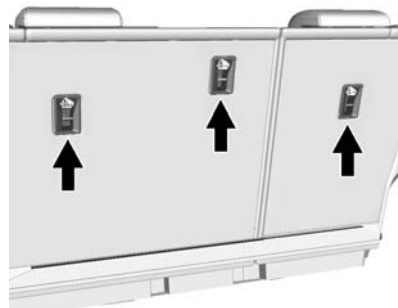
 **(Lower Anchor):** Seating positions with two lower anchors.



To assist in locating the lower anchors, each 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 on the trim near the anchor.



The top tether anchors are on the back of the rear seatbacks. Be sure to use an anchor on the same side of the vehicle as the seating position where the child restraint will be placed.

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

According to accident statistics, children and infants are safer when properly restrained in a child restraint system or infant restraint system secured in a rear seating position. See *Where to Put the Restraint on page 3-43* for additional information.

### Securing a Child Restraint Designed for the LATCH System

 **Warning**

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

(Continued)

**Warning (Continued)**

following 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 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 safety 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.

## 3-48 Seats and Restraints

### Caution

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

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

If you need to secure more than one child restraint in the rear seat, see *Where to Put the Restraint on page 3-43*.

This system is designed to make installation of child restraints easier. When using lower anchors, do not use the vehicle's safety belts. Instead use the vehicle's anchors and child restraint attachments to

secure the restraints. Some restraints also use another vehicle anchor to secure a top tether.

1. Attach and tighten the lower attachments to the lower anchors. If the child restraint does not have lower attachments or the desired seating position does not have lower anchors, secure the child restraint with the top tether and the safety belts. Refer to your child restraint manufacturer instructions and the instructions in this manual.

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

- 1.2. Put the child restraint on the seat.

When installing a rear-facing child restraint, it may be necessary to move the front seat forward to properly install the child restraint per the child

restraint manufacturer instructions. See *Seat Adjustment on page 3-3*.

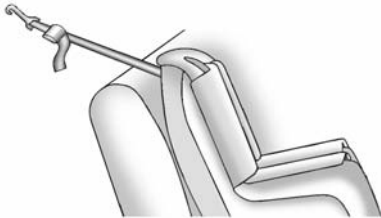
- 1.3. Attach and tighten the lower attachments on the child restraint to the lower anchors.

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

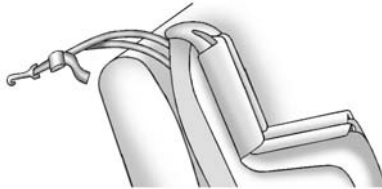
- 2.1. Find the top tether anchor.

- 2.2. Remove the cargo cover before installing the top tether. Place the cargo cover on the floor of the cargo area. The cargo cover should remain off while the top tether is in use.

2.3. 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 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 head restraint and you are using a dual tether, route the tether over the seatback.



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



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

## 3-50 Seats and Restraints

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

### Replacing LATCH System Parts After a Crash

#### Warning

A crash can damage the LATCH system in the vehicle. A damaged LATCH system may not properly secure the child restraint, resulting in serious injury or even death in a crash. To help make sure the LATCH system is working properly after a crash, see your dealer to have the system inspected and any necessary replacements made as soon as possible.

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

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

### Securing Child Restraints (Rear Seat)

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

If the child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH System)* on page 3-44 for how and where to install the child restraint using LATCH. If a child restraint is secured in the vehicle using a safety belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* on page 3-44 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.

If the child restraint or vehicle seat position does not have the LATCH system, you will be using the safety belt to secure the child restraint in

this position. Be sure to follow the instructions that came with the child restraint. Secure the child in the child restraint when and as the instructions say.

If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint* on page 3-43.

1. Put the child restraint on the seat.

For outboard second row seating positions, remove the safety belt from the guide. Do not secure the child restraint with the safety belt routed through the guide.

When installing a rear-facing child restraint, it may be necessary to move the front seat forward to properly install the child restraint per the child restraint manufacturer instructions.

2. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through

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



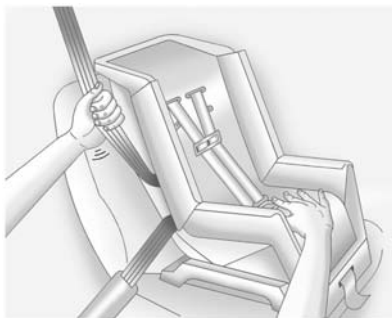
3. Push the latch plate into the buckle until it clicks.

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



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





- 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.
- If the child restraint has a top tether, follow the child restraint manufacturer's instructions regarding the use of the top tether. See *Lower Anchors and Tethers for Children (LATCH System)* on page 3-44 for more information.
- Before placing a child in the child restraint, make sure it is securely held in place. To check, grasp the child restraint at the safety belt path and attempt to move it side to side and back and forth. When the child restraint is properly installed, there should be no more than 2.5 cm (1 in) of movement.  
To remove the child restraint, unbuckle the vehicle safety belt and let it return to the stowed position. If the top tether is attached to a top tether anchor, disconnect it.

### Securing Child Restraints (Front Passenger Seat)

This vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint* on page 3-43.

In addition, the vehicle has a passenger sensing system which is designed to turn off the front outboard passenger frontal airbag and knee airbag (if equipped) under certain conditions. See *Passenger Sensing System* on page 3-30 and *Passenger Airbag Status Indicator* on page 5-12 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.

(Continued)

**Warning (Continued)**

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

See *Passenger Sensing System on page 3-30* for additional information.

If the child restraint uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System) on page 3-44* 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.

When the passenger sensing system has turned off the front outboard passenger frontal airbag and knee airbag (if equipped), the off indicator on the passenger airbag status indicator should light and stay lit when the vehicle is started. See *Passenger Airbag Status Indicator on page 5-12*.

2. Put the child restraint on the seat.

## 3-54 Seats and Restraints

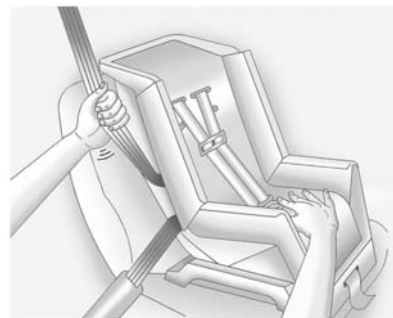
- Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through or around the restraint. The child restraint instructions will show you how.



- Push the latch plate into the buckle until it clicks.  
Position the release button on the buckle, so that the safety belt could be quickly unbuckled if necessary.



- 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.



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

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

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

If the front outboard passenger frontal airbag and knee airbag (if equipped) are off, the off indicator in the passenger airbag status indicator will come on and stay on when the vehicle is started.

If a child restraint has been installed and the on indicator is lit, see "If the On Indicator Is Lit for a Child Restraint" under *Passenger Sensing System* on page 3-30.

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



# Storage

## Storage Compartments

- Storage Compartments ..... 4-1
- Instrument Panel Storage ..... 4-1
- Cupholders ..... 4-2
- Sunglasses Storage ..... 4-2
- Underseat Storage ..... 4-2
- Center Console Storage ..... 4-3


## Additional Storage Features

- Cargo Cover ..... 4-3
- Cargo Management System ..... 4-3
- Convenience Net ..... 4-4
- Warning Triangle ..... 4-4
- First Aid Kit ..... 4-5

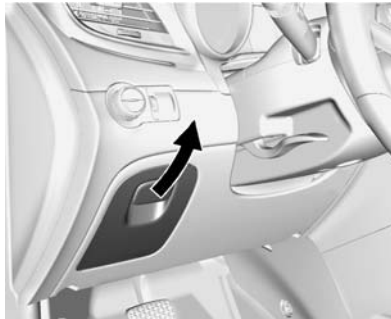
## Roof Rack System

- Roof Rack System ..... 4-5

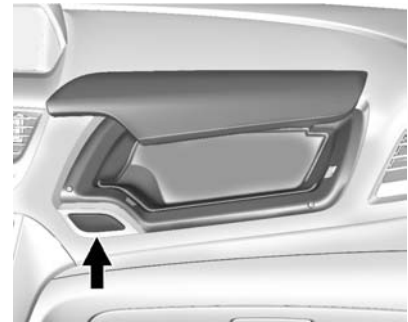
## Storage Compartments

 <b>Warning</b>
<p>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.</p>

## Instrument Panel Storage



Pull the handle to open.

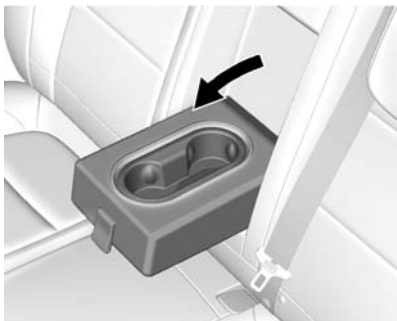


Press the button to open.

## 4-2 Storage

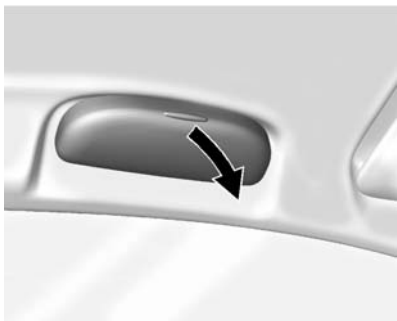
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### Cupholders



If equipped, pull the rear seat armrest down to access.

### Sunglasses Storage



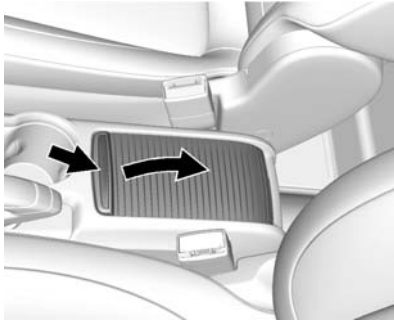
If equipped, the sunglasses storage is over the driver door.

### Underseat Storage



If equipped, there is storage under the front passenger seat. Lift the end of the tray and pull it forward to open. Push it in toward the seat to close.

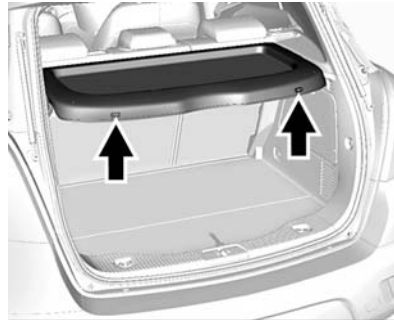
## Center Console Storage



For vehicles with center console storage, press the button and slide rearward to open.

## Additional Storage Features

### Cargo Cover



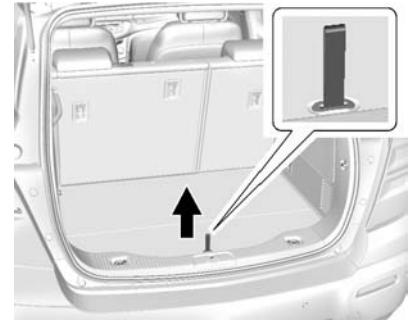
If equipped, use the cargo cover to cover items in the rear of the vehicle.

To install, hang the loops on the liftgate anchors.

Do not place objects on the cargo cover.

## Cargo Management System

This vehicle has a cargo management system in the rear.



Pull the strap to lift.

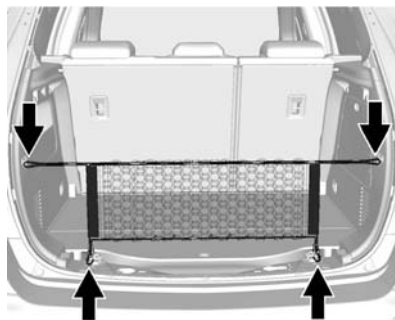


## 4-4 Storage



Fold the load floor. Place the hook from the load floor inside the hook on the side trim.

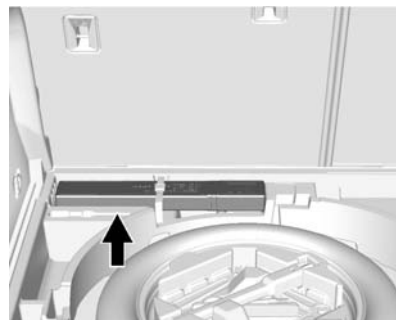
### Convenience Net



The vehicle may have a convenience net.

The net is used to store small loads and should not be used for heavy loads.

### Warning Triangle



If equipped, the warning triangle is stowed in the rear storage compartment.

## First Aid Kit



If equipped, the first aid kit is stowed in the side rear storage compartment.

## 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.

For vehicles with a roof rack, the 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 75 kg (165 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.

## 4-6 Storage

---

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.

See *Vehicle Load Limits on page 9-10*.

# Instruments and Controls

## Controls

Steering Wheel Adjustment . . .	5-2
Steering Wheel Controls . . . . .	5-2
Heated Steering Wheel . . . . .	5-2
Horn . . . . .	5-2
Windshield Wiper/Washer . . . . .	5-2
Rear Window Wiper/ Washer . . . . .	5-4
Compass . . . . .	5-4
Clock . . . . .	5-5
Power Outlets . . . . .	5-5

## Warning Lights, Gauges, and Indicators

Warning Lights, Gauges, and Indicators . . . . .	5-7
Instrument Cluster . . . . .	5-8
Speedometer . . . . .	5-9
Odometer . . . . .	5-9
Trip Odometer . . . . .	5-9
Tachometer . . . . .	5-9
Fuel Gauge . . . . .	5-9
Engine Coolant Temperature Gauge . . . . .	5-10

Safety Belt Reminders . . . . .	5-11
Airbag Readiness Light . . . . .	5-12
Passenger Airbag Status Indicator . . . . .	5-12
Charging System Light . . . . .	5-13
Malfunction Indicator Lamp . . . . .	5-13
Brake System Warning Light . . . . .	5-16
Antilock Brake System (ABS) Warning Light . . . . .	5-17
Power Steering Warning Light . . . . .	5-17
Lane Departure Warning (LDW) Light . . . . .	5-17
Vehicle Ahead Indicator . . . . .	5-18
Traction Off Light . . . . .	5-18
StabiliTrak <sup>®</sup> OFF Light . . . . .	5-18
Traction Control System (TCS)/StabiliTrak <sup>®</sup> Light . . . . .	5-19
Tire Pressure Light . . . . .	5-19
Engine Oil Pressure Light . . . . .	5-19
Low Fuel Warning Light . . . . .	5-20
Immobilizer Light . . . . .	5-20
High-Beam On Light . . . . .	5-21
Daytime Running Lamps (DRL) Indicator Light . . . . .	5-21

Front Fog Lamp Light . . . . .	5-21
Lamps On Reminder . . . . .	5-21
Cruise Control Light . . . . .	5-21

## Information Displays

Driver Information Center (DIC) . . . . .	5-22
--	------

## Vehicle Messages

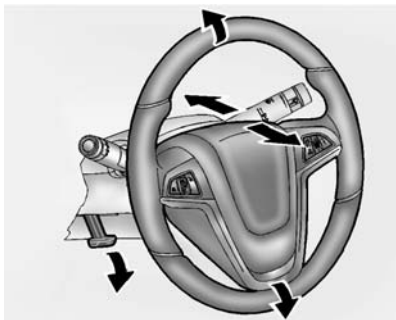
Vehicle Messages . . . . .	5-25
Battery Voltage and Charging Messages . . . . .	5-25
Brake System Messages . . . . .	5-25
Door Ajar Messages . . . . .	5-26
Engine Cooling System Messages . . . . .	5-26
Engine Oil Messages . . . . .	5-26
Engine Power Messages . . . . .	5-26
Fuel System Messages . . . . .	5-27
Object Detection System Messages . . . . .	5-27
Ride Control System Messages . . . . .	5-28
Tire Messages . . . . .	5-29
Transmission Messages . . . . .	5-29

## Vehicle Personalization

Vehicle Personalization . . . . .	5-30
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### Controls

#### Steering Wheel Adjustment



To adjust the steering wheel:

1. Pull the lever down.
2. Move the steering wheel up or down.
3. Pull or push the steering wheel closer or away from you.
4. Lift the lever up to lock the steering wheel in place.


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



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

The steering wheel takes about three minutes to start heating.

#### Horn

Press  on the steering wheel pad to sound the horn.

#### Windshield Wiper/Washer




The windshield wiper/washer lever is on the right side of the steering column.

Move the lever to one of the following positions:

**HI:** Use for fast wipes.


**LO:** Use for slow wipes.



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

**OFF:** Use to turn the wipers off.

**1X (Mist):** For a single wipe, briefly move the wiper lever down. For several wipes, hold the wiper lever down.

 **(Windshield Washer):** Pull the windshield wiper lever toward you to spray windshield washer fluid and activate the wipers. The wipers will

continue until the lever is released or the maximum wash time is reached. When the windshield wiper lever is released, additional wipes may occur depending on how long the windshield washer had been activated. See *Washer Fluid on page 10-17* for information on filling the windshield washer fluid reservoir.

### Warning


In freezing weather, do not use the washer until the windshield is warmed. Otherwise the washer fluid can form ice on the windshield, blocking your vision.

Clear snow and ice 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 on page 10-22*.

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

### Rainsense™

If equipped with Rainsense, a rain sensor detects the amount of water on the windshield and controls the frequency of the windshield wiper.

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



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

## 5-4 Instruments and Controls

- Move the windshield wiper lever out of the INT position to deactivate Rainsense.

Keep the sensor free from debris to allow for best system performance.

### Rear Window Wiper/Washer

The rear wiper/washer controls are on the end of the windshield wiper lever.




**ON:** Press the upper portion of the button for continuous rear window wiper.

**OFF:** The rear wiper turns off when the button is returned to the middle position.

#### INT (Intermittent Rear Wipes):

Press the lower portion of the button to set a delay between wipes.

↑  **REAR (Rear Washer):** Push the windshield wiper lever forward to spray washer fluid on the rear window. The lever returns to its starting position when released.

#### 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 changed. See *Vehicle Personalization on page 5-30*.

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 on page 10-17*.

### Compass

The vehicle may have a compass display in the Driver Information Center (DIC).

#### Setting the Compass Zone

Under certain circumstances, such as during a long trip or moving to a new area, the compass zone will need to be reset. If the compass is not set to the correct zone, it may give false readings. The compass zone should be set to the area in which the vehicle is currently traveling.

Use the DIC buttons to set the compass zone:

1. While the vehicle is in P (Park), press the MENU button to display the DIC menu.

2. Press and hold SET/CLR while the Set Area display is active.



3. Find the vehicle's current location and zone number on the map. Zones 1 through 15 are available.
4. Use  $\Delta$   $\nabla$  to change to the correct zone number.
5. Press SET/CLR to confirm the setting.

## Clock

The infotainment system controls are used to access the time and date settings through the menu system. See "Using the System" in the infotainment manual.

### Setting the Clock

To set the time and date:

1. Press the CONFIG button and then turn the TUNE/MENU knob to select Time and Date or press  $\odot$ .
2. Select the desired feature.
3. Turn the TUNE/MENU knob to adjust the highlighted number.
4. Press the TUNE/MENU knob to select the next number.
5. To save and return to the Time and Date menu, press  $\leftarrow$  BACK at any time or press the TUNE/MENU knob after adjusting the value.
6. Repeat steps 2–5 for the remaining feature.

If auto timing is set, the time displayed on the clock may not update immediately when driving into a new time zone.

### Setting the 12/24 Hour Format

1. Press the CONFIG button and select Time and Date or press  $\odot$ .
2. Select Set Time Format.
3. Turn the TUNE/MENU knob to highlight the 12 hour or 24 hour display format.
4. Press the TUNE/MENU knob to select display format.

## Power Outlets

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

There is one accessory power outlet on the center stack below the climate control. This outlet is powered when the key is in ON/RUN or ACC/ACCESSORY, or until the driver door is opened within



## 5-6 Instruments and Controls

10 minutes of turning off the vehicle. See *Retained Accessory Power (RAP)* on page 9-19.

### **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 20 amp rating.

Certain electrical accessories may not be compatible with the accessory power outlet and could overload vehicle or adapter fuses. If a problem is experienced, see your dealer.

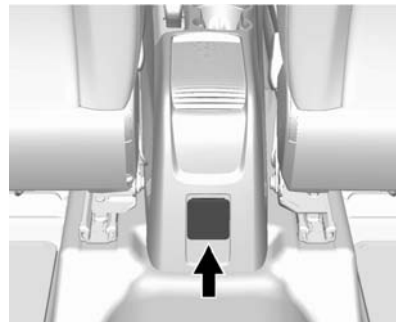
When adding electrical equipment, be sure to follow the installation instructions included with the equipment. See *Add-On Electrical Equipment* on page 9-46.

### **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 120 Volt Alternating Current**

If equipped, this power outlet is on the rear of the center console. It can be used to plug in electrical equipment that uses a maximum limit of 150 watts.



An indicator light on the outlet turns on to show it is in use. The light comes on when the ignition is in ON/RUN and equipment requiring less than 150 watts is plugged into the outlet, and no system fault is detected.

The indicator light does not come on when the ignition is in LOCK/OFF or if the equipment is not fully seated into the outlet.

If equipment is connected using more than 150 watts or a system fault is detected, a protection circuit shuts off the power supply and the

indicator light turns off. To reset the circuit, unplug the item and plug it back in or turn the Retained Accessory Power (RAP) off and then back on. See *Retained Accessory Power (RAP)* on page 9-19. The power restarts when equipment using 150 watts or less is plugged into the outlet and a system fault is not detected.

The power outlet is not designed for and may not work properly, if the following are plugged in:

- Equipment with high initial peak wattage such as:  
compressor-driven refrigerators and electric power tools.
- Other equipment requiring an extremely stable power supply such as:  
microcomputer-controlled electric blankets, touch sensor lamps, etc.
- Medical equipment.

## **Warning Lights, Gauges, and Indicators**

Warning lights and gauges can signal that something is wrong before it becomes serious enough to cause an expensive repair or replacement. Paying attention to the warning lights and gauges could prevent injury.

Warning lights come on when there could be a problem with a vehicle function. Some warning lights come on briefly when the engine is started to indicate they are working.

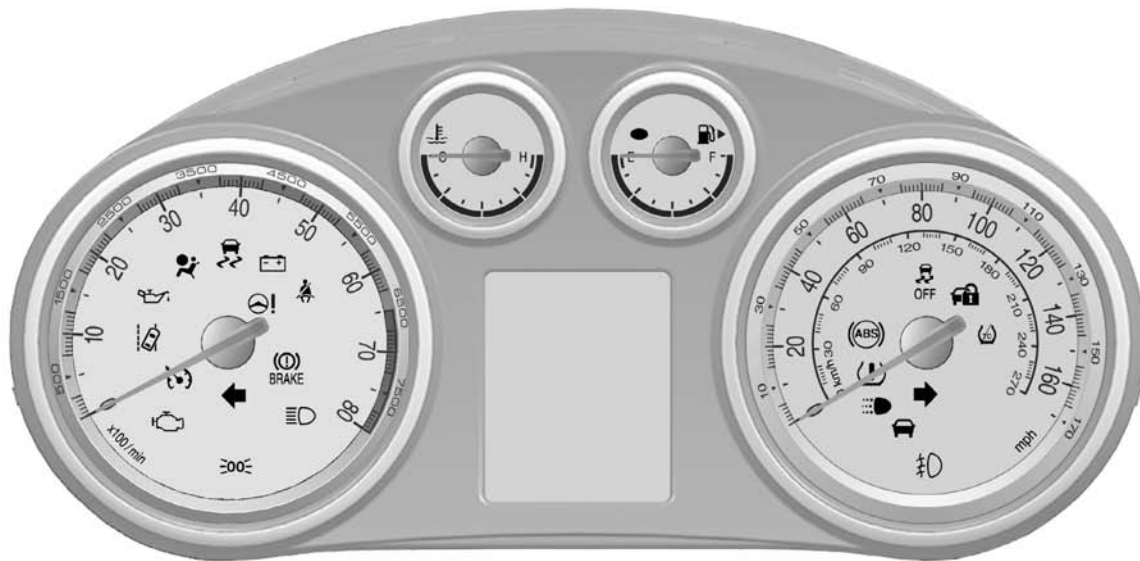
Gauges can indicate when there could be a problem with a vehicle function. Often gauges and warning lights work together to indicate a problem with the vehicle.

When one of the warning lights comes on and stays on while driving, or when one of the gauges shows there may be a problem, check the section that explains what to do. Waiting to do repairs can be costly and even dangerous.

## 5-8 Instruments and Controls

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### Instrument Cluster



English Shown, Metric Similar

## Speedometer

The speedometer shows the vehicle speed in kilometers per hour (km/h) and 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)* on page 5-22.

## Tachometer

The tachometer displays the engine speed in revolutions per minute (rpm).

### ⚠ Caution

If the engine is operated with the rpm's in the warning area at the high end of the tachometer, the vehicle could be damaged, and the damage would not be covered by the vehicle warranty. Do not operate the engine with the rpm's in the warning area.

## Fuel Gauge



Metric



English

## 5-10 Instruments and Controls

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The fuel gauge indicates about how much fuel is left when the ignition is turned to ON/RUN.

When the tank nears empty, the low fuel warning light will come on. There is still a little fuel left, but the vehicle's fuel tank should be filled soon. See *Low Fuel Warning Light on page 5-20* for more information.

An arrow on the fuel gauge indicates on which side of the vehicle the fuel door is located.

Here are four things that some owners ask about. None of these show a problem with the fuel gauge:

- At the service station, the gas 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 indicator moves a little when turning a corner or speeding up.
- The gauge goes back to empty when the ignition is turned off.

## Engine Coolant Temperature Gauge



**Metric**



### English

This gauge shows the engine coolant temperature.

If the indicator needle moves to the hot side of the gauge toward the shaded area, the engine is too hot.

If the vehicle has been operated under normal driving conditions, pull off the road, stop the vehicle, and turn off the engine as soon as possible.

## Safety Belt Reminders

### Driver Safety Belt Reminder Light

There is a driver safety belt reminder light on the instrument cluster.



When the vehicle is started, this light flashes and a chime may come on to remind the driver to fasten their safety belt. Then the light stays on solid until the belt is buckled. This cycle may continue several times if the driver remains or becomes unbuckled while the vehicle is moving.

If the driver safety belt is buckled, neither the light nor the chime comes on.

### Passenger Safety Belt Reminder Light

The vehicle may also have a passenger safety belt reminder light.



When the vehicle is started, this light flashes and a chime may come on to remind passengers to fasten their safety belt. Then the light stays on solid until the belt is buckled.

This cycle continues several times if the front passenger remains or becomes unbuckled while the vehicle is moving.

If the front passenger safety belt is buckled, neither the chime nor the light comes on.

The front passenger safety belt reminder light and chime may turn on if an object is put on the seat

## 5-12 Instruments and Controls

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 safety belt.

### Airbag Readiness Light

This light shows if there is an electrical problem with the airbag system. The system check includes the airbag sensor(s), passenger sensing system (if equipped), the pretensioners, the airbag modules, the wiring, and the crash sensing and diagnostic module. For more information on the airbag system, see *Airbag System on page 3-23*.



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.

### Passenger Airbag Status Indicator

The vehicle has a passenger sensing system. See *Passenger Sensing System on page 3-30* for

important safety information. The instrument panel has a passenger airbag status indicator.



#### United States



#### Canada and Mexico

When the vehicle is started, the passenger airbag status indicator will light ON and OFF, or the symbol for on and off, for several seconds as a system check. Then, after several seconds, the status indicator will light either ON or OFF, or the on or off symbol to let you

know the status of the front outboard passenger frontal airbag and knee airbag (if equipped).

If the word ON or the on symbol is lit on the passenger airbag status indicator, it means that the front outboard passenger frontal airbag and knee airbag (if equipped) are allowed to inflate.

If the word OFF or the off symbol is lit on the passenger airbag status indicator, it means that the passenger sensing system has turned off the front outboard passenger frontal airbag and passenger knee airbag (if equipped).

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 on page 5-12* for more information, including important safety information.

## Charging System Light



This light will come on briefly when the ignition is turned on, and the engine is not running, as a check to show it is working.

It should go out when the engine is started. If it 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. If a short distance must be driven with the light on, turn off all accessories, such as the radio and air conditioner, to help reduce the drain on the battery.

## Malfunction Indicator Lamp

A computer system called OBD II (On-Board Diagnostics-Second Generation) monitors the operation of the vehicle to ensure emissions are at acceptable levels, helping to maintain a clean environment. The malfunction indicator lamp comes on when the vehicle is placed in ON/RUN, as a check to show it is working. If it does not, have the vehicle serviced by your dealer. See *Ignition Positions on page 9-14* for more information.



## 5-14 Instruments and Controls



If the malfunction indicator lamp comes on while the engine is running, this indicates that the OBD II system has detected a problem and diagnosis and service might be required.

Malfunctions often are indicated by the system before any problem is apparent. Being aware of the light can prevent more serious damage to the vehicle. This system also assists the service technician in correctly diagnosing any malfunction.

### **Caution**

If the vehicle is continually driven with this light on, the emission controls might not work as well,

(Continued)

### **Caution (Continued)**

the vehicle fuel economy might not be as good, and the engine might not run as smoothly. This could lead to costly repairs that might not be covered by the vehicle warranty.

### **Caution**

Modifications made to the engine, transmission, exhaust, intake, or fuel system of the vehicle or the replacement of the original tires with other than those of the same Tire Performance Criteria (TPC) can affect the vehicle's emission controls and can cause this light to come on.

Modifications to these systems could lead to costly repairs not covered by the vehicle warranty. This could also result in a failure

(Continued)

### **Caution (Continued)**

to pass a required Emission Inspection/Maintenance test. See *Accessories and Modifications on page 10-2*.

This light comes on during a malfunction in one of two ways:

**Light Flashing:** A misfire condition has been detected. A misfire increases vehicle emissions and could damage the emission control system on the vehicle. Diagnosis and service might be required.

To prevent more serious damage to the vehicle:

- Reduce vehicle speed.
- Avoid hard accelerations.
- Avoid steep uphill grades.

If the light continues to flash, find a safe place to stop and park the vehicle. Turn the vehicle off, wait at least 10 seconds, and restart the engine. If the light is still flashing,

follow the previous steps and see your dealer for service as soon as possible.

**Light On Steady:** An emission control system malfunction has been detected on the vehicle. Diagnosis and service might be required.

The following may correct an emission control system malfunction:

- Check that the fuel cap is fully installed. See *Filling the Tank on page 9-43*. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap allows fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn the light off.
- Check that good quality fuel is used. Poor fuel quality causes the engine not to run as efficiently as designed and may cause stalling after start-up,

stalling when the vehicle is changed into gear, misfiring, hesitation on acceleration, or stumbling on acceleration. These conditions might go away once the engine is warmed up.

If one or more of these conditions occurs, change the fuel brand used. It may require at least one full tank of the proper fuel to turn the light off.

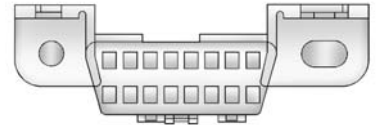
See *Fuel on page 9-42*.

If none of the above have made the light turn off, your dealer can check the vehicle. The dealer has the proper test equipment and diagnostic tools to fix any mechanical or electrical problems that might have developed.

### Emissions Inspection and Maintenance Programs

Depending on where you live, your vehicle may be required to participate in an emission control system inspection and maintenance program. For the inspection, the

emission system test equipment will likely connect to the vehicle's Data Link Connector (DLC).



The DLC is under the instrument panel to the left of the steering wheel. See your dealer if assistance is needed.

The vehicle may not pass inspection if:

- The malfunction indicator lamp is on with the engine running, or if the light does not come on when the ignition is turned to ON/RUN while the engine is off. See your dealer for assistance in verifying proper operation of the malfunction indicator lamp.
- The OBD II (On-Board Diagnostics) system determines that critical emission control

systems have not been completely diagnosed. The vehicle would be considered not ready for inspection. This can happen if the 12-volt battery has recently been replaced or run down. The diagnostic system is designed to evaluate critical emission control systems during normal driving. This can take several days of routine driving. If this has been done and the vehicle still does not pass the inspection for lack of OBD II system readiness, your dealer can prepare the vehicle for inspection.

### Brake System Warning Light

The vehicle brake system consists of two hydraulic circuits. If one circuit is not working, the remaining circuit can still work to stop the vehicle. For normal braking performance, both circuits need to be working



**Metric**

The brake indicator light should come on briefly as the engine is started. If it does not come on have the vehicle serviced by your dealer.

When the ignition is on, the brake system warning light comes on when the parking brake is set. The light stays on if the parking brake does not fully release. If it stays on after the parking brake is fully released, there is a brake problem. Have the brake system inspected immediately.



**BRAKE**

**English**

### **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.

If the light comes on while driving, a chime sounds. Pull off the road and stop. The pedal might be harder to push or go closer to the floor. It might also take longer to stop. If the light is still on, have the vehicle towed for service. See *Towing the Vehicle on page 10-65.*

## Antilock Brake System (ABS) Warning Light



This light comes on briefly when the engine is started.

If the light stays on, turn the ignition to LOCK/OFF or if the light comes on, stop as soon as possible and turn the ignition off. Then start the engine again to reset the system. If the light still stays on, or comes on again while driving, the vehicle needs service. See your dealer. If the regular brake system warning light is not on, the brakes will still work, but the antilock brakes will not work. If the regular brake system warning light is also on, the antilock brakes will not work and there is a

problem with the regular brakes. See *Brake System Warning Light* on page 5-16.

The ABS warning light will come on briefly when the ignition is turned to ON/RUN. This is normal. If the light does not come on then, have it fixed so it will be ready to warn if there is a problem.

## Power Steering Warning Light



This light comes on briefly when the ignition is turned to ON/RUN as a check to show it is working.

If it does not come on have the vehicle serviced by your dealer.

If this light stays on, or comes on while driving, the system may not be working. If this happens, see your dealer for service.

## Lane Departure Warning (LDW) Light



If equipped, this light comes on briefly while starting the vehicle.

If it does not come on, have the vehicle serviced.

This light is green if LDW is on and ready to operate.

This light changes to amber and flashes to indicate that the lane marking has been crossed without using a turn signal in that direction.

See *Lane Departure Warning (LDW)* on page 9-40.

### Vehicle Ahead Indicator



If equipped, this indicator will display green when a vehicle is detected ahead

See *Forward Collision Alert (FCA) System* on page 9-33.

### 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* on page 9-28.

### StabiliTrak<sup>®</sup> OFF Light



This light comes on briefly while starting the engine. If it does not, have the vehicle serviced by your dealer.

This light comes on when the StabiliTrak system is turned off. If StabiliTrak is off, the Traction Control System (TCS) is also off.

If the 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* on page 9-28.

## Traction Control System (TCS)/StabiliTrak<sup>®</sup> Light



The StabiliTrak or Traction Control System (TCS) indicator/warning light comes on briefly when the engine is started.

If the light does not come on, have the vehicle serviced by your dealer. If the system is working normally, the indicator light turns off.

If the light is on and not flashing, the TCS, and potentially the StabiliTrak system have been disabled.

If the indicator/warning light is on and flashing, the TCS and/or the StabiliTrak system is actively working.

See *Traction Control/Electronic Stability Control* on page 9-28.

## 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.

Stop as soon as possible, and inflate the tires to the pressure value shown on the Tire and Loading Information label. See *Tire Pressure* on page 10-43.

### When the Light Flashes First and Then Is On Steady

If the light flashes for about a minute and then stays on, there may be a problem with the TPMS. If the problem is not corrected, the light will come on at every ignition cycle. See *Tire Pressure Monitor Operation* on page 10-45.

## 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 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



#### Metric Shown, English Similar

This light comes on for a few seconds when the ignition is turned on as a check to indicate it is working. If it does not come on, have it fixed.

The low fuel warning light comes on and a chime sounds periodically when the vehicle is low on fuel. The light turns off when fuel is added to the fuel tank.

### Immobilizer Light



The immobilizer light should come on briefly as the engine is started. If it does not come on, have the vehicle serviced by your dealer. If the system is working normally, the indicator light turns off.

If the light stays on and the engine does not start, there could be a problem with the immobilizer system. See *Immobilizer Operation* on page 2-12.

## High-Beam On Light



This light comes on when the high-beam headlamps are in use.

See *Headlamp High/Low-Beam Changer* on page 6-2.

## Daytime Running Lamps (DRL) Indicator Light



If equipped, this light turns on whenever the Daytime Running Lamps are in use.

See *Daytime Running Lamps (DRL)* on page 6-2.

## Front Fog Lamp Light



For vehicles with front fog lamps, this light comes on when the front fog lamps are in use.

The light goes out when the front fog lamps are turned off. See *Front Fog Lamps* on page 6-4 for more information.

## Lamps On Reminder



This light comes on when the exterior lamps are in use. See *Exterior Lamp Controls* on page 6-1.

## Cruise Control Light



For vehicles with cruise control, 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.

The light turns off when the cruise control is turned off. See *Cruise Control* on page 9-30.



# Information Displays

## Driver Information Center (DIC)

The Driver Information Center (DIC) displays information about the vehicle. It also displays warning messages if a system problem is detected. See *Vehicle Messages on page 5-25*. All messages appear in the DIC display in the center of the instrument cluster.

The vehicle may also have features that can be customized through the controls on the radio. See *Vehicle Personalization on page 5-30*.

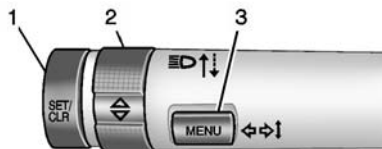
### DIC Operation and Displays

The DIC has different displays which can be accessed by using the DIC buttons on the turn signal lever. The DIC displays trip, fuel, and vehicle system information, and warning messages if a system problem is detected.

The bottom of the DIC display shows the position of the shift lever and the odometer. It may also show the direction the vehicle is driving.

In cold weather the DIC display may change slowly. This is normal and will move more quickly as the vehicle's interior temperature rises.

### DIC Buttons



1. **SET/CLR (Set/Clear):** Press to set or clear the menu item when it is displayed.
2. **△ / ▽ (Band):** Turn the band to scroll through the menu items. A small marker will move across the bottom of the page as you scroll through the items. This shows where each page is in the menu.

3. **MENU:** Press to get to the Trip/Fuel Menu and the Vehicle Information Menu. This button is also used to return to or exit the last screen displayed on the DIC.

### Trip/Fuel Menu Items

Press MENU on the turn signal lever until the Trip/Fuel Menu is displayed. Use △ / ▽ to scroll through the following menu items:

- Digital Speedometer
- Trip 1
- Trip 2
- Fuel Range
- Fuel Economy
- Average Vehicle Speed
- Timer
- Navigation

### Digital Speedometer

The speedometer shows how fast the vehicle is moving in either kilometers per hour (km/h) or miles per hour (mph). The speedometer cannot be reset.

### Trip 1 and Trip 2

These displays show the current distance traveled, in either kilometers (km) or miles (mi), since the last reset for the trip odometer. The trip odometer can be reset to zero by pressing SET/CLR, or the trip odometer reset stem in the cluster, while the trip odometer display is showing.

### Fuel Range

This display shows the approximate distance the vehicle can be driven without refueling. 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. Fuel range cannot be reset.

### Fuel Economy

This display shows instantaneous and average fuel economy in liters per 100 kilometers (L/100 km) or miles per gallon (mpg).

The instantaneous fuel economy reflects only the approximate current fuel economy and changes frequently as driving conditions change. Unlike average economy, this display cannot be reset.

Average fuel economy 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 by pressing SET/CLR while the Average Fuel Economy display is showing.

### Average Vehicle Speed

This display shows the average speed of the vehicle in kilometers per hour (km/h) or miles per hour (mph). This average is calculated based on the various vehicle speeds recorded since the last reset of this value. The average speed can be reset by pressing SET/CLR while the Average Vehicle Speed display is showing.

### Timer

This display can be used as a timer. To start the timer, press SET/CLR while Timer is displayed. The display will show the amount of time that has passed since the timer was last reset, not including time the ignition is off. Time will continue to be counted as long as the ignition is on, even if another display is being shown on the DIC. The timer will record up to 99 hours, 59 minutes, and 59 seconds (99:59:59) after which the display will return to zero. To stop the timer, press SET/CLR

## 5-24 Instruments and Controls

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briefly while Timer is displayed. To reset the timer to zero, press and hold SET/CLR.

### Navigation

This display is used for the Navigation System Turn-by-Turn guidance. See the infotainment manual, if the vehicle has navigation, for more information.

### Vehicle Information Menu Items

Press MENU on the turn signal lever until the Vehicle Information Menu is displayed. Use  $\triangle$  /  $\nabla$  to scroll through the following menu items:

- Unit
- Remaining Oil Life
- Tire Pressure

### Unit

Move  $\triangle$  /  $\nabla$  to switch between metric or US when the Unit display is active. Press SET/CLR to confirm the setting. This will change the

displays on the cluster and DIC to either metric or English (US) measurements.

### Remaining Oil Life

This display shows an estimate of the oil's remaining useful life. If REMAINING OIL LIFE 99% is displayed, that means 99% of the current oil life remains.

When the remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. See *Engine Oil Messages on page 5-26*. The oil should be changed as soon as possible. See *Engine Oil on page 10-7*. In addition to the Engine Oil Life System monitoring the oil life, additional maintenance is recommended in the Maintenance Schedule in this manual. See *Maintenance Schedule on page 11-2* for more information.

Remember, the Remaining Oil Life display must be reset after each oil change. It will not reset itself. Also, be careful not to reset the Remaining 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 SET/CLR while the Remaining Oil Life display is active. See *Engine Oil Life System on page 10-9*.

### Tire Pressure

The display will show a vehicle with the approximate pressures of all four tires. Tire pressure is displayed in either kilopascal (kPa) or pounds per square inch (psi). See *Tire Pressure Monitor System on page 10-44* and *Tire Pressure Monitor Operation on page 10-45* for more information.

### Compass

The vehicle has a compass display in the DIC. See *Compass on page 5-4* for more information.

## Vehicle Messages

Messages displayed on the DIC indicate the status of the vehicle or some action that may be needed to correct a condition. Multiple messages may display one after the other.

The messages that do not require immediate action can be acknowledged and cleared by pressing SET/CLR. The messages that require immediate action cannot be cleared until that action is performed. All messages should be taken seriously and clearing the messages does not correct the problem.

The following are some of the vehicle messages that may be displayed depending on your vehicle content.

## Battery Voltage and Charging Messages

### BATTERY LOW START VEHICLE

If this message displays, start the vehicle to prevent further draining of the battery.

### BATTERY SAVER ACTIVE

This message displays when the vehicle has detected that the battery voltage is dropping beyond a reasonable point. The battery saver system starts reducing features of the vehicle that may be noticed. At the point that features are disabled, this message displays. Turn off unnecessary accessories to allow the battery to recharge.

### LOW BATTERY

This message is displayed when the battery voltage is low. See *Battery on page 10-20*.

## Brake System Messages

### BRAKE FLUID LOW

This message is displayed when the brake fluid level is low. See *Brake Fluid on page 10-18*.

### BRAKES OVERHEATED

This message may display if the brakes are too hot.

### RELEASE PARKING BRAKE

This message is displayed if the parking brake is applied. Release it before you attempt to drive. See *Parking Brake on page 9-27* for more information.

### SERVICE BRAKE ASSIST

This message is displayed when there is a problem with the brake assist system. Take the vehicle to your dealer.

## Door Ajar Messages

### DOOR(S) OPEN

A vehicle symbol will be displayed on the DIC showing which door is open along with this message. Close the door completely.

### REAR ACCESS OPEN

This message will display when the liftgate is open. Close the liftgate completely.

## Engine Cooling System Messages

### ENGINE OVERHEATED — IDLE ENGINE

This message displays when the engine coolant temperature is too hot. Stop and allow the vehicle to idle until it cools down.

### ENGINE OVERHEATED — STOP ENGINE

This message displays and a continuous chime sounds if the engine cooling system reaches unsafe temperatures for operation. Stop and turn off the vehicle as soon as it is safe to do so to avoid severe damage. This message clears when the engine has cooled to a safe operating temperature.

## Engine Oil Messages

### CHANGE ENGINE OIL SOON

This message displays when the engine oil needs to be changed. When the engine oil is changed, be sure to reset the Oil Life System. See *Engine Oil Life System on page 10-9, Driver Information Center (DIC) on page 5-22, Engine Oil on page 10-7, and Maintenance Schedule on page 11-2.*

### ENGINE OIL HOT, IDLE ENGINE

This message displays when the engine oil temperature is too hot. Stop and allow the vehicle to idle until it cools down.

### ENGINE OIL LOW ADD OIL

On some vehicles, this message displays when the engine oil level may be too low. Check the oil level before filling to the recommended level. If the oil is not low and this message remains on, take the vehicle to your dealer for service. See *Engine Oil on page 10-7.*

## Engine Power Messages

### ENGINE POWER IS REDUCED

This message displays when the vehicle's engine power is reduced. Reduced engine power can affect the vehicle's ability to accelerate. If this message is on, but there is no reduction in performance, proceed to your destination. The performance may be reduced the

next time the vehicle is driven. The vehicle may be driven at a reduced speed while this message is on, but maximum acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer for service as soon as possible.

## Fuel System Messages

### FUEL LEVEL LOW

This message displays when the vehicle is low on fuel. Refuel as soon as possible.

### TIGHTEN GAS CAP

This message displays when the fuel cap is not on tight. Tighten the fuel cap.

## Object Detection System Messages

### FORWARD COLLISION ALERT OFF

If equipped with the Forward Collision Alert (FCA) system, this message may display if the FCA system cannot activate due to a temporary condition. See *Forward Collision Alert (FCA) System on page 9-33*.

### FRONT CAMERA BLOCKED, CLEAN WINDSHIELD

This message displays when the Lane Departure Warning (LDW) and Forward Collision Alert (FCA) systems are disabled because the camera view is blocked and cannot operate properly. It may also activate during heavy rain or due to road spray. To clean the system, clean the outside of the windshield area in front of the LDW/FCA camera sensor.

## LANE DEPARTURE WARNING UNAVAILABLE

If equipped with the Lane Departure Warning (LDW) system, this message may display if the LDW system cannot activate due to a temporary condition. See *Lane Departure Warning (LDW) on page 9-40*.

### PARK ASSIST OFF

This message displays when the parking assist system has been turned off or when there is a temporary condition causing the system to be disabled. See *Parking Assist on page 9-34*.

### PARK ASSIST FAULT CLEAN BUMPER

This message displays if snow, mud, ice, or dirt is blocking the sensors on the bumpers. Clean the bumpers.

### **SERVICE FRONT CAMERA**

If this message remains on after continued driving, the vehicle needs service. Do not use the Lane Departure Warning (LDW) and Forward Collision Alert (FCA) features. Take the vehicle to your dealer.

### **SERVICE PARKING ASSIST**

This message displays if there is a problem with the Front and Rear Parking Assist (FRPA) system. Do not use this system to help you park. See *Parking Assist* on page 9-34.

### **SERVICE SIDE DETECTION SYSTEM**

If this message remains on after continued driving, the vehicle needs service. Side Blind Zone Alert (SBZA) and Rear Cross Traffic Alert (RCTA) features will not work. Take the vehicle to your dealer.

### **SIDE BLIND ZONE ALERT OFF**

This message indicates that the driver has turned the Side Blind Zone Alert (SBZA) system off.

### **SIDE DETECTION SYSTEM UNAVAILABLE**

This message indicates that Side Blind Zone Alert (SBZA) and Rear Cross Traffic Alert (RCTA) are disabled either because the sensor is blocked and cannot detect vehicles in the blind zone, or the vehicle is passing through an open area, such as the desert, where there is insufficient data for operation. This message may also activate during heavy rain or due to road spray. The vehicle does not need service. For cleaning, see "Washing the Vehicle" under *Exterior Care* on page 10-67.

### **Ride Control System Messages**

#### **ALL WHEEL DRIVE OFF**

If your vehicle has the All-Wheel Drive (AWD) system, this message displays when the rear drive system is overheating. This message turns off when the rear drive system cools down. If the warning message stays on for a while, you need to reset the warning message. To reset the warning message, turn the ignition off and then back on again. If the message stays on, see your dealer right away. See *All-Wheel Drive* on page 9-26 for more information.

#### **SERVICE ALL WHEEL DRIVE SYSTEM**

If your vehicle has the All-Wheel Drive (AWD) system, this message displays if a problem occurs with this system. If this message appears, stop as soon as possible and turn off the vehicle. Restart the vehicle and check for the message on the DIC display. If the message

is still displayed or appears again when you begin driving, the AWD system needs service. See your dealer.

### **TRACTION CONTROL OFF**

This message displays when the Traction Control System (TCS) is turned off. Adjust your driving accordingly.

### **TRACTION CONTROL ON**

This message displays when the Traction Control System (TCS) is first turned on. See *Traction Control/Electronic Stability Control* on page 9-28 for more information.

## **Tire Messages**

### **SERVICE TIRE MONITOR SYSTEM**

This message displays if there is a problem with the Tire Pressure Monitor System (TPMS). See *Tire Pressure Monitor Operation* on page 10-45.

### **TIRE LEARNING ACTIVE**

This message displays when the system is learning new tires. See *Tire Pressure Monitor Operation* on page 10-45.

### **TIRE PRESSURE LOW ADD AIR TO TIRE**

On vehicles with the Tire Pressure Monitor System (TPMS), this message displays when the pressure in one or more of the vehicle's tires is low.

The low tire pressure warning light will also come on. See *Tire Pressure Light* on page 5-19.

If a tire pressure message displays, inflate the tires until the tire pressure is equal to the values shown on the Tire and Loading Information label. See *Tires* on page 10-35, *Vehicle Load Limits* on page 9-10, and *Tire Pressure* on page 10-43.

More than one tire pressure message can be received at a time. The DIC also shows the tire

pressure values. See *Driver Information Center (DIC)* on page 5-22.

## **Transmission Messages**

### **SERVICE TRANSMISSION**

This message displays if there is a problem with the transmission. See your dealer.

### **TRANSMISSION HOT — IDLE ENGINE**

This message displays and a chime sounds if the transmission fluid in the vehicle gets hot. Driving with the transmission fluid temperature high can cause damage to the vehicle. Stop the vehicle and let it idle to allow the transmission to cool. This message clears when the fluid temperature reaches a safe level.



### Vehicle 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

**CONFIG (Configuration):** Press to access the Configuration Settings menu.

**TUNE/MENU:** Press the center of the knob or outer ring for radios with navigation to enter the menus and select menu items. Turn the knob or outer ring to scroll through the menus.

⏪ **BACK:** Press to exit or move backward in a menu.

### Entering the Personalization Menus

1. Press CONFIG to access the Configuration Settings menu. The key must be in the ON/RUN position.
2. Turn the TUNE/MENU knob or outer ring to highlight the Vehicle Settings menu.
3. Press the TUNE/MENU knob or outer ring to select the menu.
4. Press ⏪ BACK to confirm the selection and move back to the last menu.

The following list of menu items may be available:

- Languages
- Time and Date
- Radio Settings
- Phone Settings
- Display Settings
- Vehicle Settings

### Languages

Select Language, then select from the available language(s).

### Time and Date

Select the Time and Date menu and the following may display:

- Set Time
- Set Date
- 12 hr / 24 hr Format

### Set Time

Select to manually set the time. Turn TUNE/MENU knob or outer ring to change the number, then press the knob or outer ring to confirm and go to the next number.

### Set Date

Select to manually set the date. Turn TUNE/MENU knob or outer ring to change the number, then press the knob or outer ring to confirm and go to the next number.

### 12 hr / 24 hr Format

Select to set the 12/24 hour format.

Select 12 hr or 24 hr.

### Radio Settings

Select Radio Settings and the following may display:

- Auto Volume
- Maximum Startup Volume
- Radio Favorites

### Auto Volume

The auto volume feature automatically adjusts the radio volume to compensate for road and wind noise as the vehicle speeds up or slows down, so that the volume level is consistent.

Select Off, Low, Medium, or High.

### Maximum Startup Volume

Select to manually set the startup volume of the radio.

Turn the TUNE/MENU knob or outer ring to increase or decrease the value.

### Radio Favorites

Select to manually set the number of favorite pages.

Select 1–6.

### Phone Settings

Select Phone Settings and the following may display:

- Bluetooth
- Return to Factory Settings

### Bluetooth

The following list of menu items may be available:

- Activation
- Device List
- Pair Device
- Change Bluetooth Code

### Activation

When on, the system will allow a Bluetooth device to connect.

Select On or Off.

### Device List

Allows the management of a Bluetooth device.

Select Connect, Separate, or Delete.

### Pair Device

Allows the pairing of a new Bluetooth device. See “Bluetooth” in the infotainment manual.

### Change Bluetooth Code

Manually change or set the code.

### Return to Factory Settings

Select Return to Factory Settings to return Bluetooth to the default settings.

Select Yes or No.

### Display Settings

Select Display Settings and the following may display:

- Home Page Menu
- Display Off

### Home Page Menu

Select Home Page Menu and the following may display:

- Customize
- Sort
- Restore Home Page Defaults

### Customize

Select what icons will be available on the Home Page.

Turn the TUNE/MENU knob or outer ring to select an icon, then press the knob or outer ring.

### Sort

This allows the first Home Page to be customized. See “Home Page” under “Using the System” in the infotainment manual.

### Restore Home Page Defaults

Select Restore Home Page Defaults to return the Home Page to the default settings.

Select Yes or No

### Display Off

Select to turn the display off. Press or turn any faceplate button to turn the display on.

### Vehicle Settings

The following list of menu items may be available:

- Climate and Air Quality
- Comfort and Convenience
- Collision Detection System
- Lighting
- Power Door Locks
- Remote Lock/Unlock/Start
- Return to Factory Settings?

### Climate and Air Quality

If equipped, select the Climate and Air Quality menu and the following may display:

- Auto Fan Speed
- Air Conditioning Mode
- Remote Start Auto Heat Seats

- Auto Defog
- Auto Rear Defog

### Auto Fan Speed

This allows the selection of the automatic fan speed. This feature sets the climate control fan speed to maintain the interior temperature.

Select High, Medium, or Low.

### Air Conditioning Mode

When on, the Air Conditioning will come on when the vehicle is started.

Select On, Off, or Last Setting.

### Remote Start Auto Heat Seats

On vehicles with remote start and heated seats, the heated seats can be set to on or off.

Select On or Off.



### Auto Defog

When selected and high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner or the

heater. The fan speed may slightly increase to help prevent fogging. When high humidity is no longer detected, the system will return to its prior operation.

Select or Deselect.

### Auto Rear Defog

When selected, this feature turns on the rear defogger at vehicle start when the interior temperature is cold and fog is likely. The auto rear defog function can be disabled by pressing . When off, the feature can be turned on by pressing . See "Rear Window Defogger" under *Climate Control Systems on page 8-1*.

Select or Deselect.

### Comfort and Convenience

If equipped, select the Comfort and Convenience menu and the following may display:

- Easy Exit Driver Seat
- Memory Remote Recall

- Chime Volume
- Button Volume
- Reverse Tilt Mirror
- Auto Reverse Gear Wiper

### Easy Exit Driver Seat

This feature moves the seat rearward allowing the driver more room to exit the vehicle.

Select On or Off.

### Memory Remote Recall

If equipped, this feature recalls the driver seat and outside mirrors to previously stored Remote Keyless Entry (RKE) transmitter memory positions when entering the vehicle. See *Memory Seats on page 3-6*.

Select On or Off.

### Chime Volume

This allows the selection of the chime volume level.

Select Normal or High.

### Button Volume

This allows the selection of the volume level when a button is pressed.

Select Normal or High.

### Reverse Tilt Mirror

This feature tilts the outside mirrors when the vehicle is in R (Reverse) allowing the driver to view the curb for parallel parking.

Select On or Off.

### Auto Reverse Gear Wiper

When selected, the rear wiper will intermittent wipe when the vehicle is shifted into R (Reverse). When deselected, the rear wiper will continuously wipe when the vehicle is shifted into R (Reverse).

Select or Deselect.

## 5-34 Instruments and Controls

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### Collision Detection System

Select the Collision Detection System menu and the following may display:

- Side Blind Zone Alert

### Side Blind Zone Alert

This allows this feature to be turned on or off. See *Side Blind Zone Alert (SBZA)* on page 9-36.

Select On or Off.

### Lighting

Select the Lighting menu and the following may display:


- Exit Lighting
- Vehicle Locator Lights

### 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, 1 Minute, or 2 Minutes.

### Vehicle Locator Lights

This allows the headlamps, parking lamps, taillamps, and most of the interior lamps to turn on briefly when  is pressed.

Select or Deselect.

### Power Door Locks

Select Power Door Locks and the following may display:

- Open Door Anti Lock Out
- Auto Door Unlock
- Delayed Door Lock

### Open Door Anti Lock Out

When selected, this feature will keep the driver door from locking when the door is open. When deselected, the Delayed Door Lock menu will be available and the door will lock as programmed through this menu.

Select or Deselect.

### Auto Door Unlock

This allows selection of which of the doors will automatically unlock when the vehicle is shifted into P (Park).

Select All Doors, Driver Door, or OFF.

### Delayed Door Lock

When selected, this feature will delay the locking of the doors after the last door is closed.

Select or Deselect.

### Remote Lock/Unlock/Start

Select Remote Lock/Unlock/Start and the following may display:

- Remote Unlock Feedback
- Remote Lock Feedback
- Remote Door Unlock

### Remote Unlock Feedback

This allows selection of what type of feedback is given when unlocking the vehicle with the RKE transmitter.


Select Flash Lights or Off.




### **Remote Lock Feedback**

This allows selection of what type of feedback is given when locking the vehicle with the RKE transmitter.

Select Lights and Horn, Lights Only, Horn Only, or Off.

### **Remote Door Unlock**

This allows selection of which doors will unlock when pressing  on the RKE transmitter.

When set to Driver Door, the driver door will unlock the first time  is pressed and all doors will unlock when  is pressed a second time. When set to All Doors, all of the doors will unlock at the first press of .

Select Driver Door or All Doors.

### **Return to Factory Settings?**

Select Return to Factory Settings? to return all vehicle personalization to the default settings.

Select Yes or No



## Lighting

### Exterior Lighting

Exterior Lamp Controls .....	6-1
Headlamp High/Low-Beam Changer .....	6-2
Flash-to-Pass .....	6-2
Daytime Running Lamps (DRL) .....	6-2
Automatic Headlamp System .....	6-3
Hazard Warning Flashers .....	6-3
Turn and Lane-Change Signals .....	6-4
Front Fog Lamps .....	6-4

### Interior Lighting

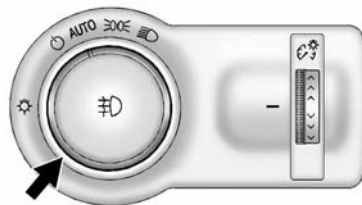
Instrument Panel Illumination Control .....	6-5
Courtesy Lamps .....	6-5
Dome Lamps .....	6-5
Reading Lamps .....	6-6

### Lighting Features

Entry Lighting .....	6-6
Exit Lighting .....	6-6
Battery Power Protection .....	6-6

## Exterior Lighting

### Exterior Lamp Controls



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

There are four positions:

**OFF** (Off): Briefly turn to this position to turn the automatic lamp control off or on again.

**AUTO (Automatic):** Turns the headlamps on automatically at normal brightness, together with the parking lamps, taillamps, license plate lamps, sidemarker lamps, and instrument panel lights.

**PARKING LAMPS** (Parking Lamps): Turns on the parking lamps, taillamps, license plate lamps, sidemarker lamps, and instrument panel lights.

**HEADLAMPS** (Headlamps): Turns on the headlamps, parking lamps, taillamps, license plate lamps, sidemarker lamps, and instrument panel lights. A warning chime sounds if the driver door is opened when the ignition switch is off and the headlamps are on.

**FRONT FOG LAMPS, If Equipped** (Front Fog Lamps, If Equipped): Press to turn the lamps on or off.

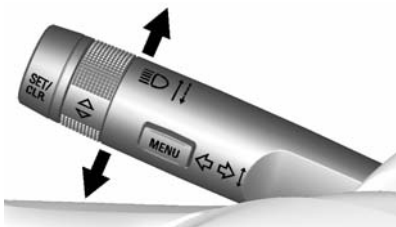
See *Front Fog Lamps* on page 6-4.


When the lights are on, **PARKING LAMPS** will be lit. See *Lamps On Reminder* on page 5-21.



## 6-2 Lighting

### Headlamp High/ Low-Beam Changer



 (Headlamp High/Low-Beam Changer): Push the turn signal lever away from you and release, to turn the high beams on.

To return to low beams, push the lever again or pull it toward you and release.



This indicator light turns on in the instrument cluster when the high-beam headlamps are on.

### Flash-to-Pass

To flash the high beams, pull the turn signal lever all the way toward you. Then release it.

### Daytime Running Lamps (DRL)

Daytime Running Lamps can make it easier for others to see the front of your vehicle during the day. Fully functional daytime running lamps are required on all vehicles first sold in Canada.

A light sensor on top of the instrument panel makes the DRL work, so be sure it is not covered.

The DRL system makes the low-beam headlamps come on at a reduced brightness when the following conditions are met:

- The ignition is in the ON/RUN mode.

- The exterior lamp control is in AUTO.
- The engine is running.

When the DRL are on, only the low-beam headlamps, at a reduced level of brightness, will be on. The taillamps, sidemarker, instrument panel, and other lamps will not be on.

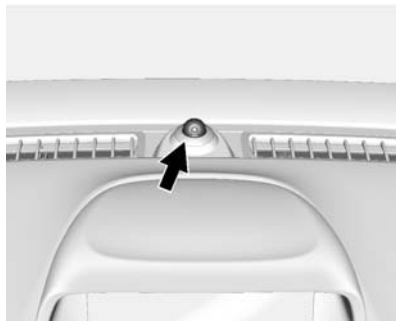
The headlamps automatically change from DRL to the regular headlamps depending on the darkness of the surroundings. The other lamps that come on with the headlamps will also come on.

When it is bright enough outside, the headlamps go off and the DRL come on.

To turn the DRL off or on again, turn the exterior lamp control to the off position and then release. For vehicles first sold in Canada, the DRL cannot be turned off.

## Automatic Headlamp System

When it is dark enough outside and the exterior lamp control is in the automatic position, the headlamps come on automatically. See *Exterior Lamp Controls* on page 6-1.





The vehicle has a light sensor on top of the instrument panel. Make sure it is not covered, or the headlamps will be on when they are not needed.

The system may also turn on the headlamps when driving through a parking garage or tunnel.

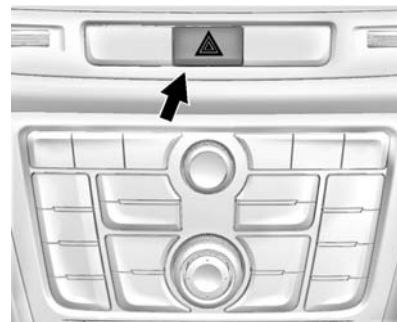
If the vehicle is started in a dark garage, the automatic headlamp system comes on immediately. If it is light outside when the vehicle leaves the garage, there is a slight delay before the automatic headlamp system changes to the DRL. During that delay, the instrument cluster may not be as bright as usual. Make sure the instrument panel brightness control is in the full bright position. See *Instrument Panel Illumination Control* on page 6-5.


### 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.

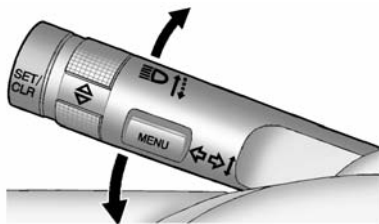
## Hazard Warning Flashers



 **(Hazard Warning Flasher):** Press and momentarily hold this button to make the front and rear turn signal lamps flash on and off. This warns others that you are having trouble. Press and momentarily hold again to turn the flashers off.

## 6-4 Lighting

### Turn and Lane-Change Signals



Move the lever all the way up or down to signal a turn.

An arrow on the instrument cluster will flash in the direction of the turn or lane change.

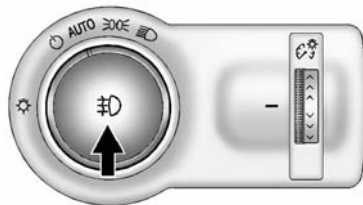
Raise or lower the lever until the arrow starts to flash to signal a lane change. The turn signal flashes three times.

The lever returns to its starting position when it is released.

If after signaling a turn or lane change the arrow flashes rapidly or does not come on, a signal bulb

may be burned out. Replace any burned out bulbs. If a bulb is not burned out, check the fuse. See *Fuses and Circuit Breakers on page 10-27.*

### Front Fog Lamps



If the vehicle is equipped with front fog lamps, the button is on the outboard side of the instrument panel.

The ignition must be on to turn on the fog lamps.

**F** (Front Fog Lamps): Press to turn the fog lamps on or off. An indicator light on the instrument cluster comes on when the fog lamps are on.

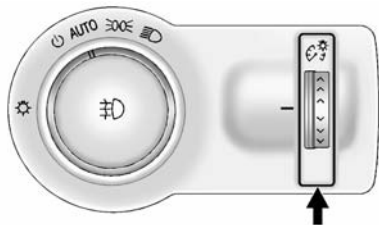
The fog lamps come on together with the parking lamps.

If the high-beam headlamps are turned on, the fog lamps will turn off. If the high-beam headlamps are turned off, the fog lamps will turn back on again.

Some localities have laws that require the headlamps to be on along with the fog lamps.

## Interior Lighting

### Instrument Panel Illumination Control



This feature controls the brightness of the instrument panel controls and infotainment display screen. The thumbwheel is to the left of the steering column on the instrument panel.

**(Instrument Panel Brightness):** Move the thumbwheel up or down and hold, to brighten or dim the instrument panel controls and infotainment display screen.

## Courtesy Lamps

The courtesy lamps come on automatically when any door is opened and the dome lamp is in the door position.

## Dome Lamps

### Front and Rear Dome Lamps

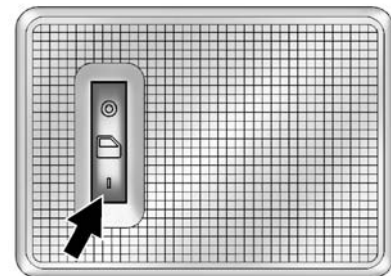


The front dome lamp controls are in the overhead console.

**(Dome Lamp Override):** Press to turn the lamps off, even when a door is open.

**(Door):** When the button is returned to the middle position, the lamps turn on automatically when a door is opened.


**(On):** Press to turn on the dome lamps.



The rear dome lamp controls are in the headliner above the rear seats.

**(Dome Lamp Override):** Press to turn the lamps off, even when a door is open.

## 6-6 Lighting



 **(Door):** When the button is returned to the middle position, the lamps turn on automatically when a door is opened.

**(On):** Press to turn on the dome lamps.

### Reading Lamps



The front reading lamps are in the overhead console.

 or  **(Reading Lamps):** Press to turn each lamp on or off.

## Lighting Features

### Entry Lighting

The headlamps, parking lamps, taillamps, back-up lamps, and most of the interior lamps turn on briefly at night or in areas of limited lighting when  is pressed on the Remote Keyless Entry (RKE) transmitter. After about 30 seconds the exterior lamps turn off, and then the dome and remaining interior lamps will dim to 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 on page 5-30*.

### Exit Lighting

The headlamps, taillamps, parking lamps, back-up lamps, and license plate lamps come on at night, or in

areas with limited lighting, when the key is removed from the ignition. The dome lamps also come on when the key is removed from the ignition. The exterior lamps and dome lamps remain on after the door is closed for a set amount of time, then automatically turn off.

The exterior lamps turn off immediately by turning the exterior lamps control off.

The exit lighting feature can be changed. See *Vehicle Personalization on page 5-30*.

### Battery Power Protection

The battery saver feature is designed to protect the vehicle's battery.

If some interior lamps or the manual parking lamps or headlamps are left on and the ignition is turned off, the battery rundown protection system automatically turns the lamp off after some time.

# Infotainment System

## Introduction

Infotainment ..... 7-1

## Introduction

### Infotainment

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



## Climate Controls

### Climate Control Systems

Climate Control Systems .....	8-1
Dual Automatic Climate Control System .....	8-3

### Air Vents

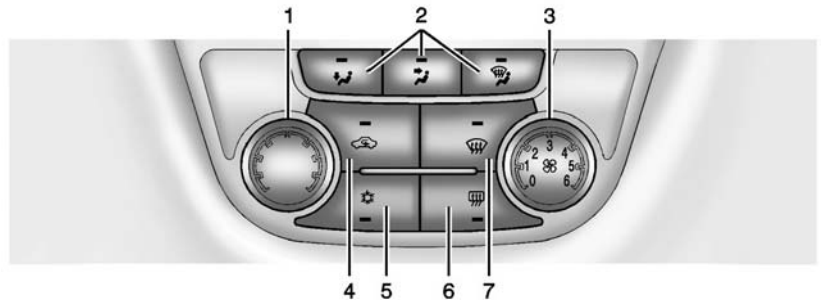
Air Vents .....	8-6
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### Maintenance


Air Intake .....	8-6
Passenger Compartment Air Filter .....	8-6

## Climate Control Systems

The heating, cooling, defrosting, and ventilation for the vehicle can be controlled with this system.






1. Temperature Control
2. Air Delivery Modes
3. Fan Control
4. Recirculation
5. Air Conditioning
6. Rear Window Defogger
7. Defrost


 **(Fan Control):** Turn the knob clockwise or counterclockwise to increase or decrease the fan speed. Turn the knob completely to 0 to turn off the fan and air conditioning compressor.





## 8-2 Climate Controls


**Temperature Control:** Turn the knob clockwise or counterclockwise to increase or decrease the temperature setting.

**Air Delivery Mode Control:** Press , , or  to change the direction of the airflow. Air delivery mode settings can be combined. An indicator light comes on in the selected mode button.

 **(Floor):** Air is directed to the floor outlets.

 **(Vent):** Air is directed to the instrument panel outlets.


 **(Defog):** Air is directed to the windshield and side window vents.



 **(Defrost):** Press to clear the windshield of fog or frost more quickly. Air is directed to the windshield.

For best results, clear all snow and ice from the windshield before defrosting.


Do not drive the vehicle until all the windows are clear.

### Air Conditioning

 **(Air Conditioning):** Press to turn the air conditioning on or off. An indicator light comes on. If the fan is turned off or the outside temperature falls below freezing, the air conditioning compressor will not work.

 **(Recirculation):** Press to turn on the recirculation. An indicator light comes on. Air is recirculated inside the vehicle. It helps to quickly cool the air inside the vehicle or reduce entry of outside air and odors. To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather when the temperature is set to the coldest setting. The recirculation light will not come on. Press  to select recirculation; press it again to select outside air.

### Rear Window Defogger

 **(Rear Defogger):** 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 defogger only works when the ignition is in ON/RUN. The defogger turns off if the ignition is in the ACC/ACCESSORY or LOCK/OFF position.

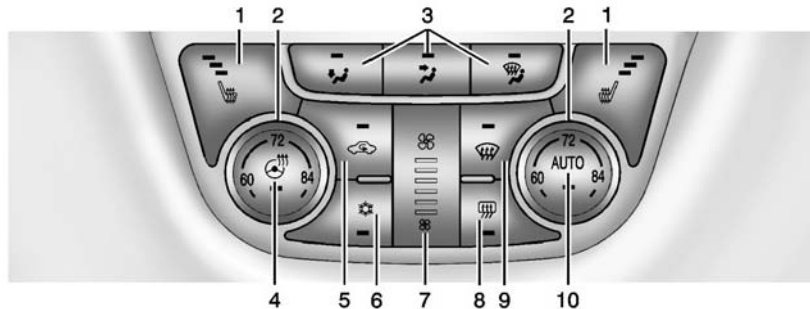
Do not drive the vehicle until all the windows are clear.

#### Caution

Do not use a razor blade or sharp object to clear the inside rear window. Do not adhere anything to the defogger grid lines in the rear glass. These actions may damage the rear defogger. Repairs would not be covered by the vehicle warranty.

## Dual Automatic Climate Control System

If equipped, the heating, cooling, and ventilation for the vehicle can be controlled with this system.



- |   |   |
|---|---|
| <ol style="list-style-type: none"> <li>1. Driver and Passenger Heated Seats (If Equipped)</li> <li>2. Driver and Passenger Temperature Controls</li> <li>3. Air Delivery Modes</li> <li>4. Heated Steering Wheel (If Equipped)</li> </ol> | <ol style="list-style-type: none"> <li>5. Recirculation</li> <li>6. Air Conditioning</li> <li>7. Fan Controls</li> <li>8. Rear Window Defogger</li> <li>9. Defrost</li> <li>10. AUTO (Automatic Operation)</li> </ol> |
|---|---|

### Automatic Operation

The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.


When the AUTO indicator light is on, the system is in full automatic operation. If the air delivery mode or fan setting is manually adjusted, the auto indicator turns off and displays will show the selected settings.

To place the system in automatic mode do the following:

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


## 8-4 Climate Controls

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 Driver Information Center (DIC). See *Driver Information Center (DIC) on page 5-22*.

### Manual Operation


 **(Fan Control):** Press the lower  button to decrease the fan speed. Pressing the lower button longer turns the fan and cooling off.

Press the upper  button to increase the fan speed. The selected fan speed is indicated by a number on the display screen.


Press AUTO to return to automatic operation.


**Air Delivery Modes:** Press , , or  to change the direction of the airflow. Air delivery mode settings can be combined. An indicator light comes on in the selected mode button.

Changing the mode cancels the automatic operation and the system goes into manual mode. Press AUTO to return to automatic operation.


 **(Floor):** Air is directed to the floor outlets.

 **(Vent):** Air is directed to the instrument panel outlets.


 **(Defog):** Air is directed to the windshield and side window vents.

 **(Defrost):** Press to clear the windshield of fog or frost more quickly. Air is directed to the windshield.

For best results, clear all snow and ice from the windshield before defrosting.

 **(Air Conditioning):** Press to turn the automatic air conditioning on or off. If the fan is turned off or the outside temperature falls below freezing, the air conditioning compressor will not run.

Press AUTO to return to automatic operation and the air conditioner runs as needed. When the indicator light is on, the air conditioner runs automatically to cool the air inside the vehicle or to dry the air needed to defog the windshield faster.

 **(Recirculation):** Press to turn on recirculation. An indicator light comes on. Air is recirculated to quickly cool the inside of the vehicle or reduce entry of outside air and odors.

**Auto Defog:** The climate control system may have a sensor to automatically detect high humidity inside the vehicle. When high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner. If the climate control system does not detect possible window fogging, it returns to normal operation. To turn Auto Defog off or on, see "Climate and Air Quality" under *Vehicle Personalization on page 5-30*.

## Rear Window Defogger

### (Rear Window Defogger):

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 defogger only works when the ignition is in ON/RUN. The defogger turns off if the ignition is in the ACC/ACCESSORY or LOCK/OFF position.


The rear window defogger can be set to automatic operation; see “Climate and Air Quality” under *Vehicle Personalization on page 5-30*. When auto rear defog is selected, the rear window defogger turns on automatically when the interior temperature is cold and the outside temperature is about 4°C (40°F) and below. The auto rear defogger turns off automatically after about 10 minutes. At higher speeds, the rear window defogger may stay on continuously.

For vehicles with heated outside rearview mirrors, they turn on when the rear window defogger button is on and help to clear fog or frost from the surface of the mirrors. See *Heated Mirrors on page 2-14*.

### 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.

 or  (Heated Seats, If Equipped): Press to turn the heated seats on or off. See *Heated Front Seats on page 3-8*.

 (Heated Steering Wheel, If Equipped): Press to turn the heated steering wheel on or off. See *Heated Steering Wheel on page 5-2*.

### Remote Start Climate Control

**Operation:** For vehicles with the remote vehicle start feature, the climate control system may run when the vehicle is started remotely. The system uses the driver's previous settings to heat or cool the inside of the vehicle. The rear defog may come on during remote start based on cold ambient conditions. The rear defog indicator light does not come on during a remote start. If the vehicle has front heated seats, they may come on during a remote start. The heated seat indicator lights do not come on during a remote start. See *Remote Vehicle Start on page 2-5* and *Heated Front Seats on page 3-8*.

### Sensors

The solar sensor, located 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.

### Air Vents

Use the louvers located on the air vents to change the direction of the airflow.

Use the thumbwheels near the air vents to control the amount of airflow or to shut off the airflow.

#### Operation Tips

- Keep all outlets open whenever possible for best system performance.
- Keep the paths under all seats clear of objects to help circulate the air inside the vehicle more effectively.
- Use of non-GM approved hood deflectors can adversely affect the performance of the system.

### Maintenance

#### Air Intake

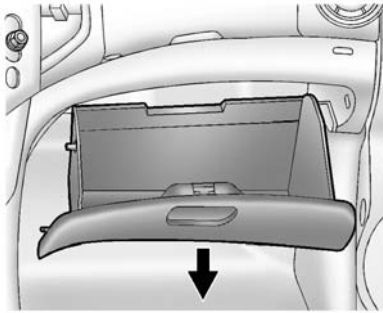
Clear away any ice, snow, or leaves from the air intake at the base of the windshield that can block the flow of air into the vehicle.

#### Passenger Compartment Air Filter

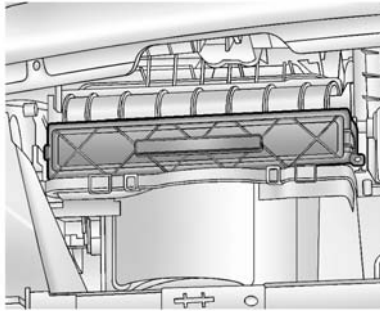
The filter removes dust, pollen, and other airborne irritants from outside air that is pulled into the vehicle.

The filter should be replaced as part of routine scheduled maintenance. See *Maintenance Schedule on page 11-2*. To find out what type of filter to use, see *Maintenance Replacement Parts on page 11-13*.

1. Open the glove box completely and disconnect the damper on the outboard side.



2. Push in both sides of the glove box and pull to remove.
3. Open the filter cover by releasing tabs on both sides and pulling up the cover.



4. Replace the air filter.
5. Close the air filter cover and reinstall the glove box.

See your dealer if additional assistance is needed.



# Driving and Operating

## Driving Information

Driver Behavior .....	9-2
Driving Environment .....	9-2
Vehicle Design .....	9-2
Distracted Driving .....	9-2
Defensive Driving .....	9-3
Drunk Driving .....	9-3
Control of a Vehicle .....	9-4
Braking .....	9-4
Steering .....	9-4
Off-Road Recovery .....	9-5
Loss of Control .....	9-5
Driving on Wet Roads .....	9-6
Hill and Mountain Roads .....	9-7
Winter Driving .....	9-7
If the Vehicle Is Stuck .....	9-9
Vehicle Load Limits .....	9-10

## Starting and Operating

New Vehicle Break-In .....	9-14
Ignition Positions .....	9-14
Starting the Engine .....	9-16
Engine Heater .....	9-17

Retained Accessory Power (RAP) .....	9-19
Shifting Into Park .....	9-19
Shifting out of Park .....	9-20
Parking over Things That Burn .....	9-22

## Engine Exhaust

Engine Exhaust .....	9-22
Running the Vehicle While Parked .....	9-23

## Automatic Transmission

Automatic Transmission .....	9-23
Manual Mode .....	9-25

## Drive Systems

All-Wheel Drive .....	9-26
-----------------------	------

## Brakes

Antilock Brake System (ABS) .....	9-26
Parking Brake .....	9-27
Brake Assist .....	9-27

## Ride Control Systems

Traction Control/Electronic Stability Control .....	9-28
---	------

## Cruise Control

Cruise Control .....	9-30
----------------------	------

## Driver Assistance Systems

Forward Collision Alert (FCA) System .....	9-33
Parking Assist .....	9-34
Side Blind Zone Alert (SBZA) .....	9-36
Rear Vision Camera (RVC) .....	9-38
Lane Departure Warning (LDW) .....	9-40

## Fuel

Fuel .....	9-42
California Fuel Requirements .....	9-43
Fuels in Foreign Countries .....	9-43
Fuel Additives .....	9-43
Filling the Tank .....	9-43
Filling a Portable Fuel Container .....	9-45

## Towing

General Towing Information .....	9-46
----------------------------------	------

## Conversions and Add-Ons

Add-On Electrical Equipment .....	9-46
-----------------------------------	------



### Driving Information

#### Driver Behavior

Driving is an important responsibility. Driver behavior, the driving environment, and the vehicle's design all affect how well a vehicle performs.

Being aware of these factors can help in understanding how the vehicle handles and what can be done to avoid many types of crashes, including a rollover crash.

Most serious injuries and fatalities to unbelted occupants can be reduced or prevented by the use of safety belts. In a rollover crash, an unbelted person is significantly more likely to die than a person wearing a safety belt. In addition, avoiding excessive speed, sudden or abrupt turns, and drunken or aggressive driving can help make trips safer and avoid the possibility of a crash.

#### Driving Environment

Be prepared for driving in inclement weather, at night, or during other times where visibility or traction may be limited, such as on curves, slippery roads, or hilly terrain. Unfamiliar surroundings can also have hidden hazards.

#### Vehicle Design

Utility vehicles have a significantly higher rollover rate than other types of vehicles. This is because they have a higher ground clearance and a narrower track or shorter wheelbase than passenger cars, which makes them more capable for off-road driving. While these design characteristics provide the driver with a better view of the road, these vehicles do have a higher center of gravity than other types of vehicles. A utility vehicle does not handle the same as a vehicle with a lower center of gravity, like a car, in similar situations.

Safe driver behavior and understanding of the environment can help avoid a rollover crash in any type of vehicle, including utility vehicles.

#### Distracted Driving

Distraction comes in many forms and can take your focus from the task of driving. Exercise good judgment and do not let other activities divert your attention away from the road. Many local governments have enacted laws regarding driver distraction. Become familiar with the local laws in your area.

To avoid distracted driving, always keep your eyes on the road, hands on the wheel, and mind on the drive.

- Do not use a phone in demanding driving situations. Use a hands-free method to place or receive necessary phone calls.

- Watch the road. Do not read, take notes, or look up information on phones or other electronic devices.
- Designate a front seat passenger to handle potential distractions.
- Become familiar with vehicle features before driving, such as programming favorite radio stations and adjusting climate control and seat settings. Program all trip information into any navigation device prior to driving.
- Wait until the vehicle is parked to retrieve items that have fallen to the floor.
- Stop or park the vehicle to tend to children.
- Keep pets in an appropriate carrier or restraint.
- Avoid stressful conversations while driving, whether with a passenger or on a cell phone.

 **Warning**

Taking your eyes off the road too long or too often could cause a crash resulting in injury or death. Focus your attention on driving.

Refer to the infotainment section for more information on using that system. Refer to the infotainment manual for more information on 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 safety belt. See *Safety Belts on page 3-14*.

- Assume that other road users (pedestrians, bicyclists, and other drivers) are going to be

careless and make mistakes. Anticipate what they might do and be ready.

- Allow enough following distance between you and the driver in front of you.
- Focus on the task of driving.

**Drunk Driving**

Death and injury associated with drinking and driving is a global tragedy.

 **Warning**

Drinking and then driving is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious — or even fatal — collision if you drive after drinking.

(Continued)

## 9-4 Driving and Operating

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### Warning (Continued)

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

The 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 wheel is turned until it reaches the end of its travel and is held against that position for an extended period of time, power steering assist may be reduced.

If the steering assist is used for an extended period of time, power 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

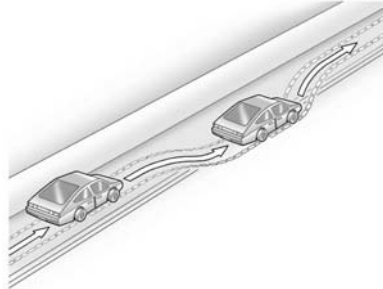
- Take curves at a reasonable speed.
- Reduce speed before entering a curve.
- Maintain a reasonable steady speed through the curve.

- 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.
- The 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.

## 9-6 Driving and Operating

If the vehicle starts to slide, follow these suggestions:

- Ease your foot off the accelerator pedal and steer the way you want the vehicle to go. The vehicle may straighten out. Be ready for a second skid if it occurs.
- Slow down and adjust your driving according to weather conditions. Stopping distance can be longer and vehicle control can be affected when traction is reduced by water, snow, ice, gravel, or other material on the road. Learn to recognize warning clues — such as enough water, ice, or packed snow on the road to make a mirrored surface — and slow down when you have any doubt.
- Try to avoid sudden steering, acceleration, or braking, including reducing vehicle speed by shifting to a lower gear. Any sudden changes could cause the tires to slide.

Remember: Antilock brakes help avoid only the braking skid.

### Driving on Wet Roads

Rain and wet roads can reduce vehicle traction and affect your ability to stop and accelerate. Always drive slower in these types of driving conditions and avoid driving through large puddles and deep-standing or flowing water.

#### Warning

Wet brakes can cause crashes. They might not work as well in a quick stop and could cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car/vehicle wash, lightly apply the brake pedal until the brakes work normally.

(Continued)

#### Warning (Continued)

Flowing or rushing water creates strong forces. Driving through flowing water could cause the vehicle to be carried away. If this happens, you and other vehicle occupants could drown. Do not ignore police warnings and be very cautious about trying to drive through flowing water.

### Hydroplaning

Hydroplaning is dangerous. Water can build up under the vehicle's tires so they actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When the vehicle is hydroplaning, it has little or no contact with the road.

There is no hard and fast rule about hydroplaning. The best advice is to slow down when the road is wet.

### Other Rainy Weather Tips

Besides slowing down, other wet weather driving tips include:


- Allow extra following distance.
- Pass with caution.
- Keep windshield wiping equipment in good shape.
- Keep the windshield washer fluid reservoir filled.
- Have good tires with proper tread depth. See *Tires on page 10-35*.
- 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 for driving in these conditions include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, tires, cooling system, and transmission.

- Shift to a lower gear when going down steep or long hills.

 <b>Warning</b>
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.

 <b>Warning</b>
Coasting downhill in N (Neutral) or with the ignition off is dangerous. This can cause overheating of the brakes and loss of steering. Always have the engine running and the vehicle in gear.

- Stay in your own lane. Do not swing wide or cut across the center of the road. Drive at speeds that let you stay in your own lane.
- Be alert on top of hills; something could be in your lane (stalled car, accident).
- Pay attention to special road signs (falling rocks area, winding roads, long grades, passing or no-passing zones) and take appropriate action.

### Winter Driving

#### Driving on Snow or Ice

Drive carefully when there is snow or ice between the tires and the road, creating less traction or grip. Wet ice can occur at about 0°C (32° F) when freezing rain begins to fall, resulting in even less traction. Avoid driving on wet ice or in freezing rain until roads can be treated with salt or sand.

## 9-8 Driving and Operating

Drive with caution, whatever the condition. Accelerate gently so traction is not lost. Accelerating too quickly causes the wheels to spin and makes the surface under the tires slick, so there is even less traction.

Traction Control should be turned on. See *Traction Control/Electronic Stability Control on page 9-28*.

The Antilock Brake System (ABS) improves vehicle stability during hard stops on slippery roads, but apply the brakes sooner than when on dry pavement. See *Antilock Brake System (ABS) on page 9-26*.

Allow greater following distance on any slippery road and watch for slippery spots. Icy patches can occur on otherwise clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering maneuvers and braking while on ice.

Turn off cruise control on slippery surfaces.

### Blizzard Conditions

Being stuck in snow can be a serious situation. Stay with the vehicle unless there is help nearby. If possible, use Roadside Assistance. See *Roadside Assistance Program on page 13-5*. To get help and keep everyone in the vehicle safe:

- Turn on the hazard warning flashers.
- Tie a red cloth to an outside mirror.

#### Warning

Snow can trap engine exhaust under the vehicle. This may cause exhaust gases to get inside. Engine exhaust contains carbon monoxide (CO) which

(Continued)

#### Warning (Continued)

cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle is stuck in the snow:

- Clear away snow from around the base of your vehicle, especially any that is blocking the exhaust pipe.
- Check again from time to time to be sure snow does not collect there.
- Open a window about 5 cm (2 in) on the side of the vehicle that is away from the wind to bring in fresh air.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to a setting that circulates the air inside the

(Continued)

**Warning (Continued)**

vehicle and set the fan speed to the highest setting. See “Climate Control Systems.”

For more information about carbon monoxide, see *Engine Exhaust* on page 9-22.

To save fuel, run the engine for only short periods as needed to warm the vehicle and then shut the engine off and close the window most of the way to save heat. Repeat this until help arrives but only when you feel really uncomfortable from the cold. Moving about to keep warm also helps.

If it takes some time for help to arrive, now and then when you run the engine, push the accelerator pedal slightly so the engine runs faster than the idle speed. This keeps the battery charged to restart the vehicle and to signal for help with the headlamps. Do this as little as possible to save fuel.

**If the Vehicle Is Stuck**

Slowly and cautiously spin the wheels to free the vehicle when stuck in sand, mud, ice, or snow.

If stuck too severely for the traction system to free the vehicle, turn the traction system off and use the rocking method. See *Traction Control/Electronic Stability Control* on page 9-28.

** Warning**

If the vehicle's tires spin at high speed, they can explode, and you or others could be injured. The vehicle can overheat, causing an engine compartment fire or other damage. Spin the wheels as little as possible and avoid going above 56 km/h (35 mph).

**Rocking the Vehicle to Get it Out**

Turn the steering wheel left and right to clear the area around the front wheels. Turn off any traction system. Shift back and forth between R (Reverse) and a low forward gear, spinning the wheels as little as possible. To prevent transmission wear, wait until the wheels stop spinning before shifting gears. Release the accelerator pedal while shifting, and press lightly on the accelerator pedal when the transmission is in gear. Slowly spinning the wheels in the forward and reverse directions causes a rocking motion that could free the vehicle. If that does not get the vehicle out after a few tries, it might need to be towed out. If the vehicle does need to be towed out, see *Towing the Vehicle* on page 10-65.



### Vehicle Load Limits

It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all nonfactory-installed options. Two labels on the vehicle show how much weight it may properly carry: the Tire and Loading Information label and the Certification label.

#### Warning

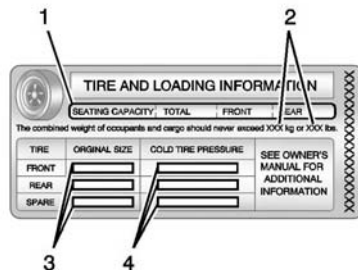
Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the

(Continued)

#### Warning (Continued)

vehicle handles. This could cause loss of control and a crash. Overloading can also shorten the life of the vehicle.

### Tire and Loading Information Label



#### Label Example

A vehicle-specific Tire and Loading Information label is attached to the vehicle's 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 tire size of the original equipment tires (3) and the recommended cold tire inflation pressures (4). For more information on tires and inflation see *Tires on page 10-35* and *Tire Pressure on page 10-43*.

There is also important loading information on the Certification label. It tells you the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle. See "Certification Label" later in this section.

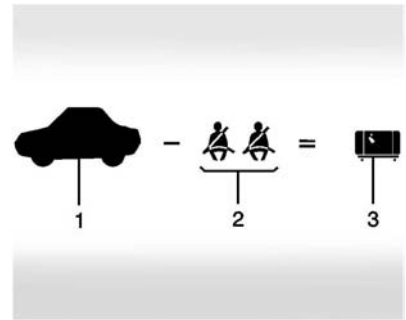
**“Steps for Determining Correct Load Limit–**

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.”

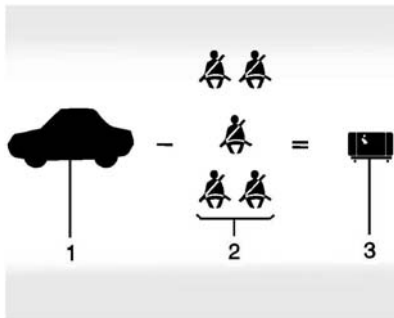
This vehicle is neither designed nor intended to tow a trailer.



**Example 1**

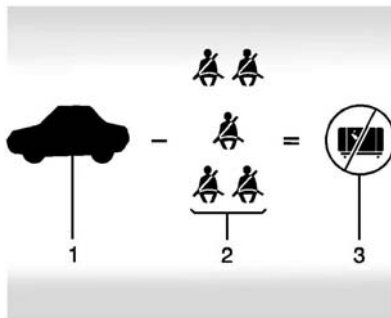
1. Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 68 kg (150 lbs) x 2 = 136 kg (300 lbs).
3. Available Occupant and Cargo Weight = 317 kg (700 lbs).

## 9-12 Driving and Operating



**Example 2**

1. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 68 kg (150 lbs) × 5 = 340 kg (750 lbs).
3. Available Cargo Weight = 113 kg (250 lbs).



**Example 3**

1. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 91 kg (200 lbs) × 5 = 453 kg (1,000 lbs).
3. Available Cargo Weight = 0 kg (0 lbs).

Refer to the vehicle's Tire and Loading Information label for specific information about the vehicle's capacity weight and

seating positions. The combined weight of the driver, passengers, and cargo should never exceed the vehicle's capacity weight.

### Certification Label

DATE	GVWR	GAWR FR	GAWR RR
THIS VEHICLE CONFORMS TO ALL APPLICABLE U.S. FEDERAL MOTOR VEHICLE SAFETY, BUMPER, AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.			
	TYPE: _____		

### Label Example

A vehicle-specific Certification label is attached to the vehicle's center pillar (B-pillar). The label tells the gross weight capacity of the vehicle, called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants,

fuel, and cargo. Never exceed the GVWR for the vehicle, or the Gross Axle Weight Rating (GAWR) for either the front or rear axle.

And, if there is a heavy load, it should be spread out. See “Steps for Determining Correct Load Limit” earlier in this section.

 **Warning**

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also shorten the life of the vehicle.

If you put things inside the vehicle — like suitcases, tools, packages, or anything else — they will go as fast as the vehicle goes. If you have to stop or turn quickly, or if there is a crash, they will keep going.

 **Warning**

Things inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. In the cargo area, put them as far forward as possible. Try to spread the weight evenly.

(Continued)

**Warning (Continued)**

- 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.
- Secure loose items in the vehicle.
- Do not leave a seat folded down unless needed.

# 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:

- 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 replacement. Follow this

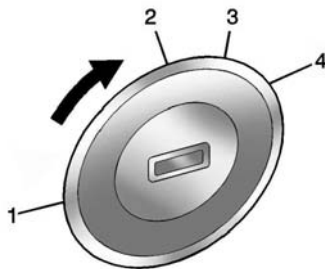
(Continued)

### Caution (Continued)

breaking-in guideline every time you get new brake linings.

Following break-in, engine speed and load can be gradually increased.

## Ignition Positions



The ignition switch has four different positions.

The key must be fully extended to start the vehicle.

To shift out of P (Park), the ignition must be in ON/RUN and the regular brake pedal applied.

**1 (STOPPING THE ENGINE/LOCK/OFF):** When the vehicle is stopped, turn the ignition switch to LOCK/OFF to turn the engine off.

This position locks the ignition and transmission. The steering wheel may also lock, if equipped.

The ignition switch can bind in the LOCK/OFF position with the wheels turned off center. If this happens, move the steering wheel from right to left while turning the key to ACC/ACCESSORY. If this does not work, then the vehicle needs service.

Do not turn the engine off when the vehicle is moving. This will cause a loss of power assist in the brake and steering systems and disable the airbags.

If the vehicle must be shut off in an emergency:

1. Brake using a firm and steady pressure. Do not pump the brakes repeatedly. This may deplete power assist, requiring increased brake pedal force.
2. Shift the vehicle to N (Neutral). This can be done while the vehicle is moving. After shifting to N (Neutral), firmly apply the brakes and steer the vehicle to a safe location.
3. Come to a complete stop, shift to P (Park), and turn the ignition to LOCK/OFF. On vehicles with an automatic transmission, the shift lever must be in P (Park) to turn the ignition switch to the LOCK/OFF position.
4. Set the parking brake. See *Parking Brake on page 9-27*.

 **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, turn the ignition to ACC/ACCESSORY.

 **Caution**

Using a tool to force the key to turn in the ignition could cause damage to the switch or break the key. Use the correct key, make sure it is all the way in, and turn it only with your hand. If the key cannot be turned by hand, see your dealer.

**2 (ACC/ACCESSORY):** This is the position in which you can operate things like the radio and the windshield wipers when the engine is off.

**3 (ON/RUN):** This position can be used to operate the electrical accessories and to display some instrument cluster warning and indicator lights. This position can also be used for service and diagnostics, and to verify the proper operation of the malfunction indicator lamp as may be required for emission inspection purposes. The switch stays in this position when the engine is running.

If you leave the key in the ACC/ACCESSORY or ON/RUN position with the engine off, the battery could be drained. You may not be able to start the vehicle if the battery is allowed to drain for an extended period of time.

## 9-16 Driving and Operating

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**4 (START):** This is the position that starts the engine. When the engine starts, release the key. The ignition switch returns to ON/RUN for driving.

A warning tone will sound when the driver door is opened, the ignition is in ACC/ACCESSORY or LOCK/OFF, and the key is in the ignition. If the ignition becomes difficult to turn, see *Keys on page 2-1*.

### Key Lock Release

The vehicle may be equipped with an electronic key lock release system. This system is to prevent ignition key removal unless the shift lever is in P (Park).

### Starting the Engine

Move the shift lever to P (Park) or N (Neutral). To restart the vehicle when it 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 on page 9-46*.

### Starting Procedure

1. With your foot off the accelerator pedal, turn the ignition key to START. When the engine starts, let go of the ignition.

The idle speed will go down as your engine gets warm. Do not race the engine immediately after starting it. Operate the engine and transmission gently to allow the oil to warm up and lubricate all moving parts.

 **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 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  $-18^{\circ}\text{C}$  or  $0^{\circ}\text{F}$ ), 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 hold the key in START 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 key or 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

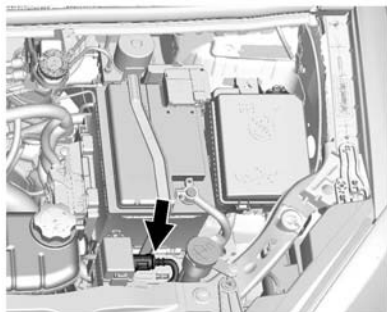
Vehicles with the 1.4L engine may have an engine heater. The engine heater can help in cold weather conditions at or below  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ) for easier starting and better fuel economy during engine warm-up. Plug in the heater at least four hours before starting the vehicle. An internal thermostat in the plug-end of the cord will prevent engine heater operation at temperatures above  $-18^{\circ}\text{C}$  ( $0^{\circ}\text{F}$ ).



## 9-18 Driving and Operating

### To Use The Engine Heater

1. Turn off the engine.



2. Open the hood and unwrap the electrical cord. The cord is located in the driver side of the engine compartment, near the battery. It is shipped from the factory with a tie holding it in place. Use care in removing the tie so that the cord is not damaged.

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 it 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 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

(Continued)

**Warning (Continued)**

overheat and cause a fire, property damage, electric shock, and injury.

- Do not operate the vehicle with the heater cord permanently attached to the 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)**

These vehicle accessories may be used for up to 10 minutes after the engine is turned off:

- Audio System
- Power Windows
- Sunroof

The power windows and sunroof will continue to work for up to 10 minutes or until any door is opened. The radio will work when the key is in ON/RUN or ACC/ACCESSORY. Once the key is turned from ON/RUN to LOCK/OFF,

the radio will continue to work for 10 minutes, or until the driver door is opened.

**Shifting Into Park**

1. Hold the brake pedal down and set the parking brake. See *Parking Brake on page 9-27*.
2. Move the shift lever into P (Park) by pressing the button on the shift lever and pushing the lever all the way toward the front of the vehicle.
3. Turn the ignition key to LOCK/OFF.
4. Remove the key and take it with you. If you can leave the vehicle with the ignition key in your hand, the vehicle is in P (Park).

### Leaving the Vehicle with the Engine Running (Automatic Transmission)

#### Warning

It can be dangerous to leave the vehicle with the engine running. It could overheat and catch fire.

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll.

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park on page 9-19*.

If you have to leave the vehicle with the engine running, be sure the vehicle is in P (Park) and the parking brake is firmly set before you leave it. After you have moved the shift lever into P (Park), hold the brake pedal down. Then see if you can move the shift lever away from P (Park) without first pushing the button on the shift lever. If you can, it means that the shift lever was not fully locked into P (Park).

### Torque Lock (Automatic Transmission)

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. To find out how, see “Shifting Into Park” previously in this section.

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, so you can pull the shift lever out of P (Park).

### Shifting out of Park

This vehicle is equipped with a shift lock control. The shift lock control is designed to:

- Prevent ignition key removal unless the shift lever is in P (Park) with the shift lever button fully released.
- Prevent movement of the shift lever out of P (Park) unless the ignition is in ON/RUN and the brake pedal is applied.

The shift lock control is always functional except in the case of an uncharged or low voltage (less than 9-volt) battery.

If the vehicle has an uncharged battery or a battery with low voltage, try charging or jump starting the battery. See *Jump Starting* on page 10-62.

To shift out of P (Park):

1. Apply the brake pedal.
2. Turn the ignition to ON/RUN.
3. Press the shift lever button.
4. Move the shift lever to the desired position.

If still unable to shift out of P (Park):

1. Fully release the shift lever button.
2. Hold the brake pedal down and press the shift lever button again.
3. Move the shift lever to the desired position.

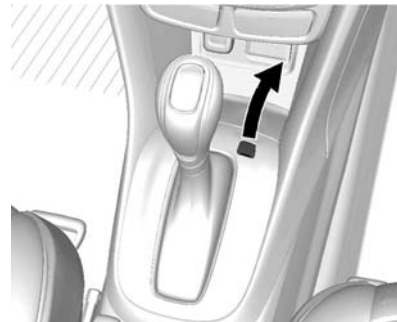
If the shift lever still cannot be moved from P (Park), see “Shift Lock Manual Release.”

### Shift Lock Manual Release

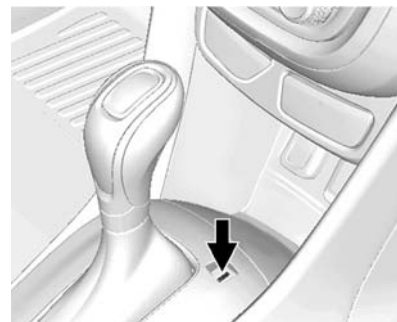
The automatic transmission has an electric park lock. The key must be in the ON/RUN position, and the brake pedal pressed so the shift lever can be moved from the P (Park) position. If the battery has lost power, the shift lever cannot be moved from P (Park) unless the shift lock manual release is disengaged manually.

To access the shift lock manual release:

1. Turn the ignition OFF and remove the key.
2. Hold the brake pedal down. Apply the parking brake.



3. Remove the cover on the console.



## 9-22 Driving and Operating

4. Insert and press the ignition key into the slot.
5. Move the shift lever out of P (Park). If P (Park) is selected again after the key is removed from the slot, the shift lever will be locked again.
6. Remove the key from the slot.
7. Close the cover.
8. Have the cause of the problem fixed by your dealer.

### Parking over Things That Burn

#### Warning

Things that can burn could touch hot exhaust parts under the vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

### Engine Exhaust

#### Warning

Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. Exposure to CO can cause unconsciousness and even death.

Exhaust may enter the vehicle if:

- The vehicle idles in areas with poor ventilation (parking garages, tunnels, deep snow that may block underbody airflow or tail pipes).
- The exhaust smells or sounds strange or different.
- The exhaust system leaks due to corrosion or damage.
- The vehicle exhaust system has been modified, damaged, or improperly repaired.

(Continued)

#### Warning (Continued)

- There are holes or openings in the vehicle body from damage or aftermarket modifications that are not completely sealed.

If unusual fumes are detected or if it is suspected that exhaust is coming into the vehicle:

- Drive it only with the windows completely down.
- Have the vehicle repaired immediately.

Never park the vehicle with the engine running in an enclosed area such as a garage or a building that has no fresh air ventilation.

## Running the Vehicle While Parked

It is better not to park with the engine running.

If the vehicle is left with the engine running, follow the proper steps to be sure the vehicle will not move. See *Shifting Into Park* on page 9-19 and *Engine Exhaust* on page 9-22.

## Automatic Transmission



The selected gear is also shown in the instrument cluster.

**P (Park):** This position locks the drive wheels. It is the best position to use when starting the engine because the vehicle cannot move easily.

### Warning

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll.

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park* on page 9-19.

Make sure the shift lever is fully in P (Park) before starting the engine. The vehicle has an automatic transmission shift lock control system. The regular brake must be fully applied first and then the shift lever button pressed before shifting from P (Park) when the ignition key

## 9-24 Driving and Operating

is in ON/RUN. If you cannot shift out of P (Park), ease pressure on the shift lever, then push the shift lever all the way into P (Park) as you maintain brake application. Then press the shift lever button and move the shift lever into another gear. See *Shifting out of Park on page 9-20*.

**R (Reverse):** Use this gear to back up.

### 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 on page 9-9*.

**N (Neutral):** In this position, the engine does not connect with the wheels. To restart the engine when the vehicle is already moving, use N (Neutral) only. Also, use N (Neutral) when the vehicle is being towed.

The vehicle has an automatic neutral shift feature which allows the transmission to automatically shift to N (Neutral) when the vehicle is stopped with a forward gear engaged. The reduced load on the engine improves vehicle fuel economy.

### 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.

**D (Drive):** This position is for normal driving. It provides the best fuel economy. If more power is needed for passing, and the vehicle is:

- Going less than 56 km/h (35 mph), push the accelerator pedal about halfway down.
- Going about 56 km/h (35 mph) or more, push the accelerator all the way down.

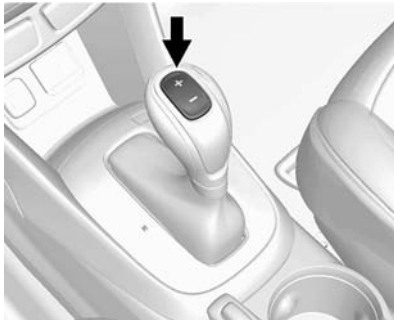
**M (Manual Mode):** This position allows shifting similar to a manual transmission. See *Manual Mode on page 9-25*.

**⚠ Caution**

If the vehicle accelerates slowly, or does not shift gears, the transmission could be damaged. Have the vehicle serviced right away.

**Manual Mode**

**Driver Shift Control (DSC)**



To use this feature:

1. Move the shift lever from D (Drive) rearward to M (Manual Mode).

While driving in manual mode, the transmission will remain in the driver selected gear. When coming to a stop in the manual position, the vehicle will automatically shift into 1 (First) gear.

2. Press the + (plus) end of the button on the top of the shift lever to upshift, or push the - (minus) end of the button to downshift.

The instrument cluster will change from the currently displayed message to the letter “M,” for Manual position, and a number indicating the requested gear.

While using the DSC feature, the transmission will have firmer shifting and sportier performance. This can be used for sport driving or when

climbing hills to stay in gear longer or to downshift for more power or engine braking.

The transmission will only allow you to shift into gears appropriate for the vehicle speed and engine revolutions per minute (rpm):

- The transmission will not allow shifting to the next higher gear if the vehicle speed or engine rpm is too low.
- The transmission will not allow shifting to the next lower gear if the vehicle speed or engine rpm is too high.



## Drive Systems

### All-Wheel Drive

If equipped, this feature transfers engine power, as required, to all four wheels. It is fully automatic, and adjusts itself as needed for road conditions.

When using a compact spare tire on an All-Wheel Drive (AWD) vehicle, the system automatically detects the compact spare and disables AWD to protect the system. A Driver Information Center (DIC) message will display on the instrument cluster. See *Vehicle Messages on page 5-25*. To restore AWD operation and prevent excessive wear on the system, replace the compact spare with a full-size tire as soon as possible. See *Compact Spare Tire on page 10-61*.

AWD will be disabled and the message will display if there is excessive wheel spin. When the system cools down, AWD will be restored.

## Brakes

### Antilock Brake System (ABS)

This vehicle has 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 might be heard while this test is going on, and it might even be noticed that the brake pedal moves a little. This is normal.



If there is a problem with ABS, this warning light stays on. See *Antilock Brake System (ABS) Warning Light on page 5-17*.

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.

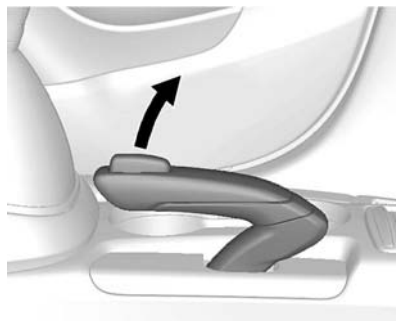
### Using ABS

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



To set the parking brake, hold the brake pedal down and pull up on the parking brake lever. If the ignition is on, the brake system warning light will come on. See *Brake System Warning Light* on page 5-16.

To release the parking brake, hold the brake pedal down. Pull the parking brake lever up until you can press the release button. Hold the release button in as you move the brake lever all the way down.

### 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.

### 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.

## Ride Control Systems

### Traction Control/ Electronic Stability Control

#### System Operation

The vehicle has a Traction Control System (TCS) and StabiliTrak<sup>®</sup>, an electronic stability control system. These systems help limit wheel slip and assist the driver in maintaining control, especially on slippery road conditions.

TCS activates if it senses that 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.

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 on page 9-9* and “Turning the Systems Off and On” later in this section.




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.

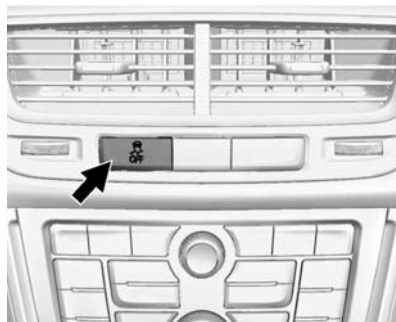
If either system fails to turn on or to activate, a message displays in the Driver Information Center (DIC), and  comes on and stays on to indicate that the system is inactive and is not assisting the driver in maintaining control. The vehicle is safe to drive, but driving should be adjusted accordingly.

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  button. The Traction Off Light  displays in the instrument cluster.

To turn TCS on again, press and release the  button. The Traction Off Light  displayed in the instrument cluster will turn off.

If TCS is limiting wheel spin when the  button is pressed, the system will not turn off until the wheels stop spinning.

To turn off both TCS and StabiliTrak, press and hold the  button until the Traction Off Light  and StabiliTrak Off Light  come on and stay on in the instrument cluster.

To turn TCS and StabiliTrak on again, press and release the  button. The Traction Off Light  and StabiliTrak Off Light  in the instrument cluster turn off.

Adding accessories can affect the vehicle performance. See *Accessories and Modifications on page 10-2*.

## Cruise Control

The cruise control lets the vehicle maintain a speed of about 40 km/h (25 mph) or more without keeping your foot on the accelerator. Cruise control does not work at speeds below 40 km/h (25 mph).

### 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.

The vehicle has a Traction Control System (TCS) or StabiliTrak system that begins to limit wheel spin while using cruise control and the cruise

control will automatically disengage. See *Traction Control/Electronic Stability Control on page 9-28*. If a collision alert occurs when cruise control is activated, cruise control is disengaged. See *Forward Collision Alert (FCA) System on page 9-33*. When road conditions allow you to safely use it again, cruise control can be turned back on.


If the brakes are applied, cruise control disengages.





 (On/Off): Press to turn the cruise control system on or off. A white indicator comes in the instrument cluster when cruise is turned on.

**RES/+ (Resume/Accel):** If there is a set speed in memory, move the thumbwheel up briefly to resume to that speed or hold upward to accelerate. If cruise control is already active, use to increase vehicle speed.


**SET/- (Set/Coast):** Move the thumbwheel down briefly to set the speed and activate cruise control. If cruise control is already active, use to decrease speed.

 (Cancel): 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 bumped and go into cruise when not desired. Keep  off when cruise control is not being used.

To set a speed:

1. Press  to turn cruise control on.
2. Get up to the speed desired.
3. Move the thumbwheel down toward SET/- and release it.
4. Remove your foot from the accelerator.

The cruise control indicator on the instrument cluster turns green after cruise control has been set to the desired speed. See *Instrument Cluster* on page 5-8.

### 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 is about 40 km/h (25 mph) or greater, move the thumbwheel up toward RES/+ briefly. The vehicle returns to the previously set speed.

### Increasing Speed While Using Cruise Control

If the cruise control system is already activated:

- Move the thumbwheel up toward RES/+ and hold it until the desired speed is reached, then release it.
- To increase vehicle speed in small increments, move the thumbwheel up toward RES/+ 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 *Driver Information Center (DIC)* on page 5-22. The increment value used depends on the units displayed.

### Reducing Speed While Using Cruise Control

If the cruise control system is already activated:

- Move the thumbwheel toward SET/- and hold until the desired lower speed is reached, then release it.
- To decrease the vehicle speed in small increments, move the thumbwheel toward SET/- 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 *Driver Information Center (DIC)* on page 5-22. 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 slows down to the previous



set cruise control speed. While pressing the accelerator pedal or shortly following the release to override cruise control, briefly moving the thumbwheel toward SET- will result in cruise set to the current vehicle speed.

### Using Cruise Control on Hills


How well cruise control works on hills depends on the vehicle speed, load, and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain the vehicle speed. When going downhill, you might have to brake or shift to a lower gear to keep your speed down. If the brake pedal is applied, cruise control will disengage.

### Ending Cruise Control

There are four ways to end cruise control:

- To disengage cruise control, step lightly on the brake pedal or the clutch pedal for manual transmissions.
- 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 vehicle is turned off.

## Driver Assistance Systems

### 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 visual alert and beeps.

FCA detects vehicles within a distance of approximately 60 m (197 ft) and operates at speeds above 40 km/h (25 mph).

#### 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

(Continued)

#### Warning (Continued)

warning with enough time to help avoid a crash. FCA does not warn of pedestrians, animals, signs, guardrails, bridges, construction barrels, or other objects. Be ready to take action and apply the brakes. For more information, see *Defensive Driving on page 9-3*.

FCA can be disabled with the FCA steering wheel control.

#### 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; or due to poor visibility. FCA will not detect another vehicle ahead until it is completely in the driving lane.

#### Warning

FCA does not provide a warning to help avoid a crash, unless it detects a vehicle. FCA may not detect a vehicle ahead if the FCA sensor is blocked by dirt, snow, or ice, or if the windshield is damaged. It may also not detect a vehicle on winding or hilly roads, or in conditions that can limit visibility such as fog, rain, or snow, or if the headlamps or windshield are not cleaned or in proper condition. Keep the windshield, headlamps, and FCA sensors clean and in good repair.

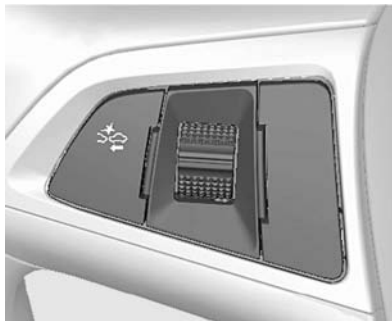



### Collision Alert



When your vehicle approaches another detected vehicle too rapidly, the FCA display will come on. Also, eight rapid high-pitched beeps will sound from the front. 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.

### Selecting the Alert Timing



The Collision Alert control is on the steering wheel. Press  to set the FCA timing to far, medium, or near, or on some vehicles, Off. The first button press shows the current setting on the DIC. Additional button presses will change this setting. The chosen setting will remain until it is changed and will affect the timing of both the Collision Alert and the Tailgating Alert features. The timing of both alerts will vary based on vehicle speed. The faster the vehicle speed, the farther away the

alert will occur. Consider traffic and weather conditions when selecting the alert timing. The range of selectable alert timings may not be appropriate for all drivers and driving conditions.

### Unnecessary Alerts

FCA may provide unnecessary alerts to turning vehicles, vehicles in other lanes, objects that are not vehicles, or shadows. These alerts are normal operation and the vehicle does not need service.

### Cleaning the System

If the FCA system does not seem to operate properly, cleaning the outside of the windshield in front of the rearview mirror may correct the issue.

### Parking Assist

If equipped, the Front and Rear Parking Assist (FRPA) system, assists the driver with parking and avoiding objects. FRPA operates at speeds less than 8 km/h (5 mph).

The sensors on the front and rear bumper detect objects up to 1.2 m (4 ft) in front of the vehicle, 2.5 m (8 ft) behind the vehicle, and at least 25 cm (10 in) off the ground and below liftgate level. This detection distance may be less during warmer or humid weather.

 **Warning**

The parking assist system does not detect children, pedestrians, bicyclists, animals, or objects located below the bumper or that are too close or too far from the vehicle. It is not available at speeds greater than 8 km/h (5 mph). To prevent injury, death, or vehicle damage, even with parking assist, always check the area around the vehicle and check all mirrors before moving forward or backing.

### How the System Works

When the vehicle is shifted into R (Reverse) the front and rear sensors are automatically turned on. After the vehicle is shifted out of R (Reverse), the rear sensors are turned off and the front sensors stay on until the vehicle is above a speed of 8 km/h (5 mph). For the front park assist system to be active again without shifting into R (Reverse), the park assist button on the center stack, forward of the shift lever, must be pressed. See “Turning the System On and Off” later in this section.

FRPA operates only at speeds less than 8 km/h (5 mph).

When the vehicle is in N (Neutral), the system may be active. If the vehicle is in a car wash, the sensors may detect objects in the car wash. See “Turning the System On and Off” later in this section to turn the system off.

High-toned beeps from the front speakers are for objects detected near the front bumper. Low-toned beeps from the rear speakers are for objects detected near the rear bumper. The interval between the beeps becomes shorter as the vehicle gets closer to the obstacle. When the distance is less than 30 cm (12 in) the beeping is a continuous tone for five seconds.

### Objects Detected by Both the Front and Rear Sensors

In general, if objects are detected at the same time near both the front and rear bumpers while backing up, the beeps only sound to indicate that objects are close to the rear bumper.

However, if an object comes within 0.3 m (1 ft) of the front bumper while the vehicle is backing up and at the same time there is another object further than 0.3 m (1 ft) from the rear bumper, then higher-pitched beeps only sound to indicate the front object.

### Turning the System On and Off

The FRPA system can be turned on and off by pressing the park assist button on the center stack, forward of the shift lever.



The indicator light in the button comes on when the system is turned on.

When the system is off, the indicator light in the button is off or PARK ASSIST OFF briefly displays on the Driver Information Center (DIC).

FRPA defaults to the on setting each time the vehicle is started.

### When the System Does Not Seem to Work Properly

The following messages may be displayed on the DIC:

**SERVICE PARKING ASSIST:** If this message occurs, take the vehicle to your dealer to repair the system.

**PARK ASSIST OFF:** If the FRPA system does not activate due to a temporary condition, the message displays on the DIC. This can occur under the following conditions:

- The driver has disabled the system.
- The sensors are not clean. Keep the vehicle's bumpers free of mud, dirt, snow, ice and slush. For cleaning instructions, see *Exterior Care on page 10-67*.
- The park assist sensors are covered by frost or ice. Frost or ice can form around and behind the sensors and may not always be seen; this can occur after washing the vehicle in cold

weather. The message may not clear until the frost or ice has melted.

- An object was hanging out of the liftgate during the last drive cycle. Once the object is removed, FRPA will return to normal operation.
- An object or cover is attached to the front of the vehicle.
- The bumper is damaged. Take the vehicle to your dealer to repair the system.
- Other conditions, such as vibrations from a jackhammer or the compression of air brakes on a very large truck, are affecting system performance.

### Side Blind Zone Alert (SBZA)

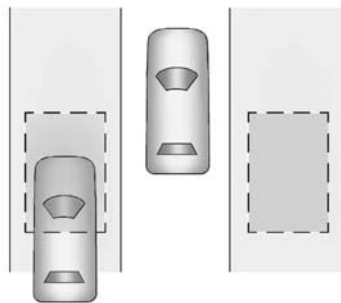
If equipped, the SBZA system is a lane-changing aid that assists drivers with avoiding crashes that occur with vehicles in the side blind zone (or spot) areas. The SBZA

warning display will light up in the corresponding outside side mirror and will flash if the turn signal is on.

**Warning**

SBZA does not alert the driver to vehicles rapidly approaching outside of the side blind 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.

**SBZA Detection Zones**

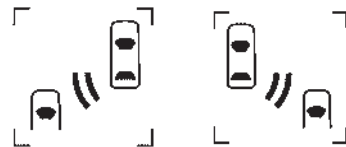


The SBZA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2 m (6 ft) off the ground. This zone starts at approximately the middle of the vehicle and goes back 5 m (16 ft).

**How the System Works**

The SBZA symbol lights up in the side mirrors when the system detects a vehicle in the next lane

over that is in the side blind zone. This indicates it may be unsafe to change lanes. Before making a lane change, check the SBZA display, check mirrors, glance over your shoulder, and use the turn signals.



**Left Side Mirror Display      Right Side Mirror Display**

When the vehicle is started, both outside mirror SBZA displays will briefly come on to indicate the system is operating. When the vehicle is moving forward, the left or right side mirror display will light up if a vehicle is detected in that blind zone. If the turn signal is activated in the same direction of a detected vehicle, this display will flash as an extra warning not to change lanes.

## 9-38 Driving and Operating

SBZA can be disabled through vehicle personalization. See "Collision/Detection Systems" under *Vehicle Personalization on page 5-30*. If SBZA is disabled by the driver, the SBZA mirror displays will not light up.

### When the System Does Not Seem to Work Properly

SBZA displays may not come on when passing a vehicle quickly. SBZA may alert to objects attached to the vehicle, such as a bicycle, or object extending out to either side of the vehicle. This is normal system operation; the vehicle does not need service.

SBZA may not always alert the driver to vehicles in the side blind zone, especially in wet conditions. The system does not need to be serviced. The system may light up due to guardrails, signs, trees, shrubs, and other non-moving objects. This is normal system operation; the vehicle does not need service.

SBZA may not operate when the SBZA sensors in the left or right corners of the rear bumper are covered with mud, dirt, snow, ice, or slush, or in heavy rainstorms. For cleaning instructions, see "Washing the Vehicle" under *Exterior Care on page 10-67*. 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 SBZA displays do not light up when vehicles are in the blind zone and the system is clean, the system may need service. Take the vehicle to your dealer.

When SBZA is disabled for any reason other than the driver turning it off, the Side Blind Zone Alert On option will not be available on the personalization menu.

### Radio Frequency Information

See *Radio Frequency Statement on page 13-12*.

## Rear Vision Camera (RVC)

The RVC can assist the driver when backing up by displaying a view of the area behind the vehicle.

### Warning

The RVC system does not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object located outside the camera's field of view, below the bumper, or under the vehicle. Perceived distances may be different from actual distances. Do not back the vehicle using only the RVC screen. Failure to use proper care before backing may result in injury, death, or vehicle damage. Always check behind and around the vehicle before backing.

An image appears on the infotainment screen with the message Check Surroundings for Safety when the vehicle is shifted into R (Reverse). The display goes to the previous screen after approximately 10 seconds once the vehicle is shifted out of R (Reverse).

To return to the previous screen sooner, do one of the following:

- Press a hard key on the infotainment system.
- Shift into P (Park).
- Reach a vehicle speed of 8 km/h (5 mph).

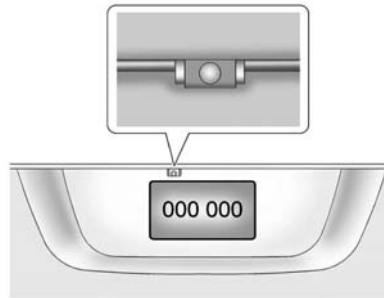
### Rear Cross Traffic Alert (RCTA)

On vehicles with the RCTA, a warning triangle with a left or right pointing arrow may also display on the RVC screen to warn of traffic coming from the left or the right. Three beeps will sound from the speaker on that side. This system detects objects coming from up to 20 m (65 ft) from the left or right side behind the vehicle. The RCTA

system will not work properly if ice, snow, mud, or anything else builds up on the rear bumper sensors.

Use caution while backing up when towing a trailer, as the RCTA detection zones that extend out from the back of your vehicle do not move further back when a trailer is towed.

### Rear Vision Camera Location

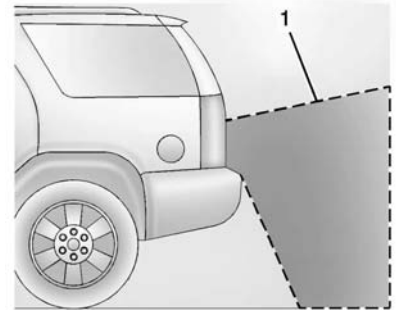


The camera is above the license plate.

The area displayed by the camera is limited.

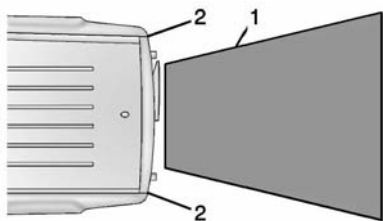
It does not display objects that are close to either corner or under the bumper and can vary depending on vehicle orientation or road conditions. Displayed images may be closer or farther than they appear.

The following illustrations show the field of view that the camera provides.



1. View displayed by the camera.

## 9-40 Driving and Operating



1. View displayed by the camera.
2. Corner of the rear bumper.

### When the System Does Not Seem To Work Properly

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

- It is dark.
- The sun or the beam of headlights is shining directly into the camera lens.
- Ice, snow, mud, or anything else builds up on the camera lens. Clean the lens, rinse it with water, and wipe it with a soft cloth.

- The back of the vehicle is in an accident, the position and mounting angle of the camera can change or the camera can be affected. Be sure to have the camera and its position and mounting angle checked at your dealer.
- There are extreme temperature changes.

### Lane Departure Warning (LDW)

If equipped, LDW may help avoid crashes due to unintentional lane departures. It may provide an alert if the vehicle is crossing a lane without using a turn signal in that direction. LDW uses a camera sensor to detect the lane markings at speeds of 56 km/h (35 mph) or greater.

#### **Warning**

The LDW system does not steer the vehicle. The LDW system may not:

- Provide enough time to avoid a crash.
- 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 LDW only detects lane markings on one side of the road, it will only warn you when departing the lane on the side where it has detected a lane


(Continued)

**Warning (Continued)**



marking. 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, and camera sensors clean and in good repair. Do not use LDW in bad weather conditions.

**How the System Works**

The LDW camera sensor is on the windshield ahead of the rearview mirror.

To turn LDW on and off, press  on the center stack, forward of the shift lever. The control indicator will light when LDW is on.



When LDW is on,  is green if LDW is available to warn of a lane departure. If the vehicle crosses a detected lane marking without using the turn signal in that direction,  changes to amber and flashes. Additionally, there will be three beeps on the right or left, depending on the lane departure direction.

**When the System Does Not Seem To Work Properly**

The system may not detect lanes as well when there are:

- Close vehicles ahead.
- Sudden lighting changes, such as when driving through tunnels.
- Banked roads.

If the LDW system is not functioning properly when lane markings are clearly visible, cleaning the windshield may help.

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 LDW off if these conditions continue.



### Fuel

Use of the recommended fuel is an important part of the proper maintenance of this vehicle. When driving in the U.S. and Canada, to help keep the engine clean and maintain optimum vehicle performance, we recommend using TOP TIER Detergent Gasolines. See [www.toptiergas.com](http://www.toptiergas.com) for a list of TOP TIER Detergent Gasolines.



Use regular unleaded gasoline meeting ASTM specification D4814 with a posted octane rating of 87 or

higher. Do not use gasoline with an octane rating below 87, as it may cause engine damage and will lower fuel economy.

#### Use of Seasonal Fuels

Use summer and winter fuels in the appropriate season. The fuels industry automatically modifies the fuel for the appropriate season. If fuel is left in the vehicle tank for long periods of time, driving or starting could be affected. Drive the vehicle until the fuel is at one-half tank or less, then refuel with the current seasonal fuel.

#### Prohibited Fuels

Gasolines containing oxygenates such as ethers and ethanol, as well as reformulated gasolines, are available in some cities. If these gasolines comply with the previously described specification, then they are acceptable to use. However, E85 (85% ethanol) and other fuels containing more than 15% ethanol must be used only in FlexFuel vehicles.

#### Caution

Do not use fuel containing methanol. It can corrode metal parts in the fuel system and also damage plastic and rubber parts. That damage would not be covered under the vehicle warranty.

Some gasolines, mainly high octane racing gasolines, can contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). Do not use gasolines and/or fuel additives with MMT as they can reduce spark plug life and affect emission control system performance. The malfunction indicator lamp may turn on. If this occurs, see your dealer for service.

## California Fuel Requirements

If the vehicle is certified to meet California Emissions Standards, it is designed to operate on fuels that meet California specifications. See the underhood emission control label. If this fuel is not available in states adopting California Emissions Standards, the vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance might be affected. The malfunction indicator lamp could turn on and the vehicle may not pass a smog-check test. See *Malfunction Indicator Lamp* on page 5-13. 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

If planning to drive in countries outside the U.S. or Canada, the proper fuel might be hard to find. Check regional auto club or fuel retail brand websites for availability in the country where driving. Never use leaded gasoline, fuel containing methanol, manganese, or any other fuel not recommended. Costly repairs caused by use of improper fuel would not be covered by the vehicle warranty.

## Fuel Additives

To keep fuel systems clean, TOP TIER Detergent Gasoline is recommended. See *Fuel* on page 9-42.

If TOP TIER Detergent Gasoline is not available, one bottle of Fuel System Treatment PLUS added to the fuel tank at every engine oil change, can help. Fuel System Treatment PLUS 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.
- Keep sparks, flames, and smoking materials away from fuel.
- Do not leave the fuel pump unattended.
- Do not reenter the vehicle while pumping fuel.


(Continued)

### Warning (Continued)

- Keep children away from the fuel pump and never let children pump fuel.
- Fuel can spray out if the fuel cap is opened too quickly. This spray can happen if the tank is nearly full, and is more likely in hot weather. Open the fuel cap slowly and wait for any hiss noise to stop then unscrew the cap all the way.



The fuel cap is behind a hinged fuel door on the right rear side of the vehicle.

If equipped, the fuel door is locked when the vehicle doors are locked. Press  on the RKE transmitter to unlock.

To open the fuel door, push and release the rearward center edge of the door.

To remove the fuel cap, turn it slowly counterclockwise. The fuel cap has a spring in it; if the cap is released too soon, it will spring back to the right.

While refueling, hang the tethered fuel cap from the hook on the fuel door.

Be careful not to spill fuel. Do not top off or overfill the tank and 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 on page 10-67*.

When replacing the fuel cap, turn it clockwise until it clicks. Make sure the cap is fully installed. The diagnostic system can determine if the fuel cap has been left off or improperly installed. This would allow fuel to evaporate into the atmosphere. See *Malfunction Indicator Lamp on page 5-13*.

 **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.

 **Caution**

If a new fuel cap is needed, be sure to get the right type of cap from your dealer. The wrong type of fuel cap may not fit properly, may cause the malfunction indicator lamp to light, and could damage the fuel tank and emissions system. See *Malfunction Indicator Lamp on page 5-13*.

## 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.

## Towing

### General Towing Information

The vehicle is neither designed nor intended to tow a trailer.

## Conversions and Add-Ons

### Add-On Electrical Equipment



Some electrical equipment can damage the vehicle or cause components to not work and would not be covered by the warranty. Always check with your dealer before adding electrical equipment.

Add-on equipment can drain the vehicle's 12-volt battery, even if the vehicle is not operating.

The vehicle has an airbag system. Before attempting to add anything electrical to the vehicle, see *Servicing the Airbag-Equipped Vehicle on page 3-34* and *Adding Equipment to the Airbag-Equipped Vehicle on page 3-34*.

# Vehicle Care

## General Information

General Information .....	10-2
California Proposition 65 Warning .....	10-2
California Perchlorate Materials Requirements ....	10-2
Accessories and Modifications .....	10-2

## Vehicle Checks

Doing Your Own Service Work .....	10-3
Hood .....	10-4
Engine Compartment Overview .....	10-6
Engine Oil .....	10-7
Engine Oil Life System .....	10-9
Automatic Transmission Fluid .....	10-10
Engine Air Cleaner/Filter ....	10-11
Cooling System .....	10-12
Engine Coolant .....	10-12
Engine Overheating .....	10-15
Washer Fluid .....	10-17
Brakes .....	10-17
Brake Fluid .....	10-18

Battery .....	10-20
All-Wheel Drive .....	10-20
Starter Switch Check .....	10-20
Automatic Transmission Shift Lock Control Function Check .....	10-21
Ignition Transmission Lock Check .....	10-21
Park Brake and P (Park) Mechanism Check .....	10-21
Wiper Blade Replacement .....	10-22

## Headlamp Aiming

Headlamp Aiming .....	10-23
-----------------------	-------

## Bulb Replacement

Bulb Replacement .....	10-24
Halogen Bulbs .....	10-24
Headlamps, Front Turn Signal and Parking Lamps .....	10-24
License Plate Lamp .....	10-26
Replacement Bulbs .....	10-26

## Electrical System

Electrical System Overload .....	10-27
Fuses and Circuit Breakers .....	10-27

Engine Compartment Fuse Block .....	10-28
Instrument Panel Fuse Block .....	10-31
Rear Compartment Fuse Block .....	10-33

## Wheels and Tires

Tires .....	10-35
All-Season Tires .....	10-36
Winter Tires .....	10-36
Summer Tires .....	10-37
Tire Sidewall Labeling .....	10-37
Tire Designations .....	10-39
Tire Terminology and Definitions .....	10-40
Tire Pressure .....	10-43
Tire Pressure Monitor System .....	10-44
Tire Pressure Monitor Operation .....	10-45
Tire Inspection .....	10-48
Tire Rotation .....	10-49
When It Is Time for New Tires .....	10-50
Buying New Tires .....	10-51
Different Size Tires and Wheels .....	10-52

## 10-2 Vehicle Care

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Uniform Tire Quality Grading .....	10-53
Wheel Alignment and Tire Balance .....	10-54
Wheel Replacement .....	10-54
Tire Chains .....	10-55
If a Tire Goes Flat .....	10-56
Tire Changing .....	10-57
Compact Spare Tire .....	10-61
<b>Jump Starting</b>	
Jump Starting .....	10-62
<b>Towing</b>	
Towing the Vehicle .....	10-65
Recreational Vehicle Towing .....	10-65
<b>Appearance Care</b>	
Exterior Care .....	10-67
Interior Care .....	10-72
Floor Mats .....	10-75

### 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***

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Genuine  **Parts**

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 **Accessories**

### California Proposition 65 Warning

Most motor vehicles, including this one, contain and/or emit chemicals known to the State of California to

cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems, many fluids, and some component wear by-products contain and/or emit these chemicals.

### California Perchlorate Materials Requirements

Certain types of automotive applications, such as airbag initiators, safety belt pretensioners, and lithium batteries contained in Remote Keyless Entry transmitters, may contain perchlorate materials. Special handling may be necessary. For additional information, see [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate).

### Accessories and Modifications

Adding non-dealer accessories or making modifications to the vehicle can affect vehicle performance and safety, including such things as airbags, braking, stability, ride and

handling, emissions systems, aerodynamics, durability, and electronic systems like antilock brakes, traction control, and stability control. These accessories or modifications could even cause malfunction or damage not covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorize the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see *Adding Equipment to the Airbag-Equipped Vehicle* on page 3-34.

## Vehicle Checks

### Doing Your Own Service Work

 **Warning**

It can be dangerous to work on your vehicle if you do not have the proper knowledge, service manual, tools, or parts. Always follow owner manual procedures and consult the service manual for your vehicle before doing any service work.

If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can. To order the proper service manual, see *Service Publications Ordering Information* on page 13-11.

This vehicle has an airbag system. Before attempting to do your own service work, see *Servicing the Airbag-Equipped Vehicle* on page 3-34.

Keep a record with all parts receipts and list the mileage and the date of any service work performed. See *Maintenance Records* on page 11-14.

 **Caution**

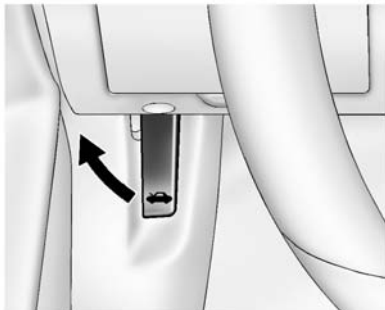
Even small amounts of contamination can cause damage to vehicle systems. Do not allow contaminants to contact the fluids, reservoir caps, or dipsticks.



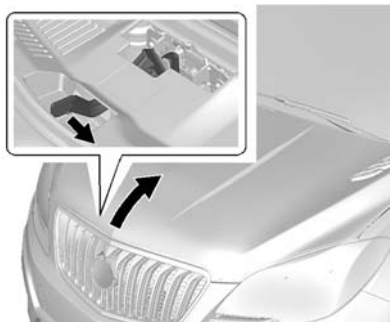
## 10-4 Vehicle Care

### Hood

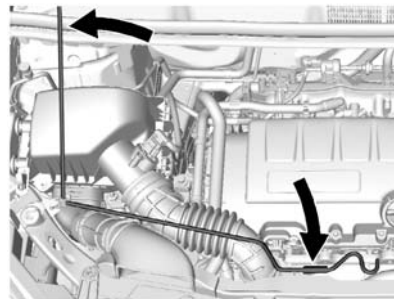
To open the hood:



1. Pull the hood release handle inside the vehicle. It is located on the lower left side of the instrument panel.



2. Go to the front of the vehicle and move the secondary hood release lever toward the right side of the vehicle.



3. Lift the hood and release the hood prop from its retainer, above the radiator. Securely place the hood prop into the slot on the underside of the hood.

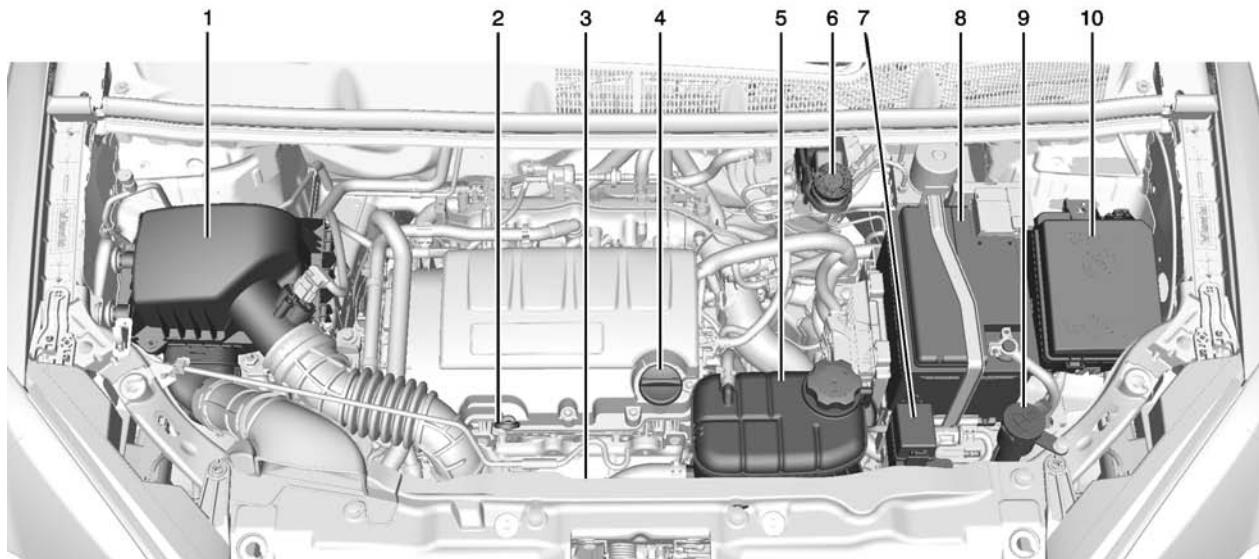
To close the hood:

1. Before closing the hood, be sure all filler caps are on properly. Then, lift the hood to relieve pressure on the hood prop. Remove the hood prop from the slot in the underside of the hood and return the prop to its retainer. The prop rod must click

into place when returning it to the retainer to prevent hood damage.

2. Lower the hood 30 cm (12 in) above the vehicle and release it so it fully latches. Check to make sure the hood is closed and repeat the process if necessary.

## Engine Compartment Overview



1. *Engine Air Cleaner/Filter on page 10-11.*
2. *Engine Oil Dipstick. See Engine Oil on page 10-7.*
3. *Engine Cooling Fan (Out of View). See Cooling System on page 10-12.*
4. *Engine Oil Fill Cap. See Engine Oil on page 10-7.*
5. *Engine Coolant Surge Tank and Pressure Cap. See Cooling System on page 10-12.*
6. *Brake Fluid Reservoir. See Brakes on page 10-17.*
7. *Auxiliary Fuse Block. See Engine Compartment Fuse Block on page 10-28.*
8. *Battery on page 10-20.*
9. *Windshield Washer Fluid Reservoir. See Washer Fluid on page 10-17.*
10. *Engine Compartment Fuse Block on page 10-28.*

## Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Always use engine oil approved to the proper specification and of the proper viscosity grade. See “Selecting the Right Engine Oil” in this section.
- Check the engine oil level regularly and maintain the proper oil level. See “Checking Engine Oil” and “When to Add Engine Oil” in this section.
- Change the engine oil at the appropriate time. See *Engine Oil Life System on page 10-9.*
- Always dispose of engine oil properly. See “What to Do with Used Oil” in this section.

## Checking Engine Oil

It is a good idea to check the engine oil level at each fuel fill. In order to get an accurate reading, the vehicle must be on level ground. The engine oil dipstick handle is a loop. See *Engine Compartment Overview on page 10-6* for the location of the engine oil dipstick.

Obtaining an accurate oil level reading is essential:

1. If the engine has been running recently, turn off the engine and allow several minutes for the oil to drain back into the oil pan. Checking the oil level too soon after engine shutoff will not provide an accurate oil level reading.

### **Warning**

The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

## 10-8 Vehicle Care

2. Pull out the dipstick and 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 MIN mark on the dipstick, add 1 L (1 qt) of the recommended oil and then recheck the level. See “Selecting the Right Engine Oil” in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications* on page 12-2.

### 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 MAX mark, the engine could be damaged. You should drain out the excess oil or limit driving of the vehicle and seek a service professional to remove the excess amount of oil.

See *Engine Compartment Overview* on page 10-6 for the location of the engine oil fill cap.

Add enough oil to put the level somewhere in the proper operating range between the MIN and MAX marks. Push the dipstick all the way back in when through.

### Selecting the Right Engine Oil

Selecting the right engine oil depends on both the proper oil specification and viscosity grade. See *Recommended Fluids and Lubricants* on page 11-12.

#### 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](http://www.gmdexos.com).



 **Caution**

Failure to use the recommended engine oil can result in engine damage not covered by the vehicle warranty. Check with your dealer or service provider on whether the oil is approved to the dexos1 specification.

**Viscosity Grade**

Use SAE 5W-30 viscosity grade engine oil.

**Cold Temperature Operation:** In an area of extreme cold, where the temperature falls below  $-29^{\circ}\text{C}$  ( $-20^{\circ}\text{F}$ ), an SAE 0W-30 oil may be used. An oil of this viscosity grade will provide easier cold starting for the engine at extremely low temperatures. When selecting an oil of the appropriate viscosity grade, always select an oil of the correct specification. See “Specification” earlier in this section for more information.

**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 DIC message comes on.

See *Vehicle Messages on page 5-25*. 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. Press the MENU button to show Remaining Oil Life on the display. This display shows an estimate of the oil's remaining useful life. If 99% is displayed, that means that 99% of the current oil life remains.
2. To reset the engine oil life system, press the SET/CLR button while the oil life display is active. After a few seconds, there will be a single chime and the oil life will be reset to 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.

If the CHANGE ENGINE OIL SOON DIC message comes back on when the vehicle is started, the engine oil life system has not reset. Repeat the procedure.

### **Automatic Transmission Fluid**

#### **How to Check Automatic Transmission Fluid**

It is not necessary to check the transmission fluid level. A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to your dealer and have it repaired as soon as possible.

There is a special procedure for checking and changing the transmission fluid. Because this procedure is difficult, you should have this done at your dealer.

Change the fluid at the intervals listed in *Maintenance Schedule on page 11-2*, and be sure to use the fluid listed in *Recommended Fluids and Lubricants on page 11-12*.

## Engine Air Cleaner/Filter

The engine air cleaner/filter is in the engine compartment on the passenger side of the vehicle. See *Engine Compartment Overview on page 10-6* for more information on location.

### When to Inspect the Engine Air Cleaner/Filter

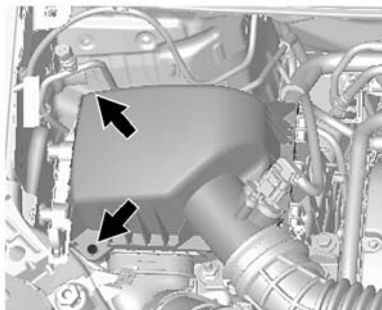
Inspect the air cleaner/filter at the scheduled maintenance intervals. See *Maintenance Schedule on page 11-2*. If you are driving in dusty/dirty conditions, inspect the filter at each engine oil change.

### How to Inspect the Engine Air Cleaner/Filter

To inspect the engine air cleaner/filter, remove the filter from the vehicle and lightly shake the filter to

release loose dust and dirt. If the filter remains covered with dirt, a new filter is required.

To inspect or replace the air cleaner/filter:



1. Remove the two screws, tilt the cover, and slide it out of the assembly.
2. Inspect or replace the engine air cleaner/filter.
3. Lower the cover, slide it into the assembly, then secure with the two screws.

See *Maintenance Schedule on page 11-2* for replacement intervals.

#### **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.

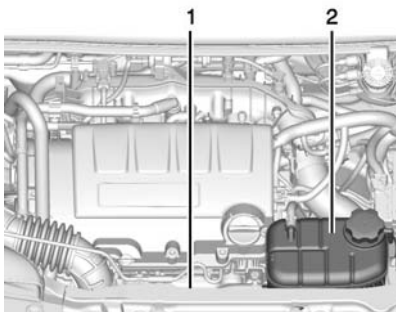
#### **Caution**

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 you are driving.



### Cooling System

The cooling system allows the engine to maintain the correct working temperature.



1. Engine Cooling Fan (Out of View)
2. Engine Coolant Surge Tank and Pressure Cap

#### Warning

An electric engine cooling fan under the hood can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underhood electric fan.

#### Warning

Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned.

Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.

#### Caution

Using coolant other than DEX-COOL<sup>®</sup> can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner. Any repairs would not be covered by the vehicle warranty. Always use DEX-COOL (silicate-free) coolant in the vehicle.

### Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL engine coolant. 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 on page 10-15*.

## What to Use

### Warning

Adding only plain water or some other liquid to the cooling system can be dangerous. Plain water and other liquids, can boil before the proper coolant mixture will. The coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, the engine could get too hot but you would not get the overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant.

Use a 50/50 mixture of clean drinkable water and DEX-COOL coolant. This mixture:

- Gives freezing protection down to  $-37^{\circ}\text{C}$  ( $-34^{\circ}\text{F}$ ), outside temperature.

- Gives boiling protection up to  $129^{\circ}\text{C}$  ( $265^{\circ}\text{F}$ ), engine temperature.
- Protects against rust and corrosion.
- Will not damage aluminum parts.
- Helps keep the proper engine temperature.

### Caution

If improper coolant mixture, inhibitors, or additives are used in the vehicle cooling system, the engine could overheat and be damaged. Too much water in the mixture can freeze and crack engine cooling parts. The repairs would not be covered by the vehicle warranty. Use only the proper mixture of engine coolant for the cooling system. See *Recommended Fluids and Lubricants on page 11-12.*

Never dispose of engine coolant by putting it in the trash, 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 vehicle must be on a level surface when checking the coolant level.

It is normal to see coolant moving in the upper coolant hose return line when the engine is running.

Check to see if coolant is visible in the coolant surge tank. If the coolant inside the coolant surge tank is boiling, do not do anything else until it cools down.

## 10-14 Vehicle Care

If coolant is visible but the coolant level is not at or above the mark pointed to, add a 50/50 mixture of clean drinkable water and DEX-COOL coolant.

Be sure the cooling system is cool before this is done.

If no coolant is visible in the coolant surge tank, add coolant as follows:

### How to Add Coolant to the Coolant Surge Tank

#### Caution

This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause the engine to overheat and be severely damaged.

If no problem is found, check to see if coolant is visible in the coolant surge tank. If coolant is visible but the coolant level is not at the indicated level mark, add a 50/50 mixture of clean, drinkable water

and DEX-COOL coolant at the coolant surge tank, but be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it.

#### Warning

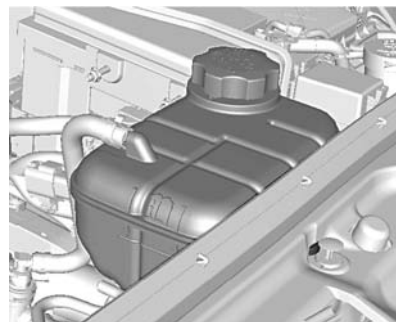
Steam and scalding liquids from a hot cooling system can blow out and burn you badly. Never turn the cap when the cooling system, including the surge tank pressure cap, is hot. Wait for the cooling system and surge tank pressure cap to cool.

#### Caution

In cold weather, water can freeze and crack the engine, radiator, heater core, and other parts. Use the recommended coolant and the proper coolant mixture.

#### Warning

You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.



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-quarter of a turn. If you hear a hiss, wait for that to stop. This will allow any pressure still left to be vented out the discharge hose.

2. Keep turning the pressure cap slowly and remove it.
3. Fill the coolant surge tank with the proper DEX-COOL coolant mixture to the indicated level mark.

4. With the coolant surge tank pressure cap off, start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fan.

By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper DEX-COOL coolant mixture to the coolant surge tank until the level reaches the indicated level mark.

5. Replace the pressure cap tightly.

Check the level in the coolant surge tank when the cooling system has cooled down. If the coolant is not at the proper level, repeat Steps 1–3 and reinstall the pressure cap. If the coolant still is not at the proper level when the system cools down again, see your dealer.

 **Caution**

If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.

## Engine Overheating

The vehicle has an engine coolant temperature gauge to warn of the engine overheating. See *Engine Coolant Temperature Gauge on page 5-10*.

If the decision is made not to lift the hood when this warning appears, get service help right away. See *Roadside Assistance Program on page 13-5*.

If the decision is made to lift the hood, make sure the vehicle is parked on a level surface.

Then check to see if the engine cooling fan is running. If the engine is overheating, the fan should be

running. If it is not, do not continue to run the engine. Have the vehicle serviced.

### **Caution**

Running the engine without coolant may cause damage or a fire. Vehicle damage would not be covered by the vehicle warranty.

### **If Steam Is Coming from the Engine Compartment**

#### **Warning**

Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Just turn it off and get everyone away from the vehicle until it cools down.

(Continued)

#### **Warning (Continued)**

Wait until there is no sign of steam or coolant before you open the hood.

If you keep driving when the engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop the engine if it overheats, and get out of the vehicle until the engine is cool.

### **If No Steam Is Coming from the Engine Compartment**

If an engine overheat warning is displayed but no steam can be seen or heard, the problem may not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day.
- Stops after high-speed driving.
- Idles for long periods in traffic.

If the overheat warning is displayed with no sign of steam:

1. Turn the air conditioning off.
2. Turn the heater on to the highest temperature and to the highest fan speed. Open the windows as necessary.
3. 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, 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 no sign of steam, idle the engine for three minutes while parked. If the warning is still displayed, turn off the engine until it cools down.

## Washer Fluid

### What to Use

When the vehicle needs windshield washer fluid, be sure to read the manufacturer's instructions before use. If operating the vehicle in an area where the temperature may fall below freezing, use a fluid that has sufficient protection against freezing.

### Adding Washer Fluid



Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview* on page 10-6 for reservoir location.

### ⚠ Caution

- 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 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

(Continued)

### Caution (Continued)

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 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 on page 12-2*.

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 parts are improperly installed.

### Brake Fluid

The brake master cylinder reservoir is filled with DOT 4 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview on page 10-6* for the location of the reservoir. The fluid level must be between the MIN and MAX marks.



There are only two reasons why the fluid level in the reservoir might go down:

- The fluid level goes down because of normal brake lining wear. When new linings are installed, the fluid level goes back up.
- A fluid leak in the brake hydraulic system can also cause a low fluid level. Have the brake hydraulic system fixed, since a leak means that sooner or later the brakes will not work well.

Do not top off the brake fluid. Adding fluid does not correct a leak. If fluid is added when the linings are worn, there will be too much fluid when new brake linings are installed. Add or remove fluid, as necessary, only when work is done on the brake hydraulic system.

 **Warning**

If too much brake fluid is added, it can spill on the engine and burn, if the engine is hot enough. You or others could be burned, and the vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system.

When the brake fluid falls to a low level, the brake warning light comes on. See *Brake System Warning Light* on page 5-16.

**What to Add**

Use only new DOT 4 brake fluid from a sealed container. It is recommended that the brake hydraulic system be flushed and refilled with new DOT 4 fluid at a regular maintenance interval every two years. See *Recommended Fluids and Lubricants* on page 11-12.

Always clean the brake fluid reservoir cap and the area around the cap before removing it. This helps keep dirt from entering the reservoir.

 **Warning**

With the wrong kind of fluid in the brake hydraulic system, the brakes might not work well. This could cause a crash. Always use the proper brake fluid.

 **Caution**

- Using the wrong fluid can badly damage brake hydraulic system parts. For example, just a few drops of mineral-based oil, such as engine oil, in the brake hydraulic system can damage brake hydraulic system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.
- If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Be careful not to spill brake fluid on the vehicle. If you do, wash it off immediately.



### Battery

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

Refer to the replacement number on the original battery label when a new battery is needed.

#### Warning

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

### Vehicle Storage

#### Warning

Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you are not careful. See *Jump Starting on page 10-62* for tips on working around a battery without getting hurt.

**Infrequent Usage:** Remove the black, negative (-) cable from the battery to keep the battery from running down.

**Extended Storage:** Remove the black, negative (-) cable from the battery or use a battery trickle charger.

### All-Wheel Drive

#### Transfer Case

Under normal driving conditions, transfer case fluid does not require changing or checking unless there

is a fluid leak or unusual noise. If required, have the transfer case serviced by your dealer.

### Starter Switch Check

#### Warning

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle.
2. 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.

## Ignition Transmission Lock Check

While parked and with the parking brake set, try to turn the ignition to LOCK/OFF in each shift lever position.

- The ignition should turn to LOCK/OFF only when the shift lever is in P (Park).
- The ignition key should come out only in LOCK/OFF.

Contact your dealer if service is required.

## 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.

## 10-22 Vehicle Care

- 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 and cracking. See *Maintenance Schedule* on page 11-2.

Replacement blades come in different types and are removed in different ways. For proper type and length, see *Maintenance Replacement Parts* on page 11-13.

#### **Caution**

Allowing the wiper arm to touch the windshield when no wiper blade is installed could damage

(Continued)

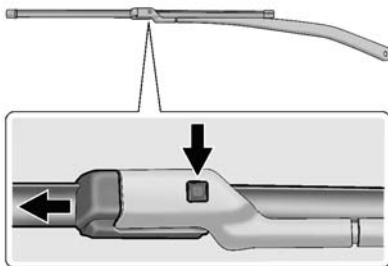
#### **Caution (Continued)**

the windshield. Any damage that occurs would not be covered by your warranty. Do not allow the wiper arm to touch the windshield.

### Front Wiper Blade Replacement

To replace the front wiper blades:

1. Lift the wiper arm from the windshield until no further movement is possible.



2. Press the release button on the top side of the wiper and pull the wiper blade out of the end of the wiper arm.
3. Install the wiper blade connector by sliding into the end of the wiper arm until the button on the wiper blade clicks into place with the wiper arm.
4. Place the wiper arm with the wiper blade in place back on the windshield.

#### **Caution**

Damage may occur if the wiper blades are not in contact with the windshield before turning on the wiper system.

## Rear Wiper Blade Replacement

The rear wiper blade and wiper arm have a cover for protection. The cover must be removed before the wiper blade can be replaced.

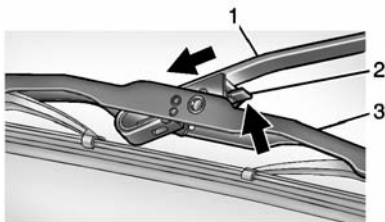
To remove the cover:



1. Slide a plastic tool under the cover and push upward to unhook.
2. Slide the cover toward the wiper blade tip to unhook it from the blade assembly.
3. Remove the cover.
4. After wiper blade replacement, ensure that the cover hook slides into the slot in the blade assembly.
5. Snap the cover down to secure.

To replace the wiper blade:

1. Lift the wiper arm away from the windshield.



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 on the wiper arm until the release lever clicks into place.
4. Replace the wiper cover.

## Headlamp Aiming

Headlamp aim has been preset and should need no further adjustment.

If the vehicle is damaged in a crash, the headlamp aim may be affected. If adjustment to the headlamps is necessary, see your dealer.

## Bulb Replacement

For the proper type of replacement bulbs, see *Replacement Bulbs* on page 10-26.

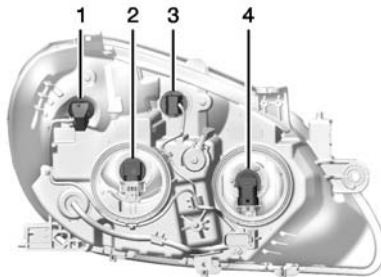
For any bulb-changing procedure not listed in this section, contact your dealer.

## Halogen Bulbs

 **Warning**

Halogen bulbs have pressurized gas inside and can burst if you drop or scratch the bulb. You or others could be injured. Be sure to read and follow the instructions on the bulb package.

## Headlamps, Front Turn Signal and Parking Lamps

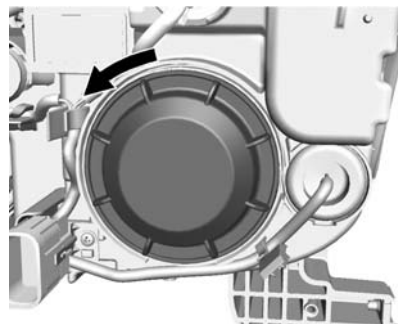


### Driver Side Shown, Passenger Side Similar

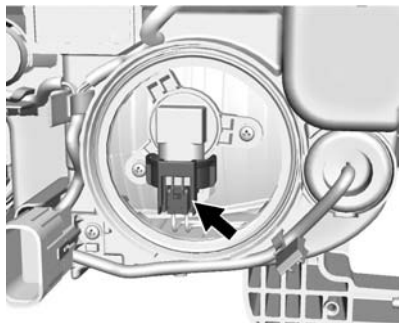
1. Turn Signal Lamp
2. Low-Beam Headlamp
3. Parking Lamp
4. High-Beam Headlamp

## High-Beam Headlamp/ Low-Beam Headlamp

1. Open the hood. See *Hood* on page 10-4.



2. Remove the headlamp bulb access cover.
3. Turn the bulb counterclockwise and pull straight back.



4. Disconnect the wiring harness connector from the bulb.
5. Install the new bulb in the headlamp assembly by turning clockwise.
6. Reconnect the wiring harness connector.
7. Install the headlamp bulb access cover.

### Parking Lamp

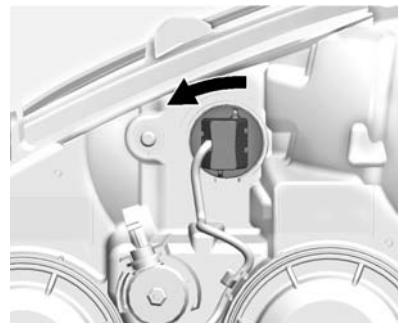
1. Open the hood. See *Hood* on page 10-4.



2. Remove the parking lamp bulb socket from the headlamp assembly by turning counterclockwise.
3. Remove the bulb from the bulb socket by pulling it straight out.
4. Install the new bulb in the bulb socket.
5. Install the bulb socket into the headlamp assembly by turning clockwise.

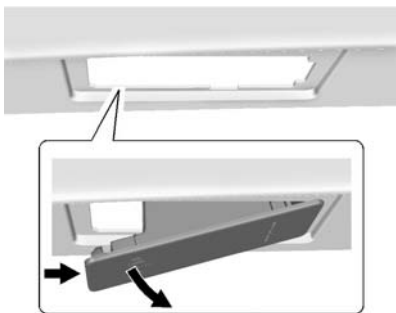
### Turn Signal Lamp

1. Open the hood. See *Hood* on page 10-4.

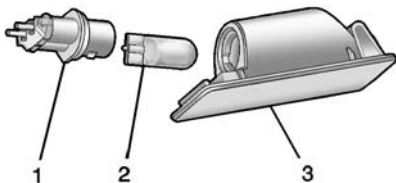


2. Remove the turn signal lamp bulb socket from the headlamp assembly by turning counterclockwise.
3. Remove the bulb from the bulb socket by pulling it straight out.
4. Install the new bulb in the bulb socket.
5. Install the bulb socket into the headlamp assembly by turning clockwise.

## License Plate Lamp



Lamp Assembly



Bulb Assembly

To replace one of these bulbs:

1. Push the left end of the lamp assembly toward the right.
2. Turn the lamp assembly down to remove it.
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. Turn the lamp assembly into the lamp assembly opening engaging the clip side first.
7. Push on the lamp side opposite the clip until the lamp assembly snaps into place.

## Replacement Bulbs

Exterior Lamp	Bulb Number
Back-Up Lamp	921
Front Parking Lamp	7444NA
Front Turn Signal Lamp	7444NA
High-Beam Headlamp	9005LL
License Plate Lamp	W5W LL
Low-Beam Headlamp	H11 LL

For replacement bulbs not listed here, contact your dealer.

## Electrical System

### Electrical System Overload

The vehicle has fuses and circuit breakers to protect against an electrical system overload.

When the current electrical load is too heavy, the circuit breaker opens and closes, protecting the circuit until the current load returns to normal or the problem is fixed. This greatly reduces the chance of circuit overload and fire caused by electrical problems.

Fuses and circuit breakers protect power devices in the vehicle.

Replace a bad fuse with a new one of the identical size and rating.

If there is a problem on the road and a fuse needs to be replaced, the same amperage fuse can be borrowed. Choose some feature of the vehicle that is not needed to use and replace it as soon as possible.

### Headlamp Wiring

An electrical overload may cause the lamps to go on and off, or in some cases to remain off. Have the headlamp wiring checked right away if the lamps go on and off or remain off.

### Windshield Wipers

If the wiper motor overheats due to heavy snow or ice, the windshield wipers will stop until the motor cools and will then restart.

Although the circuit is protected from electrical overload, overload due to heavy snow or ice may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using the windshield wipers.

If the overload is caused by an electrical problem and not snow or ice, be sure to get it fixed.

### Fuses and Circuit Breakers

The wiring circuits in the vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of damage caused by electrical problems.

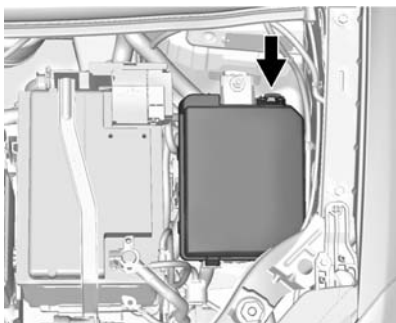
To check a fuse, look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure to replace a bad fuse with a new one of the identical size and rating.

Fuses of the same amperage can be temporarily borrowed from another fuse location, if a fuse goes out. Replace the fuse as soon as possible.

To identify and check fuses, circuit breakers, and relays, see *Engine Compartment Fuse Block on page 10-28, Instrument Panel Fuse Block on page 10-31, and Rear Compartment Fuse Block on page 10-33.*



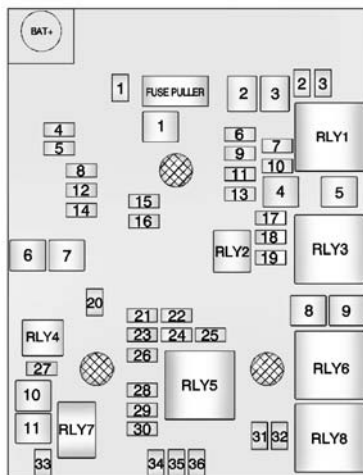
## Engine Compartment Fuse Block



To remove the fuse block cover, squeeze the clip and lift it up.

### **Caution**

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

Mini Fuses	Usage
1	Sunroof
2	Outside Rearview Mirror Switch
3	Canister Vent Solenoid
4	Not Used
5	Electronic Brake Control Module Valve
6	Not Used
7	Not Used
8	Transmission Control Module Battery
9	BCM Regulated Voltage Control
10	Fuel System Control Module R/C/ Headlamp Leveling
11	Rear Wiper

Mini Fuses	Usage
12	Rear Window Defogger
13	Not Used
14	Outside Rearview Mirror Heater
15	Fuel System Control Module Battery
16	Heated Seat Module/Memory Module
17	Transmission Control Module R/C
18	Engine Control Module R/C
19	Fuel Pump
20	Not Used
21	Fan Relay (Auxiliary Fuse Block)
22	Not Used
23	Ignition Coil/Injectors
24	Washer Pump

Mini Fuses	Usage
25	Not Used
26	Canister Purge Solenoid/Water Valve Solenoid/Oxygen Sensors – Pre and Post/Turbo Wastegate Solenoid (1.4L)/Turbo Bypass Solenoid (1.4L)
27	Not Used
28	Not Used
29	Engine Control Module Powertrain Ignition 1/Ignition 2
30	Mass Air Flow Sensor
31	Left High-Beam Headlamp
32	Right High-Beam Headlamp
33	Engine Control Module Battery

Mini Fuses	Usage
34	Horn
35	Air Conditioning Compressor Clutch
36	Front Fog Lamps

J-Case Fuses	Usage
1	Electronic Brake Control Module Pump
2	Front Wiper
3	Blower Motor
4	IEC R/C
5	Not Used
6	Not Used
7	Not Used
8	Cooling Fan Low/Mid
9	Cooling Fan High
10	EVP

## 10-30 Vehicle Care

J-Case Fuses	Usage
11	Starter Solenoid

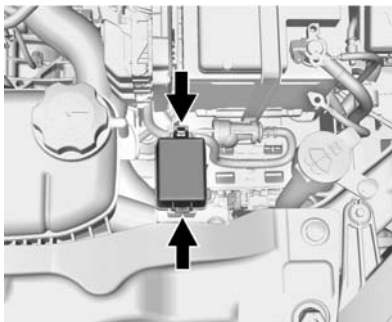
U-Micro Relays	Usage
2	Not Used
4	Spare

HC-Micro Relays	Usage
7	Starter

Mini Relays	Usage
1	Run Crank
3	Cooling Fan Mid
5	Powertrain Relay
8	Cooling Fan Low

HC-Mini Relays	Usage
6	Cooling Fan High

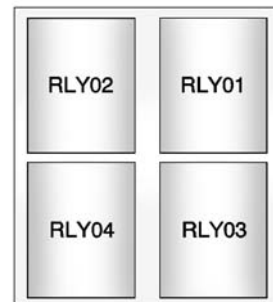
### Auxiliary Fuse Block



To remove the fuse block cover, squeeze the clips and lift it up.

### Caution

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.



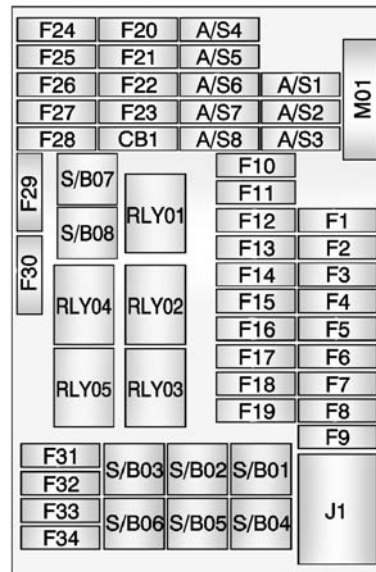
The vehicle may not be equipped with all of the fuses, relays, and features shown.

Relays	Usage
01	Electric Vacuum Pump
02	Cooling Fan Control 1
03	Cooling Fan Control 2
04	Trailer (N/A)

## Instrument Panel Fuse Block



The instrument panel fuse block is on the underside of the driver side instrument panel. To access the fuses, remove the storage compartment. To remove the storage compartment, open the storage compartment, open the compartment and pull it out.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

**10-32 Vehicle Care**

<b>Mini Fuses</b>	<b>Usage</b>
1	Body Control Module 1
2	Body Control Module 2
3	Body Control Module 3
4	Body Control Module 4
5	Body Control Module 5
6	Body Control Module 6
7	Body Control Module 7
8	Body Control Module 8
9	Discrete Logic Ignition Switch
10	Sensing Diagnostic Module Battery
11	Data Link Connector

<b>Mini Fuses</b>	<b>Usage</b>
12	Heater, Ventilation, and Air Conditioning MDL/ICS
13	Liftgate Relay
14	UPA Module
15	LDW Module/Inside Rearview Mirror
16	Adaptive Forward Lighting Module
17	Power WNDWSW DR
18	Rain Sensor
19	Body Control Module Regulated Voltage Control
20	Steering Wheel Switch Backlighting
21	A/C Accessory Power Outlet/ PRNDL

<b>Mini Fuses</b>	<b>Usage</b>
22	Cigar Lighter/DC Accessory Power Outlet
23	Spare
24	Spare
25	Spare
26	Automatic Occupant Sensing Display
27	IPC/PTC Control/ Clutch Switch
28	Headlamp Switch/ AFL/DC Converter
29	Spare
30	Spare
31	IPC Battery
32	Radio/Chime/ Aux Jack
33	Display/Faceplate
34	OnStar/UHP/DAB

S/B Fuses	Usage
1	Spare
2	Spare
3	Power Window Motor Front
4	Power Window Motor Rear
5	Logistic Mode Relay
6	Spare
7	Spare
8	Spare

Circuit Breaker	Usage
CB1	Spare

Midi Fuse	Usage
M01	PTC

Relays	Usage
01	Accessory/Retained Accessory Power
02	Liftgate
03	Spare
04	Spare
05	Logistic Mode

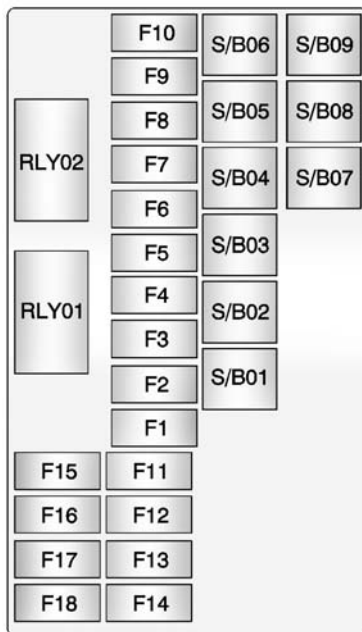
### Rear Compartment Fuse Block



The rear compartment fuse block is behind a cover on the left side of the rear compartment. To access the fuses, remove the cover.

The vehicle may not be equipped with all of the fuses, relays, and features shown.

## 10-34 Vehicle Care



Mini Fuses	Usage
1	Driver Seat Power Lumbar Switch
2	Passenger Seat Power Lumbar Switch
3	Amplifier
4	Trailer Socket (N/A)
5	All-Wheel Drive Module
6	Automatic Occupant Sensing Module
7	Spare/LPG Module Battery
8	Trailer Parking Lamps (N/A)
9	Spare
10	Spare/Side Blind Zone Alert Module
11	Trailer Module (N/A)
12	Nav Dock

Mini Fuses	Usage
13	Heated Steering Wheel
14	Trailer Socket (N/A)
15	EVP Switch
16	Water In Fuel Sensor
17	Inside Rearview Mirror/Regulated Voltage Control
18	Spare/LPG Module Run/Crank

S/B Fuses	Usage
1	Driver Power Seat Switch/Memory Module
2	Passenger Power Seat Switch
3	Trailer Module (N/A)
4	A/C-D/C Inverter
5	Battery

S/B Fuses	Usage
6	Headlamp Washer
7	Spare
8	Spare
9	Spare

Relays	Usage
1	Ignition Relay
2	Run Relay

## 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

(Continued)

#### Warning (Continued)

and a serious crash. See *Vehicle Load Limits on page 9-10*.

- Underinflated tires pose the same danger as overloaded tires. The resulting crash could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when the tires are cold.
- Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when hitting a pothole. Keep tires at the recommended pressure.

(Continued)



**Warning (Continued)**

- Worn or old tires can cause a crash. If the tread is badly worn, replace them.
- Replace any tires that have been damaged by impacts with potholes, curbs, etc.
- Improperly repaired tires can cause a crash. Only the dealer or an authorized tire service center should repair, replace, dismount, and mount the tires.
- Do not spin the tires in excess of 56 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tires to explode.

**All-Season Tires**

This vehicle may come with all-season tires. These tires are designed to provide good overall performance on most road surfaces and weather conditions. Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. Original equipment all-season tires can be identified by the last two characters of this TPC code, which will be "MS."

Consider installing winter tires on the vehicle if frequent driving on snow or ice-covered roads is expected. All-season tires provide adequate performance for most winter driving conditions, but they may not offer the same level of traction or performance as winter tires on snow or ice-covered roads. See *Winter Tires on page 10-36*.

**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 on page 10-51*.

With winter tires, there may be decreased dry road traction, increased road noise, and shorter tread life. After changing to winter tires, be alert for changes in vehicle handling and braking.

If using winter tires:

- Use tires of the same brand and tread type on all four wheel positions.

- Use only radial ply tires of the same size, load range, and speed rating as the original equipment tires.

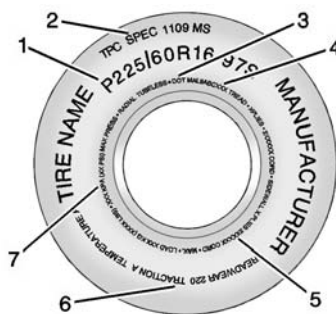
Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y, and ZR speed rated tires. If winter tires with a lower speed rating are chosen, never exceed the tire's maximum speed capability.

## Summer Tires

This vehicle may come with high performance summer tires. These tires have a special tread and compound that are optimized for maximum dry and wet road performance. This special tread and compound will have decreased performance in cold climates, and on ice and snow. We recommend installing winter tires on the vehicle if frequent driving at temperatures below approximately 5°C (40°F) or on ice or snow covered roads is expected. See *Winter Tires* on page 10-36.

## Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall. The examples show a typical passenger vehicle tire and a compact spare tire sidewall.



### Passenger (P-Metric) Tire Example

**(1) Tire Size:** The tire size is a combination of letters and numbers used to define a particular tire's width, height, aspect ratio, construction type,

and service description. See the "Tire Size" illustration later in this section.

### **(2) TPC Spec (Tire Performance Criteria Specification):**

Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

### **(3) DOT (Department of Transportation):**

The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

### **DOT Tire Date of**

**Manufacture:** The last four digits of the TIN indicate the tire manufactured date. The first two

## 10-38 Vehicle Care

digits represent the week (01–52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

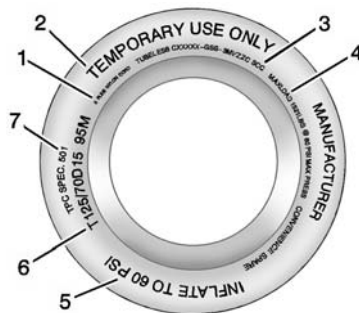
**(4) Tire Identification Number (TIN):** The letters and numbers following the DOT (Department of Transportation) code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(5) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(6) Uniform Tire Quality Grading (UTQG):** Tire manufacturers are required to grade tires based on three

performance factors: treadwear, traction, and temperature resistance. For more information see *Uniform Tire Quality Grading on page 10-53*.

**(7) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load.



Compact Spare Tire Example

**(1) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(2) Temporary Use Only:** The compact spare tire or temporary use tire should not be driven at speeds over 80 km/h (50 mph). The compact spare tire is for emergency use when a regular road tire has lost air and gone flat. If the vehicle has a compact spare tire, see *Compact Spare Tire on page 10-61* and *If a Tire Goes Flat on page 10-56*.

**(3) Tire Identification Number (TIN):** The letters and numbers following the DOT (Department of Transportation) code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(4) Maximum Cold Inflation**

**Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load.

**(5) Tire Inflation:** The temporary use tire or compact spare tire should be inflated to 420 kPa (60 psi). For more information on tire pressure and inflation see *Tire Pressure on page 10-43*.

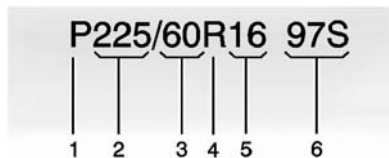
**(6) Tire Size:** A combination of letters and numbers define a tire's width, height, aspect ratio, construction type, and service description. The letter T as the first character in the tire size means the tire is for temporary use only.

**(7) TPC Spec (Tire Performance Criteria Specification):** Original equipment tires designed to GM's specific tire performance

criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

**Tire Designations****Tire Size**

The following is an example of a typical passenger vehicle tire size.

**(1) Passenger (P-Metric) Tire:**

The United States version of a metric tire sizing system. The letter P as the first character in the tire size means a passenger

vehicle tire engineered to standards set by the U.S. Tire and Rim Association.

**(2) Tire Width:** The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

**(3) Aspect Ratio:** A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is 60, as shown in item 3 of the illustration, it would mean that the tire's sidewall is 60 percent as high as it is wide.

**(4) Construction Code:** A letter code is used to indicate the type of ply construction in the tire. The letter R means radial ply construction; the letter D means diagonal or bias ply construction; and the letter B means belted-bias ply construction.

**(5) Rim Diameter:** Diameter of the wheel in inches.

**(6) Service Description:** These characters represent the load index and speed rating of the tire. The load index represents the load carrying capacity a tire is certified to carry. The speed rating is the maximum speed a tire is certified to carry a load.

### Tire Terminology and Definitions

**Air Pressure:** The amount of air inside the tire pressing outward on each square inch of the tire. Air pressure is expressed in kPa (kilopascal) or psi (pounds per square inch).

**Accessory Weight:** The combined weight of optional accessories. Some examples of optional accessories are

automatic transmission, power windows, power seats, and air conditioning.

**Aspect Ratio:** The relationship of a tire's height to its width.

**Belt:** A rubber coated layer of cords between the plies and the tread. Cords may be made from steel or other reinforcing materials.

**Bead:** The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

**Bias Ply Tire:** A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

**Cold Tire Pressure:** The amount of air pressure in a tire, measured in kPa (kilopascal) or psi (pounds per square inch)

before a tire has built up heat from driving. See *Tire Pressure on page 10-43*.

**Curb Weight:** The weight of a motor vehicle with standard and optional equipment including the maximum capacity of fuel, oil, and coolant, but without passengers and cargo.

**DOT Markings:** A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation (DOT) Motor Vehicle Safety Standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand, and date of production.

**GVWR:** Gross Vehicle Weight Rating. See *Vehicle Load Limits on page 9-10*.

**GAWR FRT:** Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits on page 9-10*.

**GAWR RR:** Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits on page 9-10*.

**Intended Outboard Sidewall:** The side of an asymmetrical tire that must always face outward when mounted on a vehicle.

**Kilopascal (kPa):** The metric unit for air pressure.

**Light Truck (LT-Metric) Tire:** A tire used on light duty trucks and some multipurpose passenger vehicles.

**Load Index:** An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

**Maximum Inflation Pressure:** The maximum air pressure to which a cold tire can be inflated. The maximum air pressure is molded onto the sidewall.

**Maximum Load Rating:** The load rating for a tire at the maximum permissible inflation pressure for that tire.

**Maximum Loaded Vehicle Weight:** The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

**Normal Occupant Weight:** The number of occupants a vehicle is designed to seat multiplied by 68 kg (150 lb). See *Vehicle Load Limits on page 9-10*.

**Occupant Distribution:** Designated seating positions.

**Outward Facing Sidewall:** The side of an asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.

**Passenger (P-Metric) Tire:** A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

### **Recommended Inflation**

**Pressure:** Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard. See *Tire Pressure on page 10-43* and *Vehicle Load Limits on page 9-10*.

**Radial Ply Tire:** A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

**Rim:** A metal support for a tire and upon which the tire beads are seated.

**Sidewall:** The portion of a tire between the tread and the bead.

**Speed Rating:** An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

**Traction:** The friction between the tire and the road surface. The amount of grip provided.

**Tread:** The portion of a tire that comes into contact with the road.

**Treadwear Indicators:** Narrow bands, sometimes called wear bars, that show across the tread of a tire when only 1.6 mm (1/16 in) of tread remains. See *When It Is Time for New Tires on page 10-50*.

**UTQGS (Uniform Tire Quality Grading Standards):** A tire information system that provides consumers with ratings for a tire's traction, temperature, and treadwear. Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the

sidewall of the tire. See *Uniform Tire Quality Grading on page 10-53*.

**Vehicle Capacity Weight:** The number of designated seating positions multiplied by 68 kg (150 lb) plus the rated cargo load. See *Vehicle Load Limits on page 9-10*.

**Vehicle Maximum Load on the Tire:** Load on an individual tire due to curb weight, accessory weight, occupant weight, and cargo weight.

**Vehicle Placard:** A label permanently attached to a vehicle showing the vehicle capacity weight and the original equipment tire size and recommended inflation pressure. See "Tire and Loading Information Label" under *Vehicle Load Limits on page 9-10*.

## Tire Pressure

Tires need the correct amount of air pressure to operate effectively.

### 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.
- Poor handling.
- Reduced fuel economy.

(Continued)

### Caution (Continued)

Overinflated tires, or tires that have too much air, can result in:

- Unusual wear.
- Poor handling.
- Rough ride.
- Needless damage from road hazards.

The Tire and Loading Information label on the vehicle indicates the original equipment tires and the correct cold tire inflation pressures. The recommended pressure is the minimum air pressure needed to support the vehicle's maximum load carrying capacity. See *Vehicle Load Limits on page 9-10*.

How the vehicle is loaded affects vehicle handling and ride comfort. Never load the vehicle with more weight than it was designed to carry.

### When to Check

Check the tires once a month or more. Do not forget the compact spare, if the vehicle has one. The cold compact spare tire pressure should be at 420 kPa (60 psi). See *Compact Spare Tire on page 10-61*.

### How to Check

Use a good quality pocket-type gauge to check tire pressure. Proper tire inflation cannot be determined by looking at the tire. Check the tire inflation pressure when the tires are cold, meaning the vehicle has not been driven for at least three hours or no more than 1.6 km (1 mi).



Remove the valve cap from the tire valve stem. Press the tire gauge firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the Tire and Loading Information label, no further adjustment is necessary. If the inflation pressure is low, add air until the recommended pressure is reached. If the inflation pressure is high, press on the metal stem in the center of the tire valve to release air.

Recheck the tire pressure with the tire gauge.

Return the valve caps on the valve stems to prevent leaks and keep out dirt and moisture.

### Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. The TPMS sensors monitor the air pressure in your tires and transmit tire pressure readings to a receiver located in the vehicle.

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire

pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly.

The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

See *Tire Pressure Monitor Operation* on page 10-45.

See *Radio Frequency Statement* on page 13-12.

## 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

located on the instrument cluster. If the warning light comes on, stop as soon as possible and inflate the tires to the recommended pressure shown on the Tire and Loading Information label. See *Vehicle Load Limits* on page 9-10.

A message to check the pressure in a specific tire may display in the Driver Information Center (DIC). The low tire pressure warning light and the DIC warning message, if equipped, come on at each ignition cycle until the tires are inflated to the correct inflation pressure. Using the DIC, it may be possible to view the tire pressure levels. For additional information and details about the DIC operation and displays, see *Driver Information Center (DIC)* on page 5-22.

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 shows the size of the original equipment tires and the correct inflation pressure for the tires when they are cold. See *Vehicle Load Limits on page 9-10*, for an example of the Tire and Loading Information label and its location. Also see *Tire Pressure on page 10-43*.

The TPMS can warn about a low tire pressure condition, but it does not replace normal tire maintenance. See *Tire Inspection on page 10-48*, *Tire Rotation on page 10-49*, and *Tires on page 10-35*.

### 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, defined above, flashes for about one minute and then stays on for the remainder of the ignition cycle. A DIC warning message may also display. The malfunction light and DIC warning message, if equipped, 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 the DIC message, if equipped, 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, if equipped, 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, if equipped, should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.
- Replacement tires or wheels do not match the original equipment tires or wheels. Tires and wheels other than those recommended could prevent the TPMS from functioning properly. See *Buying New Tires on page 10-51*.

- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

If the TPMS is not functioning properly, it cannot detect or signal a low tire condition. See your dealer for service if the TPMS malfunction light and DIC message, if equipped, come on and stay on.

### **TPMS Sensor Matching Process**

Each TPMS sensor has a unique identification code. The identification code needs to be matched to a new tire/wheel position after rotating the vehicle's tires or replacing one or more of the TPMS sensors. Also, the TPMS sensor matching process should be performed after replacing a spare tire with a road tire containing the TPMS sensor. The malfunction light and the DIC message, if equipped, should go off at the next ignition cycle. The sensors are matched to the tire/

wheel positions, using a TPMS relearn tool, in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear. See your dealer for service or to purchase a relearn tool. A TPMS relearn tool can also be purchased. See Tire Pressure Monitor Sensor Activation Tool at [www.gmtoolsandequipment.com](http://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. Turn the ignition to ON/RUN with the engine off.

- Use the MENU button to select the Vehicle Information Menu (Menu 2) in the Driver Information Center (DIC).
- Use the thumbwheel (or up and down arrows) to scroll to the Tire Pressure Menu Item screen.
- Press and hold the SET/CLR button to begin the sensor matching process.  
A message requesting acceptance of the process may display.
- If requested, press the SET/CLR button again to confirm the selection.  
The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARN or TIRE LEARNING ACTIVE message displays on the DIC screen.
- Start with the driver side front tire.
- 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.

- Proceed to the passenger side front tire, and repeat the procedure in Step 8.
- Proceed to the passenger side rear tire, and repeat the procedure in Step 8.
- Proceed to the driver side rear tire, and repeat the procedure in Step 8. 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 LEARN or TIRE LEARNING ACTIVE message on the DIC display screen goes off.
- Turn the ignition to LOCK/OFF.

- Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.

### Tire Inspection

We recommend that the tires, including the spare tire, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tire if:

- The indicators at three or more places around the tire can be seen.
- There is cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.

- The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

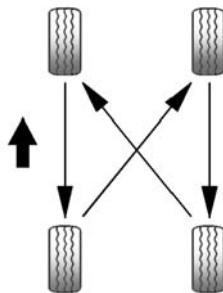
## Tire Rotation

Tires should be rotated every 12 000 km (7,500 mi). See *Maintenance Schedule* on page 11-2.

Tires are rotated to achieve a uniform wear for all tires. The first rotation is the most important.

Anytime unusual wear is noticed, rotate the tires as soon as possible, check for proper tire inflation pressure, and check for damaged tires or wheels. If the unusual wear continues after the rotation, check the wheel alignment.

See *When It Is Time for New Tires* on page 10-50 and *Wheel Replacement* on page 10-54.



Use this rotation pattern when rotating the tires.

Do not include the compact spare tire in the tire rotation.

Adjust the front and rear tires to the recommended inflation pressure on the Tire and Loading Information label after the tires have been rotated.

See *Tire Pressure* on page 10-43 and *Vehicle Load Limits* on page 9-10.

Reset the Tire Pressure Monitor System. See *Tire Pressure Monitor Operation* on page 10-45.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications* on page 12-2.

### Warning

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper

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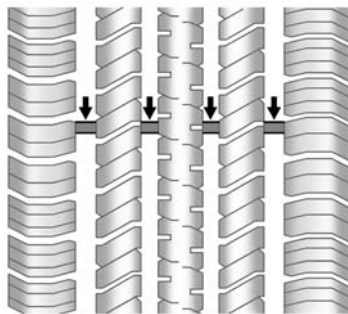
### Warning (Continued)

towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

Lightly coat the center of the wheel hub with wheel bearing grease after a wheel change or tire rotation to prevent corrosion or rust build-up. Do not get grease on the flat wheel mounting surface or on the wheel nuts or bolts.

### When It Is Time for New Tires

Factors such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions affect the wear rate of the tires.



Treadwear indicators are one way to tell when it is time for new tires. Treadwear indicators appear when the tires have only 1.6 mm (1/16 in) or less of tread remaining. See *Tire Inspection* on page 10-48 and *Tire Rotation* on page 10-49.

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* on page 10-37.

GM recommends replacing worn tires in complete sets of four. Uniform tread depth on all tires will help to maintain the performance of the vehicle. Braking and handling performance may be adversely affected if all the tires are not replaced at the same time. If proper rotation and maintenance have been done, all four tires should wear out at about the same time. See *Tire Rotation* on page 10-49. However, if it is necessary to replace only one axle set of worn tires, place the new tires on the rear axle.

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y and ZR speed rated tires. Never exceed the winter tires' maximum speed capability when using winter tires with a lower speed rating.

### Warning

Tires could explode during improper service. Attempting to mount or dismount a tire could cause injury or death. Only your dealer or authorized tire service center should mount or dismount the tires.



### Warning

Mixing tires of different sizes, brands, or types may cause loss of control of the vehicle, resulting in a crash or other vehicle damage. Use the correct size, brand, and type of tires on all wheels.

### Warning

Using bias-ply tires on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving. A tire and/or wheel could fail suddenly and cause a crash. Use only radial-ply tires with the wheels on the vehicle.

If the vehicle tires must be replaced with a tire that does not have a TPC Spec number, make

sure they are the same size, load range, speed rating, and construction (radial) as the original tires.

Vehicles that have a tire pressure monitoring system could give an inaccurate low-pressure warning if non-TPC Spec rated tires are installed. See *Tire Pressure Monitor System on page 10-44*.

The Tire and Loading Information label indicates the original equipment tires on the vehicle. See *Vehicle Load Limits on page 9-10*.

### **Different Size Tires and Wheels**

If wheels or tires are installed that are a different size than the original equipment wheels and tires, vehicle performance, including its braking, ride and handling characteristics, stability, and resistance to rollover

may be affected. If the vehicle has electronic systems such as antilock brakes, rollover airbags, traction control, electronic stability control, or All-Wheel Drive, the performance of these systems can also be affected.

### Warning

If different sized wheels are used, there may not be an acceptable level of performance and safety if tires not recommended for those wheels are selected. This increases the chance of a crash and serious injury. Only use GM specific wheel and tire systems developed for the vehicle, and have them properly installed by a GM certified technician.

See *Buying New Tires on page 10-51* and *Accessories and Modifications on page 10-2*.

## Uniform Tire Quality Grading

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

### Treadwear 200 Traction AA Temperature A

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter tires, compact spare tires, tires with

nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal safety requirements and additional General Motors Tire Performance Criteria (TPC) standards.

All Passenger Car Tires Must Conform to Federal Safety Requirements In Addition To These Grades.

### Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire

graded 150 would wear one and one-half (1½) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

### Traction

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

(Continued)

**Caution (Continued)**

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 recommends it for the vehicle's tire size combination and road conditions. Follow that manufacturer's instructions. To avoid vehicle damage, drive slow and readjust or remove the traction device if it contacts the vehicle. Do not spin the wheels. If traction devices are used, install them on the front tires.

## If a Tire Goes Flat

It is unusual for a tire to blow out while driving, especially if the tires are maintained properly. See *Tires on page 10-35*. 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

(Continued)

### Warning (Continued)

changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

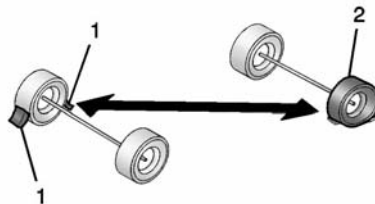
If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place, well off the road, if possible. Turn on the hazard warning flashers. See *Hazard Warning Flashers on page 6-3*.

### Warning

Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall causing injury or death. Find a level place to change the tire. To help prevent the vehicle from moving:

1. Set the parking brake firmly.
2. Put an automatic transmission in P (Park) or a manual transmission in 1 (First) or R (Reverse).
3. Turn off the engine and do not restart while the vehicle is raised.
4. Do not allow passengers to remain in the vehicle.
5. Place wheel blocks, 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 repair or change a tire.

## Tire Changing

### Removing the Spare Tire and Tools

The spare tire and tools are located in the storage compartment in the rear of the vehicle.

To access the spare tire and tools:

1. Open the liftgate. See *Liftgate* on page 2-9.
2. Lift the trim cover.



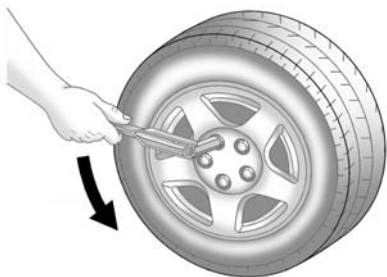
3. If the vehicle has a subwoofer assembly on top of the spare tire, remove it by turning the center retainer counterclockwise.
4. If the vehicle does not have a subwoofer, turn the retainer counterclockwise to remove the spare tire.

## 10-58 Vehicle Care

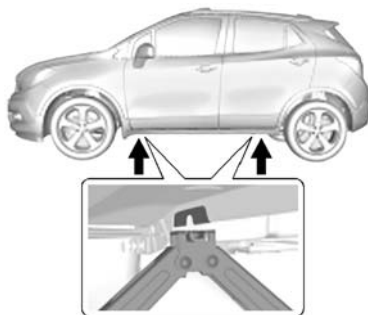
5. Remove the spare tire, jack, and tools and place them near the tire being changed.

### Removing the Flat Tire and Installing the Spare Tire

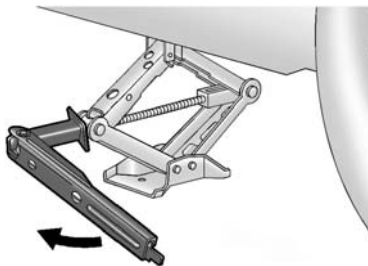
1. Do a safety check before proceeding. See *If a Tire Goes Flat* on page 10-56.



2. Turn the wheel wrench counterclockwise to loosen the wheel nuts. Do not remove them yet.



3. Place the jack at the position marked with a half circle.



4. Place the hex tube end of the wrench over the hex head of the jack to attach it.
5. Turn the wheel wrench clockwise until the lift head is firmly contacting the proper lifting point nearest the flat tire.

#### **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

(Continued)

**Warning (Continued)**

avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.

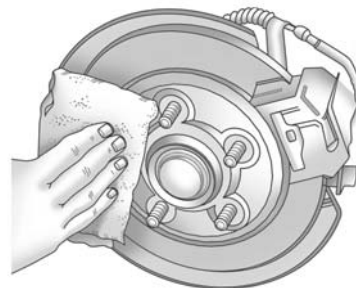
**⚠ Warning**

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

6. Turn the wheel wrench clockwise to raise the vehicle far enough off the ground so there is enough room for the spare tire to fit underneath the wheel well.
7. Turn the wheel nuts counterclockwise to remove them.
8. Remove the flat tire.

**⚠ Warning**

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In 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.



9. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.
10. Place the spare tire on the wheel-mounting surface.

**⚠ Warning**

Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.



## 10-60 Vehicle Care

11. Reinstall the wheel nuts. Turn each nut clockwise, by hand, until the wheel is held against the hub.
12. Lower the vehicle by turning the wheel wrench counterclockwise. Lower the jack completely.

### 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 on page 12-2* for original equipment wheel nut torque specifications.

### Caution

Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See *Capacities and Specifications on page 12-2* for the wheel nut torque specification.



13. Tighten the wheel nuts firmly with the wheel wrench in a crisscross sequence, as shown.

### Caution

Wheel covers will not fit on the vehicle's compact spare. If you try to put a wheel cover on the compact spare, the cover or the spare could be damaged.

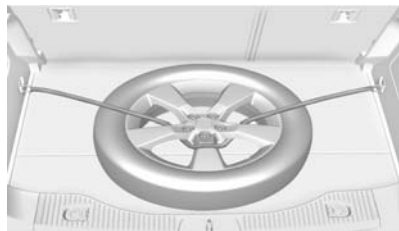
## Storing a Flat or Spare Tire and Tools

### Warning

Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.

### Storing the Flat Tire and Tools

1. Return the jack and tools to their original storage location.
2. Replace the trim cover.
3. Place the flat tire, lying flat, in the rear storage compartment.
4. Attach one end of the strap to a cargo tie-down in the rear of the vehicle.



5. Route the strap through the wheel, as shown.
6. Attach the other end of the strap to the other cargo tie-down in the rear of the vehicle.
7. Tighten the strap.

### Storing the Compact Spare Tire and Tools

Reverse the instructions for removing the spare tire and tools to store the spare tire.

The compact spare tire is for temporary use only. Replace the compact spare tire with a full-size tire as soon as you can. See *Compact Spare Tire on page 10-61*.

### Compact Spare Tire

#### Warning

Driving with more than one compact spare tire at a time could result in loss of braking and handling. This could lead to a crash and you or others could be injured. Use only one compact spare tire at a time.

If this vehicle has a compact spare tire, it was fully inflated when new; however, it can lose air over time.

Check the inflation pressure regularly. It should be 420 kPa (60 psi).

Stop as soon as possible and check that the spare tire is correctly inflated after being installed on the vehicle. The compact spare tire is designed for temporary use only. The vehicle will perform differently with the spare tire installed and it is recommended that the vehicle speed be limited to 80 km/h (50 mph). To conserve the tread of the spare tire, have the standard tire repaired or replaced as soon as convenient and return the spare tire to the storage area.

When using a compact spare tire, the ABS and Traction Control systems may engage until the spare tire is recognized by the vehicle, especially on slippery roads. Adjust driving to reduce possible wheel slip.

**⚠ Caution**

When the compact spare is installed, do not take the vehicle through an automatic car wash with guide rails. The compact spare can get caught on the rails which can damage the tire, wheel, and other parts of the vehicle.

Do not use the compact spare on other vehicles.

Do not mix the compact spare tire or wheel with other wheels or tires. They will not fit. Keep the spare tire and its wheel together.

**⚠ Caution**

Tire chains will not fit the compact spare. Using them can damage the vehicle and the chains. Do not use tire chains on the compact spare.

## Jump Starting

For more information about the vehicle battery, see *Battery on page 10-20*.

If the battery has run down, try to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

**⚠ Warning**

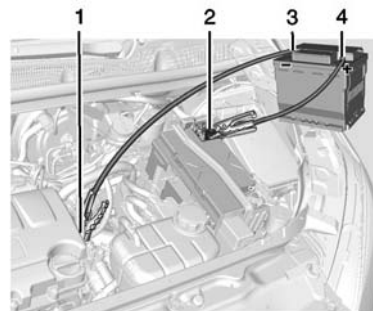
Batteries can hurt you. They can be dangerous because:

- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

If you do not follow these steps exactly, some or all of these things can hurt you.

**⚠ 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. Discharged Battery Negative Grounding Point
2. Discharged Battery Positive Terminal

3. Good Battery Negative Terminal
4. Good Battery Positive Terminal

The jump start negative grounding point (1) for the discharged battery is the engine block or an engine mounting bolt. Connect to a spot as far away from the discharged battery as possible.

The jump start positive terminal on the discharged battery (2) is located in the engine compartment on the driver side of the vehicle.

The jump start positive terminal (3) and negative terminal (4) are on the battery of the vehicle providing the jump start.

The positive jump start connection for the discharged battery is under a trim cover. Open the cover to expose the terminal.

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. Position the two vehicles so that they are not touching.
3. Set the parking brake firmly and put the shift lever in P (Park) with an automatic transmission, or Neutral with a manual transmission.

 **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  
(Continued)

**Caution (Continued)**

warranty. Whenever possible, turn off or unplug all accessories on either vehicle when jump starting.

4. Turn the ignition to LOCK/OFF. Turn off all lights and accessories in both vehicles, except the hazard warning flashers if needed.

 **Warning**

An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.

### **Warning**

Using a match near a battery can cause battery gas to explode. People have been hurt doing this, and some have been blinded. Use a flashlight if you need more light.

Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.

### **Warning**

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

5. Connect one end of the red positive (+) cable to the positive (+) terminal on the discharged battery.
6. Connect the other end of the red positive (+) cable to the positive (+) terminal of the good battery.
7. Connect one end of the black negative (-) cable to the negative (-) terminal of the good battery.
8. Connect the other end of the black negative (-) cable to the negative (-) grounding point for the discharged battery.
9. Start the engine in the vehicle with the good battery and run the engine at idle speed for at least four minutes.
10. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

### **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.

## Towing

### Towing the Vehicle

 **Caution**

Incorrectly towing a disabled vehicle may cause damage. The damage would not be covered by the vehicle warranty.

Have the vehicle towed on a flatbed car carrier or a wheel lift tow truck. If a wheel lift tow truck is used, the drive wheels cannot contact the road while the vehicle is being towed. A wheel dolly must be used to lift all drive wheels off the ground.

 **Caution**

Improper use of the tow eye can cause vehicle damage. Use caution and low speeds to prevent damage to the vehicle.

If equipped, carefully open the cover by using the small notch that conceals the tow eye socket.

Install the tow eye into the socket by turning it clockwise until it stops. When the tow eye is removed, reinstall the cover with the notch in the original position.

Consult your dealer or a professional towing service if the disabled vehicle must be towed.

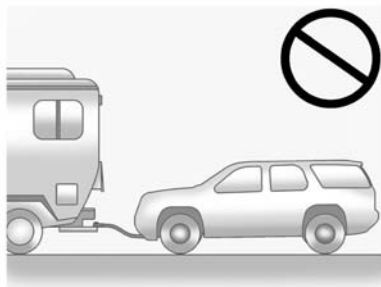
### Recreational Vehicle Towing

Recreational vehicle towing means towing the vehicle behind another vehicle, such as behind a motor home. The two most common types of recreational vehicle towing are known as dinghy towing and dolly towing. Dinghy towing is towing the vehicle with all four wheels on the ground. Dolly towing is towing the vehicle with two wheels on the ground and two wheels up on a device known as a dolly.

Here are some important things to consider before recreational vehicle towing:

- What is the towing capacity of the towing vehicle? Be sure to read the tow vehicle manufacturer's recommendations.
- What is the distance that will be traveled? Some vehicles have restrictions on how far and how long they can tow.
- Is the proper towing equipment going to be used? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is the vehicle ready to be towed? Just as preparing the vehicle for a long trip, make sure the vehicle is prepared to be towed.

### Dinghy Towing

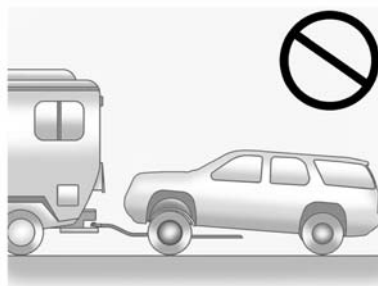


#### Caution

If the vehicle is towed with all four wheels on the ground, the drivetrain components could be damaged. The repairs would not be covered by the vehicle warranty. Do not tow the vehicle with all four wheels on the ground.

The vehicle was not designed to be towed with all four wheels on the ground.

### Dolly Towing (All-Wheel-Drive Vehicles)



All-wheel-drive vehicles must not be towed with two wheels on the ground. To properly tow these vehicles, they should be placed on a platform trailer with all four wheels off of the ground.

### Dolly Towing (Front-Wheel-Drive Vehicles Only)

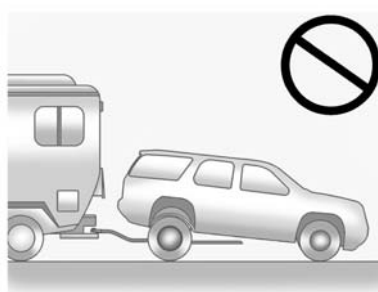
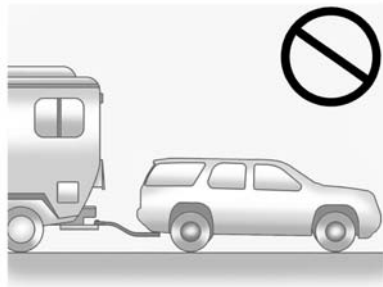


To tow a front-wheel-drive vehicle from the front with two wheels on the ground:

1. Put the front wheels on a dolly.
2. Move the shift lever to P (Park).
3. Set the parking brake.
4. Clamp the steering wheel in a straight-ahead position with a clamping device designed for towing.

5. Remove the key from the ignition.
6. Secure the vehicle to the dolly.
7. Release the parking brake.

### Towing the Vehicle from the Rear



**⚠ Caution**

Towing the vehicle from the rear could damage it. Also, repairs would not be covered by the vehicle warranty. Never have the vehicle towed from the rear.

Do not tow the vehicle from the rear.

## 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* on page 11-12.

#### 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

(Continued)




**Caution (Continued)**

products can be obtained from your dealer. Follow all manufacturer directions regarding correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.

 **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.

The  symbol is on any underhood compartment electrical center that should not be power

washed. 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

(Continued)

**Caution (Continued)**

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 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 a cleaning solution approved for aluminum 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 chrome cleaners.
- 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.

## 10-70 Vehicle Care

- 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 Dielectric silicone grease 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 on page 11-12*.

### **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 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  
(Continued)

**Caution (Continued)**

automatic car wash that uses silicone carbide tire cleaning brushes. Damage could occur and the repairs would not be covered by the vehicle warranty.

**Steering, Suspension, and Chassis Components**

Visually inspect 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 hook-up, binding, leaks, cracks, chafing, etc.

Visually check constant velocity joint boots and axle seals for leaks.

**Body Component Lubrication**

Lubricate all key lock cylinders, hood hinges, liftgate hinges, steel fuel door hinge, unless the components are plastic. Applying

silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

**Underbody Maintenance**

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.

**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. Note that newspapers or dark garments that can transfer color to home furnishings can also permanently transfer color to the vehicle's interior.

Use a soft bristle brush to remove dust from knobs and crevices on the instrument cluster. Using a mild soap solution, immediately remove hand lotions, sunscreen, and insect repellent from all interior surfaces or permanent damage may result.

Your dealer may have products for cleaning the interior. Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage. Apply all cleaners directly to the cleaning cloth. Do not spray cleaners directly on any switches or controls. Cleaners should be removed quickly. Never allow cleaners to remain on the surface being cleaned for extended periods of time.

Cleaners may contain solvents that can become concentrated in the interior. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning the interior, maintain adequate ventilation by opening the doors and windows.

To prevent damage, do not clean the interior using the following cleaners or techniques:

- Never use a razor or any other sharp object to remove a soil from any interior surface.
- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with excessive pressure.
- Do not use laundry detergents or dishwashing soaps with degreasers. For liquid cleaners, use approximately 20 drops per 3.8 L (1 gal) of water. A concentrated soap solution will leave a residue that creates streaks and attracts dirt. Do not use solutions that contain strong or caustic soap.
- Do not heavily saturate the upholstery when cleaning.
- Do not use solvents or cleaners containing solvents.

### Interior Glass

To clean, use a terry cloth fabric dampened with water. Wipe droplets left behind with a clean dry cloth. Commercial glass cleaners may be used, if necessary, after cleaning the interior glass with plain water.

 <b>Caution</b>
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<p>To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.</p>
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Cleaning the windshield with water during the first three to six months of ownership will reduce tendency to fog.

### Speaker Covers

Vacuum around a speaker cover gently, so that the speaker will not be damaged. Clean spots with just water and mild soap.

### Coated Moldings

Coated moldings should be cleaned.

- When lightly soiled, wipe with a sponge or soft lint-free cloth dampened with water.
- When heavily soiled, use warm soapy water.

### Fabric/Carpet/Suede

Start by vacuuming the surface using a soft brush attachment. If a rotating brush attachment is being used during vacuuming, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible using one of the following techniques:

- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soils, remove as much as possible prior to vacuuming.

To clean:

1. Saturate a clean lint-free colorfast cloth with water. 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.

Following the cleaning process, a paper towel can be used to blot excess moisture.

### **Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays**

For vehicles with high gloss surfaces or vehicle displays, use a microfiber cloth to wipe surfaces. Before wiping the surface with the microfiber cloth, use a soft bristle brush to remove dirt that could scratch the surface. Then use the microfiber cloth by gently rubbing to clean. Never use window cleaners or solvents. Periodically hand wash the microfiber cloth separately, using mild soap. Do not use bleach or fabric softener. Rinse thoroughly and air dry before next use.

#### **Caution**

Do not attach a device with a suction cup to the display. This may cause damage and would not be covered by the warranty.

### **Instrument Panel, Leather, Vinyl, Other Plastic Surfaces, 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,  
(Continued)

#### **Caution (Continued)**

may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, spot lifters, or spot removers. Do not use cleaners that contain silicone or wax-based products. Cleaners containing these solvents can permanently change the appearance and feel of leather or soft trim and are not recommended.

Do not use cleaners that increase gloss, especially on the instrument panel. Reflected glare can decrease visibility through the windshield under certain conditions.

 **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**

Wash with warm water and mild detergent. Do not use chlorine bleach. Rinse with cold water, and then dry completely.

**Care of Safety Belts**

Keep belts clean and dry.

 **Warning**

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

**Floor Mats**

 **Warning**

If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

Use the following guidelines for proper floor mat usage.

- The original equipment floor mats were designed for your vehicle. If the floor mats need replacing, it is recommended that GM certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the accelerator or brake pedal. 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.



## 10-76 Vehicle Care

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The driver side floor mat is held in place by a button-type retainer.



### Removing and Replacing the Floor Mats

1. Pull up on the rear of the floor mat to unlock the retainers and remove.
2. Reinstall by lining up the floor mat retainer openings over the carpet retainers and snap into position.
3. Make sure the floor mat is properly secured and verify that it does not interfere with the pedals.

## Service and Maintenance

### General Information

General Information ..... 11-1

### Maintenance Schedule

Maintenance Schedule ..... 11-2

### Special Application Services

Special Application  
Services ..... 11-8

### Additional Maintenance and Care

Additional Maintenance  
and Care ..... 11-8

### Recommended Fluids, Lubricants, and Parts

Recommended Fluids and  
Lubricants ..... 11-12  
Maintenance Replacement  
Parts ..... 11-13

### Maintenance Records

Maintenance Records ..... 11-14

## 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.

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.

## 11-2 Service and Maintenance

Because of the way people use vehicles, maintenance needs vary. There may need to be more frequent checks and services. The Additional Required Services - Normal are for vehicles that:

- Carry passengers and cargo within recommended limits on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-10*.
- Are driven on reasonable road surfaces within legal driving limits.
- Use the recommended fuel. See *Fuel on page 9-42*.

Refer to the information in the Maintenance Schedule Additional Required Services - Normal chart.

The Additional Required Services - Severe are for vehicles that are:

- Mainly driven in heavy city traffic in hot weather.
- Mainly driven in hilly or mountainous terrain.

- Frequently towing a trailer.
- Used for high speed or competitive driving.
- Used for taxi, police, or delivery service.

Refer to the information in the Maintenance Schedule Additional Required Services - Severe chart.

### Warning

Performing maintenance work can be dangerous and can cause serious injury. Perform maintenance work only if the required information, proper tools, and equipment are available. If they are not, see your dealer to have a trained technician do the work. See *Doing Your Own Service Work on page 10-3*.

## Maintenance Schedule

### Owner Checks and Services

#### At Each Fuel Stop

- Check the engine oil level. See *Engine Oil on page 10-7*.

#### Once a Month

- Check the tire inflation pressures. See *Tire Pressure on page 10-43*.
- Inspect the tires for wear. See *Tire Inspection on page 10-48*.
- Check the windshield washer fluid level. See *Washer Fluid on page 10-17*.

### Engine Oil Change

When the CHANGE ENGINE OIL SOON DIC 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* on page 10-9.

**Tire Rotation and Required Services Every 12 000 km/ 7,500 mi**

Rotate the tires, if recommended for the vehicle, and perform the following services. See *Tire Rotation* on page 10-49.

- Check engine oil level and oil life percentage. If needed, change engine oil and filter, and reset oil life system. See *Engine Oil* on page 10-7 and *Engine Oil Life System* on page 10-9.

- Check engine coolant level. See *Engine Coolant* on page 10-12.
- Check engine cooling system hoses and connections.
- Check windshield washer fluid level. See *Washer Fluid* on page 10-17.
- Visually inspect windshield wiper blades for wear, cracking, or contamination. See *Exterior Care* on page 10-67. Replace worn or damaged wiper blades. See *Wiper Blade Replacement* on page 10-22.
- Check tire inflation pressures. See *Tire Pressure* on page 10-43.
- Inspect tire wear. See *Tire Inspection* on page 10-48.
- Visually check for fluid leaks.
- Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter* on page 10-11.

- Inspect brake system.
- Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear. See *Exterior Care* on page 10-67.
- Check restraint system components. See *Safety System Check* on page 3-22.
- Visually inspect fuel system for damage or leaks.
- Visually inspect exhaust system and nearby heat shields for loose or damaged parts.
- Lubricate body components. See *Exterior Care* on page 10-67.
- Check starter switch. See *Starter Switch Check* on page 10-20.
- Check automatic transmission shift lock control function. See *Automatic Transmission Shift Lock Control Function Check* on page 10-21.

## 11-4 Service and Maintenance

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- Check ignition transmission lock. See *Ignition Transmission Lock Check* on page 10-21.
- Check parking brake and automatic transmission park mechanism. See *Park Brake and P (Park) Mechanism Check* on page 10-21.
- Check accelerator pedal for damage, high effort, or binding. Replace if needed.
- Visually inspect gas strut for signs of wear, cracks, or other damage. Check the hold open ability of the strut. See your dealer if service is required.
- Inspect sunroof track and seal, if equipped. See *Sunroof* on page 2-17.



## 11-6 Service and Maintenance

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### Footnotes — Maintenance Schedule Additional Required Services - Normal

(1) Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, areas with poor air quality, or areas with high dust levels.

Replacement may also be needed if there is a reduction in air flow, excessive window fogging, or odors.

(2) Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition.

(3) Or every four years, whichever comes first.

(4) Or every five years, whichever comes first. See *Cooling System on page 10-12*.

(5) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

(6) Or every three years, whichever comes first.

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.						✓						✓							✓	
Replace spark plugs. Inspect spark plug wires.								✓							✓					
Drain and fill engine cooling system. (4)																				✓
Visually inspect accessory drive belts. (5)																				✓
Replace brake fluid. (6)						✓						✓						✓		



## 11-8 Service and Maintenance

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### Footnotes — Maintenance Schedule Additional Required Services - Severe

(1) Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, areas with poor air quality, or areas with high dust levels. Replacement may also be needed if there is a reduction in air flow, excessive window fogging, or odors.

(2) Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition.

(3) Or every four years, whichever comes first.

(4) Or every five years, whichever comes first. See *Cooling System* on page 10-12.

(5) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

(6) Or every three years, whichever comes first.

### Special Application Services

- Severe Commercial Use Vehicles Only: Lubricate chassis components every 5 000 km/ 3,000 mi.
- Have underbody flushing service performed. See "Underbody Maintenance" in *Exterior Care* on page 10-67.

### Additional Maintenance and Care

Your vehicle is an important investment and caring for it properly may help to avoid future costly repairs. To maintain vehicle performance, additional maintenance services may be required.

It is recommended that your dealer perform these services — their trained dealer technicians know your vehicle best. Your dealer can also perform a thorough assessment with a multi-point inspection to recommend when your vehicle may need attention.

The following list is intended to explain the services and conditions to look for that may indicate services are required.

### Battery

The battery supplies power to start the engine and operate any additional electrical accessories.

- To avoid break-down or failure to start the vehicle, maintain a battery with full cranking power.
- Trained dealer technicians have the diagnostic equipment to test the battery and ensure that the connections and cables are corrosion-free.

### Belts

- Belts may need replacing if they squeak or show signs of cracking or splitting.
- Trained dealer technicians 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 on page 11-12* 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.

## 11-10 Service and Maintenance

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### 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 on page 10-72* and *Exterior Care on page 10-67*.

### Wheel Alignment

Wheel alignment is critical for ensuring that the tires deliver optimal wear and performance.

- Signs that the alignment may need to be adjusted include pulling, improper vehicle handling, or unusual tire wear.
- Your dealer has the required equipment to ensure proper wheel alignment.

### Windshield

For safety, appearance, and the best viewing, keep the windshield clean and clear.

- Signs of damage include scratches, cracks, and chips.
- Trained dealer technicians can inspect the windshield and recommend proper replacement if needed.

### **Wiper Blades**

Wiper blades need to be cleaned and kept in good condition to provide a clear view.

- Signs of wear include streaking, skipping across the windshield, and worn or split rubber.
- Trained dealer technicians can check the wiper blades and replace them when needed.

## Recommended Fluids, Lubricants, and Parts

### Recommended Fluids and Lubricants

Usage	Fluid/Lubricant
Engine Oil	Use only engine oil meeting the dexos1™ specification of the proper SAE viscosity grade. Look for the dexos1 approved logo for GM approved engine oil. See <i>Engine Oil</i> on page 10-7.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant. See <i>Engine Coolant</i> on page 10-12.
Hydraulic Brake System	DOT 4 Hydraulic Brake Fluid (GM Part No. 19299570, in Canada 19299571).
Windshield Washer	Automotive windshield washer fluid that meets regional freeze protection requirements.
Automatic Transmission	DEXRON®-VI Automatic Transmission Fluid.
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor, and Release Pawl	Lubriplate Lubricant Aerosol (GM Part No. 89021668, in Canada 89021674) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Key Lock Cylinders, Hood and Door Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474).
Weatherstrip Conditioning	Weatherstrip Lubricant (GM Part No. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. 12345579, in Canada 10953481).

## Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

### Maintenance Replacement Parts

Part	GM Part Number	ACDelco Part Number
Engine Air Cleaner/Filter	95021102	A3184C
Engine Oil Filter	55594651	PF2257G
Passenger Compartment Air Filter	13271190	CF181
Spark Plugs	55585517	41-121
Wiper Blades		
Driver Side – 65.0 cm (25.6 in)	95915125	—
Passenger Side – 38.0 cm (15.0 in)	95915127	—
Rear – 26.5 cm (10.4 in)	95915137	—

## 11-14 Service and Maintenance

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### 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	Services Performed

## Technical Data

### Vehicle Identification

Vehicle Identification	
Number (VIN) .....	12-1
Service Parts Identification	
Label .....	12-1

### Vehicle Data

Capacities and	
Specifications .....	12-2
Engine Drive Belt Routing ...	12-3

## Vehicle Identification

### Vehicle Identification Number (VIN)



This legal identifier is in the front corner of the instrument panel, on the left side of the vehicle. It can be seen through the windshield from outside. The VIN also appears on the Vehicle Certification and Service Parts labels and certificates of title and registration.

## Engine Identification

The eighth character in the VIN is the engine code. This code identifies the vehicle's engine, specifications, and replacement parts. See "Engine Specifications" under *Capacities and Specifications* on page 12-2 for the vehicle's engine code.

## Service Parts Identification Label

If equipped, this label on the inside of the glove box, has the following information:

- Vehicle Identification Number (VIN).
- Model designation.
- Paint information.
- Production options and special equipment.

Do not remove this label from the vehicle.



## Vehicle Data

### Capacities and Specifications

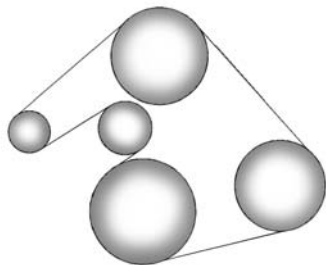
The following approximate capacities are given in metric and English conversions. See *Recommended Fluids and Lubricants on page 11-12* for more information.

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		
1.4L L4	7.3 L	7.7 qt
Engine Oil with Filter		
1.4L L4	4.0 L	4.2 qt
Fuel Tank	53 L	14 gal
Wheel Nut Torque	140 N•m	100 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	Transmission	Spark Plug Gap
1.4L L4	B	Automatic	0.7 mm (0.028 in)
1.4L L4	8	Automatic	0.7 mm (0.028 in)

**Engine Drive Belt Routing**



**1.4L L4 Engine**



## Customer Information

### Customer Information

Customer Satisfaction Procedure .....	13-1
Customer Assistance Offices .....	13-3
Customer Assistance for Text Telephone (TTY) Users .....	13-4
Online Owner Center .....	13-4
GM Mobility Reimbursement Program .....	13-5
Roadside Assistance Program .....	13-5
Scheduling Service Appointments .....	13-7
Courtesy Transportation Program .....	13-7
Collision Damage Repair .....	13-8
Service Publications Ordering Information .....	13-11
Radio Frequency Identification (RFID) .....	13-12
Radio Frequency Statement .....	13-12

### Reporting Safety Defects

Reporting Safety Defects to the United States Government .....	13-12
Reporting Safety Defects to the Canadian Government .....	13-13
Reporting Safety Defects to General Motors .....	13-13

### Vehicle Data Recording and Privacy

Vehicle Data Recording and Privacy .....	13-14
Event Data Recorders .....	13-14
OnStar® .....	13-15
Infotainment System .....	13-15

## Customer Information

### Customer Satisfaction Procedure

Your satisfaction and goodwill are important to your dealer and to Buick. 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.

## 13-2 Customer Information

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**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 1-800-521-7300. In Canada, contact General Motors of Canada Customer Care Centre at 1-800-263-3777 (English) or 1-800-263-7854 (French).

We encourage you to call the toll-free number in order to give the 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 Buick, remember that your concern will likely be resolved at a dealer's facility. That is why we suggest following Step One first.

### **STEP THREE — U.S. Owners:**

Both General Motors and your dealer are committed to making sure you are completely satisfied with the new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you can file with the Better Business Bureau (BBB) Auto Line® Program to enforce your rights.

The BBB Auto Line Program is an out-of-court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within

40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program  
Council of Better Business Bureaus, Inc.  
4200 Wilson Boulevard  
Suite 800  
Arlington, VA 22203-1838

Telephone: 1-800-955-5100  
[www.dr.bbb.org/goauto](http://www.dr.bbb.org/goauto)

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage, and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.

**STEP THREE — Canadian**

**Owners:** In the event that you do not feel your concerns have been addressed after following the procedure outlined in Steps One and Two, General Motors of Canada Limited wants you to be aware of its participation in a no-charge Mediation/Arbitration program. General Motors of Canada Limited has committed to binding arbitration of owner disputes involving factory-related vehicle service claims. The program provides for the review of the facts involved by an impartial third party arbiter, and may include an informal hearing before the arbiter. The program is designed so that the entire dispute settlement process, from the time you file your complaint to the final decision, should be completed in approximately 70 days. We believe our impartial program offers advantages over courts in most jurisdictions because it is informal, quick, and free of charge.

For further information concerning eligibility in the Canadian Motor Vehicle Arbitration Plan (CAMVAP), call toll-free 1-800-207-0685, or call the General Motors Customer Care Centre, 1-800-263-3777 (English), 1-800-263-7854 (French), or write to:

Mediation/Arbitration Program  
c/o Customer Care Centre  
General Motors of Canada Limited  
Mail Code: CA1-163-005  
1908 Colonel Sam Drive  
Oshawa , Ontario L1H 8P7

The inquiry should be accompanied by the Vehicle Identification Number (VIN).

**Customer Assistance Offices**

Buick encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail Buick, the letter should be addressed to:

**United States and Puerto Rico**

Buick Customer Assistance Center  
P.O. Box 33136  
Detroit, MI 48232-5136  
www.Buick.com

1-800-521-7300  
1-800-832-8425 (For Text Telephone devices (TTYs))  
Roadside Assistance:  
1-800-252-1112

From U.S. Virgin Islands:  
1-800-496-9994

## 13-4 Customer Information

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### Canada

General Motors of Canada Limited  
Customer Care Centre, Mail Code:  
CA1-163-005

1908 Colonel Sam Drive  
Oshawa, Ontario L1H 8P7  
www.gm.ca

1-800-263-3777 (English)  
1-800-263-7854 (French)  
1-800-263-3830 (For Text  
Telephone devices (TTYs))  
Roadside Assistance:  
1-800-268-6800

### All Overseas Locations

Please contact the local General  
Motors Business Unit.

### Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf,  
hard of hearing, or speech-impaired  
and who use Text Telephones  
(TTYs), Buick has TTY equipment  
available at its Customer Assistance


Center. Any TTY user can  
communicate with Buick by dialing:  
1-800-832-8425. TTY users in  
Canada can dial 1-800-263-3830.


### Online Owner Center


#### Online Owner Experience (U.S.) my.buick.com


The Buick online owner experience  
is a one-stop resource that allows  
interaction with Buick and keeps  
important vehicle-specific  
information in one place.


#### Membership Benefits


 **(Vehicle Information):**  
Download owner manuals and view  
vehicle-specific how-to videos.


 **(Maintenance Information):**  
View maintenance schedules,  
required alerts, OnStar onboard  
vehicle diagnostic information, and  
schedule service appointments.

 **(Service History):** View  
printable dealer-recorded service  
records and self-recorded service  
records.

 **(Preferred Dealer  
Information):** Select a preferred  
dealer and view dealer location,  
maps, phone numbers, and hours.

 **(Warranty Tracking  
Information):** Track the vehicle's  
warranty information.

 **(Recall Information):** View  
active recalls or search by Vehicle  
Identification Number (VIN). See  
*Vehicle Identification Number (VIN)*  
on page 12-1.

 **(Other Account Information):**  
View GM Card, SiriusXM Satellite  
radio, and OnStar account  
information.

 **(Live Chat Support):** Chat live  
with online help representatives.

Visit my.buick.com to register your  
vehicle.

## Buick Owner Centre (Canada) buickowner.ca

Take a trip to the Buick Owner Centre:

- Chat live with online help representatives.
- Use the Vehicle Tools section.
- Access third party enthusiast sites and social media networks.
- Locate owner resources such as lease-end, financing, and warranty information.
- Retrieve your favorite articles, quizzes, tips and multimedia galleries organized into the Features and Auto Care Sections.
- Download the owner manual for your vehicle, quickly and easily.
- Find the Buick-recommended maintenance services for your vehicle.

## GM Mobility Reimbursement Program



This program is available to qualified applicants for cost reimbursement of eligible aftermarket adaptive equipment required for the vehicle, such as hand controls or a wheelchair/scooter lift for the vehicle.

For more information on the limited offer, visit [www.gmmobility.com](http://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. Visit [www.gm.ca](http://www.gm.ca) or call 1-800-GM-DRIVE (463-7483) for details. TTY users call 1-800-263-3830.

## Roadside Assistance Program

For U.S.-purchased vehicles, call 1-800-252-1112; (Text Telephone (TTY): 1-888-889-2438).

For Canadian-purchased vehicles, call 1-800-268-6800.

Service is available 24 hours a day, 365 days a year.

### Calling for Assistance

When calling Roadside Assistance, have the following information ready:

- Your name, home address, and home telephone number.
- Telephone number of your location.
- Location of the vehicle.



## 13-6 Customer Information

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- Model, year, color, and license plate number of the vehicle.
- Odometer reading, Vehicle Identification Number (VIN), and delivery date of the vehicle.
- Description of the problem.

### Coverage

Services are provided up to 6 years/110 000 km (70,000 mi), whichever comes first.

In the U.S., anyone driving the vehicle is covered. In Canada, a person driving the vehicle without permission from the owner is not covered.

Roadside Assistance is not a part of the New Vehicle Limited Warranty. General Motors North America and Buick reserve the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

General Motors North America and Buick 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.

### Services Provided

- **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<sup>®</sup>. 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 Buick 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 sand, mud, or snow.

- **Flat Tire Change:** Service to change a flat tire with the spare tire. The spare tire, if equipped, must be in good condition and properly inflated. It is the owner's 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.

### Services Not Included in Roadside Assistance

- 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 Assistance:** Must be over 150 kilometers from where your trip was started to qualify. General Motors of Canada Limited requires pre-authorization, original detailed receipts, and a copy of the repair orders. Once authorization has been received, the Roadside Assistance advisor will help you make arrangements and explain how to receive payment.
- **Alternative Service:** If assistance cannot be provided right away, the Roadside Assistance advisor may give

permission to get local emergency road service. You will receive payment, up to \$100, after sending the original receipt to Roadside Assistance. 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.

## 13-8 Customer Information

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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 through the use of 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.

## 13-10 Customer Information

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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 Assistance Program on page 13-5*.

Gather the following information:

- Driver name, address, and telephone number.
- Driver license number.
- Owner name, address, and telephone number.
- Vehicle license plate number.
- Vehicle make, model, and model year.
- Vehicle Identification Number (VIN).
- Insurance company and policy number.
- General description of the damage to the other vehicle.

Choose a reputable repair facility that uses quality replacement parts. See “Collision Parts” earlier in this section.

If the airbag has inflated, see *What Will You See after an Airbag Inflates?* on page 3-28.

### Managing the Vehicle Damage Repair Process

In the event that the vehicle requires damage repairs, GM recommends that you take an active role in its repair. If you have a pre-determined repair facility of choice, take the vehicle there, or have it towed there. Specify to the facility that any required replacement collision parts be original equipment parts, either new Genuine GM parts or recycled original GM parts. Remember, recycled parts will not be covered by the GM vehicle warranty.

Insurance pays the bill for the repair, but you must live with the repair. Depending on your policy limits, your insurance company may initially value the repair using aftermarket parts. Discuss this with the repair professional, and insist on Genuine GM parts. Remember, if the vehicle is leased, you may be obligated to have the vehicle repaired with Genuine GM parts, even if your insurance coverage does not pay the full cost.

If another party's insurance company is paying for the repairs, you are not obligated to accept a repair valuation based on that insurance company's collision policy repair limits, as you have no contractual limits with that company. In such cases, you can have control of the repair and parts choices as long as the cost stays within reasonable limits.

## **Service Publications Ordering Information**

### **Service Manuals**

Service Manuals have the diagnosis and repair information on the engines, transmission, axle, suspension, brakes, electrical, steering, body, etc.

### **Service Bulletins**

Service Bulletins give additional technical service information needed to knowledgeable service General Motors cars and trucks.

Each bulletin contains instructions to assist in the diagnosis and service of the vehicle.

### **Owner Information**

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The Owner Manual includes the Maintenance Schedule for all models.

In-Portfolio: Includes a Portfolio, Owner Manual, and Warranty Manual.

RETAIL SELL PRICE: \$35.00 – \$40.00 (U.S.) plus handling and shipping fees.

Without Pouch: Owner Manual only.

RETAIL SELL PRICE:  
\$25.00 (U.S.) plus handling and shipping fees.

### **Current and Past Models**

Technical Service Bulletins and Manuals are available for current and past model GM vehicles.

ORDER TOLL FREE:

1-800-551-4123 Monday – Friday  
8:00 AM – 6:00 PM Eastern Time

For Credit Card Orders Only  
(VISA-MasterCard-Discover), see  
Helm, Inc. at: [www.helminc.com](http://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 Identification (RFID)

RFID technology is used in some vehicles for functions such as tire pressure monitoring and ignition system security, as well as in connection with conveniences such as Remote Keyless Entry (RKE) transmitters for remote door locking/unlocking and starting, and in-vehicle transmitters for garage door openers. RFID technology in GM vehicles does not use or record personal information or link with any other GM system containing personal information.

### Radio Frequency Statement

This vehicle has systems that operate on a radio frequency that complies with Part 15/Part 18 of the Federal Communications Commission (FCC) rules and with Industry Canada Standards RSS-GEN/210/220/310.

Operation is subject to the following two conditions:

1. The device may not cause harmful interference.
2. The device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to any of these systems by other than an authorized service facility could void authorization to use this equipment.

### Reporting Safety Defects

#### Reporting Safety Defects to the United States Government

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or General Motors.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to:

Administrator, NHTSA  
1200 New Jersey Avenue, S.E.  
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

### **Reporting Safety Defects to the Canadian Government**

If you live in Canada, and you believe that the vehicle has a safety defect, notify Transport Canada immediately, and notify General Motors of Canada Limited. Call Transport Canada at 1-800-333-0510 or write to:

Transport Canada  
Road Safety Branch  
80 rue Noel  
Gatineau, QC J8Z 0A1

### **Reporting Safety Defects to General Motors**

In addition to notifying NHTSA (or Transport Canada) in a situation like this, please notify General Motors.

Call 1-800-521-7300, or write:

Buick Customer Assistance Center  
P.O. Box 33136  
Detroit , MI 48232-5136

In Canada, call 1-800-263-3777 (English) or 1-800-263-7854 (French), or write:

General Motors of Canada Limited  
Customer Care Centre, Mail Code:  
CA1-163-005  
1908 Colonel Sam Drive  
Oshawa , Ontario L1H 8P7



### Vehicle Data Recording and Privacy

The vehicle has a number of computers that record information about the vehicle's performance and how it is driven. For example, the vehicle uses computer modules to monitor and control engine and transmission performance, to monitor the conditions for airbag deployment and deploy them in a crash, and, if equipped, to provide antilock braking to help the driver control the vehicle. These modules may store data to help the dealer technician service the vehicle.

Some modules may also store data about how the vehicle is operated, such as rate of fuel consumption or average speed. These modules may retain personal preferences, such as radio presets, seat positions, and temperature settings.

### Event Data Recorders

This vehicle is equipped with an event data recorder (EDR). The main purpose of an EDR is to record, in certain crash or near crash-like situations, such as an air bag deployment or hitting a road obstacle, data that will assist in understanding how a vehicle's systems performed. The EDR is designed to record data related to vehicle dynamics and safety systems for a short period of time, typically 30 seconds or less. The EDR in this vehicle is designed to record such data as:

- How various systems in your vehicle were operating;
- Whether or not the driver and passenger safety belts were buckled/fastened;
- How far (if at all) the driver was depressing the accelerator and/or brake pedal; and,
- How fast the vehicle was traveling.

These data can help provide a better understanding of the circumstances in which crashes and injuries occur. NOTE: EDR data are recorded by your vehicle only if a non-trivial crash situation occurs; no data are recorded by the EDR under normal driving conditions and no personal data (e.g., name, gender, age, and crash location) are recorded. However, other parties, such as law enforcement, could combine the EDR data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have the special equipment, can read the information if they have access to the vehicle or the EDR.

GM will not access this data or share it with others except: with the consent of the vehicle owner or,

if the vehicle is leased, with the consent of the lessee; in response to an official request by police or similar government office; as part of GM's defense of litigation through the discovery process; or, as required by law. Data that GM collects or receives may also be used for GM research needs or may be made available to others for research purposes, where a need is shown and the data is not tied to a specific vehicle or vehicle owner.

## **OnStar®**

If the vehicle is equipped with OnStar® and has an active subscription, additional data may be collected through the OnStar system. This includes information about the vehicle's operation; collisions involving the vehicle; the use of the vehicle and its features; and, in certain situations, the location and approximate GPS speed of the vehicle. Refer to the

OnStar Terms and Conditions and Privacy Statement on the OnStar website.

## **Infotainment System**

If the vehicle is equipped with a navigation system as part of the infotainment system, use of the system may result in the storage of destinations, addresses, telephone numbers, and other trip information. See the infotainment manual for information on stored data and for deletion instructions.



# OnStar

## OnStar Overview

OnStar Overview ..... 14-1

## OnStar Services




Emergency ..... 14-2  
 Security ..... 14-3  
 Navigation ..... 14-3  
 Connections ..... 14-4  
 Vehicle Diagnostics ..... 14-6

## OnStar Additional Information

OnStar Additional Information ..... 14-6

## OnStar Overview




-  Voice Command Button
-  Blue OnStar Button
-  Emergency Button

This vehicle may be equipped with a comprehensive, in-vehicle system that can connect to a live OnStar Advisor for Emergency, Security, Navigation, Connection, and Diagnostic Services. OnStar services may require a paid subscription. 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 public emergency service providers. OnStar may collect information about you and your

vehicle, including location information. See OnStar's Terms and Conditions and Privacy Statement for more details including system limitations at [www.onstar.com](http://www.onstar.com) (U.S.) or [www.onstar.ca](http://www.onstar.ca) (Canada).

The OnStar system status light is next to the OnStar buttons. If the status light is:


- Solid Green: System is on.
- Flashing Green: On a call.
- Red: Indicates a problem.
- Off: System is off. Press the blue OnStar button twice to speak with an OnStar Advisor.

Press  or call 1-888-4-ONSTAR (1-888-466-7827) to speak to an Advisor.

Press  to:


- Make a call, end a call, or answer an incoming call.
- Give OnStar Hands-Free Calling voice commands.

- Give OnStar Turn-by-Turn Navigation voice commands. Requires a specific OnStar subscription plan.
- Obtain the WiFi network name, or Service Set Identifier or SSID, and passphrase (if equipped).

Press  to connect to a live Advisor to:

- Verify account information or update contact information.
- Get driving directions. Requires a specific OnStar subscription plan.
- Receive On-Demand Diagnostics for a check of the vehicle's key operating systems.

- Receive Roadside Assistance.
- Manage WiFi Settings (if equipped).


Press  to get a priority connection to an OnStar Emergency 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 and evacuation routes.

## OnStar Services

### Emergency

With Automatic Crash Response, the OnStar system can automatically connect to an OnStar Emergency Advisor. The built-in system can automatically connect to help in certain crashes.

Press  to connect to an OnStar Emergency Advisor. GPS technology is used to identify the vehicle location and can provide important information to emergency personnel. OnStar Emergency Advisors are trained to provide assistance and link to existing public emergency service providers in emergency situations.


With OnStar Crisis Assist, specially trained Crisis Advisors are available 24 hours a day, 7 days a week, to provide a central point of contact, assistance, and information if a crisis occurs.

## Security


OnStar provides services including Stolen Vehicle Assistance, Remote Ignition Block, and Roadside Assistance, if equipped. OnStar can unlock the vehicle doors remotely, if equipped with automatic door locks, and can help police locate the vehicle if it is stolen.

## Navigation

OnStar navigation requires a specific OnStar subscription plan.

Press  to receive directions or have them sent to the vehicle navigation screen, if equipped. Destinations can also be forwarded to the vehicle from MapQuest.com.


### Turn-by-Turn Navigation

1. Press  to connect to a live Advisor.
2. Request directions.
3. Directions are downloaded to the vehicle.


4. Follow the voice-guided commands.

### Using Voice Commands During a Planned Route


#### Cancel Route

1. Press . System responds: "OnStar ready," then a tone. Say "Cancel route." System responds: "Do you want to cancel directions?"
2. Say "Yes." System responds: "OK, request completed, thank you, goodbye."

#### Route Preview


1. 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 the distance to the destination, then responds with "OnStar ready," then a tone.

### Other Navigation Services Available from OnStar

**OnStar eNav:** Subscribers can send destinations from MapQuest.com to the vehicle Turn-by-Turn Navigation or screen-based navigation system (if equipped). When ready, the directions will be downloaded to the vehicle.

**Destination Download:** Press , then request the Advisor to download directions to the

navigation system in the vehicle (if equipped). After the call ends, press the “Go” button on the navigation screen to begin driving directions.

If directions are downloaded to the navigation system, the route can only be canceled through the navigation system.

Destinations can also be downloaded on the go. For information about eNav or Destination Download, see [www.onstar.com](http://www.onstar.com) (U.S.) or [www.onstar.ca](http://www.onstar.ca) (Canada).



### Connections

The required specific OnStar subscription plan includes the services that follow to help customers stay connected.

For coverage maps, see [www.onstar.com](http://www.onstar.com) (U.S.) or [www.onstar.ca](http://www.onstar.ca) (Canada).

### WiFi Connectivity (If Equipped)

The vehicle has a WiFi hotspot that provides a high-speed, wireless Internet connection to connect multiple mobile devices (data plan required).

1. To retrieve WiFi hotspot information, press  and select or say “WiFi settings.”
2. The WiFi settings will display the WiFi network name/SSID, passphrase, and level of encryption.
3. To change the SSID or passphrase, press  or call 1-888-4-ONSTAR to connect with an Advisor.

### OnStar RemoteLink® Mobile App (If Equipped)

Download the OnStar RemoteLink mobile app to select Apple®, Android™, and BlackBerry® or Windows 7 or 8 mobile devices. From the mobile device, check the vehicle's fuel level, oil life, or tire

pressure (if the vehicle is equipped with the tire pressure monitoring system); or activate remote horn and lights. Also remote start the vehicle (if factory equipped) or unlock the doors from anywhere with a wireless connection (if equipped with automatic locks). With a required specific OnStar subscription plan, a destination can be sent to the vehicle. For OnStar RemoteLink information and compatibility, see [www.onstar.com](http://www.onstar.com) (U.S.) or [www.onstar.ca](http://www.onstar.ca) (Canada).


### OnStar RemoteLink® Key Fob Services

This feature is included for five years and allows for remote door lock/unlock (if equipped with automatic locks), remote start (if factory equipped), or activation of horn and lights from anywhere with a wireless signal. Download the app and start using it any time during the trial period to get started.


## OnStar Hands-Free Calling

This service allows calls to be made and received from the vehicle.

### To 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," followed by a tone.
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."

### Store a Name Tag for Speed Dialing


1. Press . System responds: "OnStar ready."
2. Say "Store." System responds: "Please say the number you would like to store."

3. Say the entire number without pausing. System responds: "Please say the name tag."
4. Pick a name tag. System responds: "About to store <name tag>. Does that sound OK?"
5. Say "Yes" or say "No" to try again. System responds: "OK, storing <name tag>."

### Place a Call Using a Stored Number

1. Press . System responds: "OnStar ready."
2. Say "Call <name tag>." System responds: "OK, calling <name tag>."

### Verify Minutes and Expiration

Press  and say "Minutes" then "Verify" to check how many minutes remain and their expiration date.



## Vehicle Diagnostics

OnStar Vehicle Diagnostics can perform a vehicle check every month. It will check the engine, transmission, antilock brakes, and other major vehicle systems. It also checks the tire pressures, if the vehicle is equipped with the Tire Pressure Monitoring System. If an On-Demand Diagnostics check is needed, press **On**, and an Advisor can run a check.

## OnStar Additional Information

### Transferring Service

Press **On** to request account transfer eligibility information. The Advisor can assist in canceling or removing account information.

### Selling/Transferring the Vehicle

Call 1-888-4-ONSTAR immediately to terminate your OnStar services if the vehicle is disposed of, sold, transferred, or if the lease ends.

### Reactivation for Subsequent Owners

Press **On** and follow the prompts to speak to an Advisor as soon as possible. The Advisor will update vehicle records and explain the OnStar service options available.

## How OnStar Service Works

Automatic Crash Response, Emergency Services, Crisis Assist, Stolen Vehicle Assistance, Vehicle Diagnostics, Remote Door Unlock, Roadside Assistance, Turn-by-Turn Navigation, and Hands-Free Calling are available on most vehicles. Not all OnStar services are available everywhere or on all vehicles. For more information, a full description of OnStar services, system limitations, and OnStar terms and conditions:

- Call 1-888-4-ONSTAR (1-888-466-7827).
- See [www.onstar.com](http://www.onstar.com) (U.S.).
- See [www.onstar.ca](http://www.onstar.ca) (Canada).
- Call TTY 1-877-248-2080.
- Press **On** 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 may prevent service such as hills, tall buildings, tunnels, weather, electrical system design and architecture of the vehicle, damage to the vehicle in a crash, or wireless phone network congestion or jamming.

See *Radio Frequency Statement on page 13-12*.

## Services for People with Disabilities

Advisors provide services to help subscribers with physical disabilities and medical conditions.


Press  for help with:

- Locating a gas station with an attendant to pump gas.
- Finding a hotel, restaurant, etc., that meets accessibility needs.
- Providing directions to the closest hospital or pharmacy in urgent situations.

## TTY Users

OnStar has the ability to communicate to deaf, hard-of-hearing, or speech-impaired customers while in the vehicle. The available dealer-installed TTY system can provide in-vehicle access to all of the OnStar services, except Virtual Advisor and OnStar Turn-by-Turn Navigation.

## OnStar Personal Identification Number (PIN)


A PIN is needed to access some of the OnStar services, like Remote Door Unlock and Stolen Vehicle Assistance. 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 1-888-4-ONSTAR.

## 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 five days. After five days, OnStar can contact Roadside Assistance and a locksmith to help gain access to the vehicle.

### Global Positioning System (GPS)


- Obstruction of the GPS can occur in a large city with tall buildings; in parking garages; around airports; in tunnels, underpasses; or 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

Do not place items over or near the antenna to prevent blocking cellular and GPS signal reception. Cellular reception is required for OnStar to send remote signals to the vehicle.

### Unable to Connect to OnStar Message

If there is limited cellular coverage or the cellular network has reached maximum capacity, this message may come on. Press  to try the call again or try again after driving a few miles into another cellular area.

### Vehicle and Power Issues


OnStar services require a vehicle electrical system, wireless service, and GPS satellite technologies to be available and operating for features

to function properly. These systems may not operate if the battery is discharged or disconnected.

### Add-on Electrical Equipment

The OnStar system is integrated into the electrical architecture of the vehicle. Do not add any electrical equipment. See *Add-On Electrical Equipment on page 9-46*. Added electrical equipment may interfere with the operation of the OnStar system and cause it to not operate.

### Privacy

The complete OnStar Privacy Statement may be found at [www.onstar.com](http://www.onstar.com) (U.S.), or [www.onstar.ca](http://www.onstar.ca) (Canada). We recommend that you review it. If you have any questions, call 1-888-4-ONSTAR (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://www.lg.com/global/support/opensource/index> and <https://www.onstar.com/web/portal/getdocuments>

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**A**

About Driving the Vehicle .....	iii
Accessories and Modifications .....	10-2
Accessory Power .....	9-19
Add-On Electrical Equipment .....	9-46
Additional Information OnStar® .....	14-6
Additional Maintenance and Care .....	11-8
Adjustments Lumbar, Front Seats .....	3-4
Air Cleaner/Filter, Engine .....	10-11
Air Filter, Passenger Compartment .....	8-6
Air Intake .....	8-6
Air Vents .....	8-6
Airbag System Check .....	3-35
How Does an Airbag Restrain? .....	3-28
Passenger Sensing System .....	3-30
What Makes an Airbag Inflate? .....	3-28

Airbag System (cont'd) What Will You See after an Airbag Inflates? .....	3-28
When Should an Airbag Inflate? .....	3-27
Where Are the Airbags? .....	3-25
Airbags Adding Equipment to the Vehicle .....	3-34
Passenger Status Indicator .....	5-12
Readiness Light .....	5-12
Servicing Airbag-Equipped Vehicles .....	3-34
System Check .....	3-23
Alarm Vehicle Security .....	2-11
Alert Side Blind Zone (SBZA) .....	9-36
All-Season Tires .....	10-36
All-Wheel Drive .....	9-26, 10-20
Antilock Brake System (ABS) .....	9-26
Warning Light .....	5-17
Appearance Care Exterior .....	10-67
Interior .....	10-72

Armrest Front Seat .....	3-8
Rear Seat .....	3-14
Assistance Program, Roadside .....	13-5
Automatic Door Locks .....	2-8
Headlamp System .....	6-3
Transmission .....	9-23
Transmission Fluid .....	10-10
Automatic Transmission Manual Mode .....	9-25
Shift Lock Control Function Check .....	10-21

**B**

Battery .....	10-20
Jump Starting .....	10-62
Power Protection .....	6-6
Voltage and Charging Messages .....	5-25
Blade Replacement, Wiper .....	10-22

Brake	
System Warning Light	5-16
Brakes	10-17
Antilock	9-26
Assist	9-27
Fluid	10-18
Parking	9-27
System Messages	5-25
Braking	9-4
Break-In, New Vehicle	9-14
Bulb Replacement	10-26
Halogen Bulbs	10-24
Headlamp Aiming	10-23
Headlamps	10-24
Headlamps, Front Turn	
Signal, and Parking	
Lamps	10-24
License Plate Lamps	10-26
Buying New Tires	10-51

**C**

Calibration	5-4
California	
Fuel Requirements	9-43
Perchlorate Materials	
Requirements	10-2
Warning	10-2
Camera	
Rear Vision (RVC)	9-38
Canadian Vehicle Owners	iii
Capacities and	
Specifications	12-2
Carbon Monoxide	
Engine Exhaust	9-22
Liftgate	2-9
Winter Driving	9-7
Cargo	
Cover	4-3
Management System	4-3
Cautions, Danger, and	
Warnings	iv
Center Console Storage	4-3
Chains, Tire	10-55
Charging System Light	5-13

Check	
Engine Light	5-13
Ignition	
Transmission Lock	10-21
Child Restraints	
Infants and Young	
Children	3-38
Lower Anchors and	
Tethers for Children	3-44
Older Children	3-36
Securing	3-50, 3-52
Systems	3-41
Circuit Breakers	10-27
Cleaning	
Exterior Care	10-67
Interior Care	10-72
Climate Control Systems	8-1
Air Conditioning	8-1
Dual Automatic	8-3
Heating	8-1
Clock	5-5
Cluster, Instrument	5-8
Collision Damage Repair	13-8
Compact Spare Tire	10-61
Compartments	
Storage	4-1

Compass ..... 5-4

Connections  
 OnStar® ..... 14-4

Control  
 Traction and Electronic  
 Stability ..... 9-28

Control of a Vehicle ..... 9-4

Convenience Net ..... 4-4

Convex Mirrors ..... 2-13

Coolant  
 Engine ..... 10-12  
 Engine Temperature  
 Gauge ..... 5-10

Cooling System ..... 10-12  
 Engine Messages ..... 5-26

Courtesy Lamps ..... 6-5

Courtesy Transportation  
 Program ..... 13-7

Cover  
 Cargo ..... 4-3

Cruise Control ..... 9-30  
 Light ..... 5-21

Cupholders ..... 4-2

Customer Assistance ..... 13-4  
 Offices ..... 13-3  
 Text Telephone (TTY)  
 Users ..... 13-4

Customer Information  
 Service Publications  
 Ordering Information ..... 13-11

Customer Satisfaction  
 Procedure ..... 13-1

**D**

Damage Repair, Collision ..... 13-8

Danger, Warnings, and  
 Cautions ..... iv

Data Recorders, Event ..... 13-14

Daytime Running  
 Lamps (DRL) ..... 6-2  
 Indicator Light ..... 5-21

Defensive Driving ..... 9-3

Delayed Locking ..... 2-8

Distracted Driving ..... 9-2

Dome Lamps ..... 6-5

Door  
 Ajar Messages ..... 5-26  
 Delayed Locking ..... 2-8  
 Locks ..... 2-7  
 Power Locks ..... 2-7

Drive Belt Routing, Engine ..... 12-3

Drive Systems  
 All-Wheel Drive ..... 9-26, 10-20

Driver Behavior ..... 9-2

Driver Information  
 Center (DIC) ..... 5-22

Driving  
 Defensive ..... 9-3  
 Drunk ..... 9-3  
 Environment ..... 9-2  
 For Better Fuel Economy ..... 1-19  
 Hill and Mountain Roads ..... 9-7  
 If the Vehicle is Stuck ..... 9-9  
 Loss of Control ..... 9-5  
 Off-Road Recovery ..... 9-5  
 Vehicle Load Limits ..... 9-10  
 Wet Roads ..... 9-6  
 Winter ..... 9-7

Driving the Vehicle ..... iii

Dual Automatic Climate  
 Control System ..... 8-3



**E**

Electrical Equipment, Add-On .....	9-46
Electrical System	
Engine Compartment	
Fuse Block .....	10-28
Fuses and Circuit Breakers .....	10-27
Instrument Panel Fuse Block .....	10-31
Overload .....	10-27
Rear Compartment Fuse Block .....	10-33
Emergency OnStar® .....	14-2
Engine	
Air Cleaner/Filter .....	10-11
Check and Service Engine Soon Light .....	5-13
Compartment Overview .....	10-6
Coolant .....	10-12
Coolant Temperature Gauge .....	5-10
Cooling System .....	10-12
Cooling System Messages ..	5-26
Drive Belt Routing .....	12-3

Engine (cont'd)	
Exhaust .....	9-22
Heater .....	9-17
Oil Life System .....	10-9
Oil Messages .....	5-26
Overheating .....	10-15
Power Messages .....	5-26
Pressure Light .....	5-19
Running While Parked .....	9-23
Starting .....	9-16
Entry Lighting .....	6-6
Event Data Recorders .....	13-14
Exit Lighting .....	6-6
Extender, Safety Belt .....	3-22
Exterior Lamp Controls .....	6-1

**F**

Features	
Memory .....	1-7
Filter,	
Engine Air Cleaner .....	10-11
First Aid Kit .....	4-5
Flash-to-Pass .....	6-2
Flashers, Hazard Warning .....	6-3
Flat Tire .....	10-56
Changing .....	10-57

Floor Mats .....	10-75
Fluid	
Automatic Transmission ....	10-10
Brakes .....	10-18
Washer .....	10-17
Fog Lamps	
Front .....	6-4
Folding Mirrors .....	2-14
Folding Seatback .....	3-9
Forward Collision Alert (FCA) System .....	9-33
Frequency Statement	
Radio .....	13-12
Front Fog Lamp	
Light .....	5-21
Front Seat Armrest .....	3-8
Front Seats	
Adjustment .....	3-3
Heated .....	3-8
Fuel .....	9-42
Additives .....	9-43
Economy Driving .....	1-19
Filling a Portable Fuel Container .....	9-45
Filling the Tank .....	9-43
Foreign Countries .....	9-43

Fuel (cont'd)  
 Gauge ..... 5-9  
 Low Fuel Warning Light ..... 5-20  
 Requirements, California ..... 9-43  
 System Messages ..... 5-27  
**Fuses**  
 Engine Compartment  
     Fuse Block ..... 10-28  
 Fuses and Circuit  
     Breakers ..... 10-27  
 Instrument Panel Fuse  
     Block ..... 10-31  
 Rear Compartment Fuse  
     Block ..... 10-33

**G**

**Gauges**  
 Engine Coolant  
     Temperature ..... 5-10  
 Fuel ..... 5-9  
 Odometer ..... 5-9  
 Speedometer ..... 5-9  
 Tachometer ..... 5-9  
 Trip Odometer ..... 5-9  
 Warning Lights and  
     Indicators ..... 5-7

**General Information**  
 Service and Maintenance ..... 11-1  
 Towing ..... 9-46  
 Vehicle Care ..... 10-2  
**GM Mobility Reimbursement  
 Program** ..... 13-5

**H**

Halogen Bulbs ..... 10-24  
 Hazard Warning Flashers ..... 6-3  
 Head Restraints ..... 3-2  
**Headlamps**  
     Aiming ..... 10-23  
     Automatic ..... 6-3  
     Bulb Replacement ..... 10-24  
     Daytime Running  
         Lamps (DRL) ..... 6-2  
     Daytime Running Lamps  
         (DRL) Indicator Light ..... 5-21  
     Flash-to-Pass ..... 6-2  
     High-Beam On Light ..... 5-21  
     High/Low Beam Changer ..... 6-2  
     Lamps On Reminder ..... 5-21  
**Heated**  
     Steering Wheel ..... 5-2  
**Heated Front Seats** ..... 3-8

Heated Mirrors ..... 2-14  
**Heater**  
     Engine ..... 9-17  
 Heating and Air Conditioning ... 8-1  
 High-Beam On Light ..... 5-21  
 Hill and Mountain Roads ..... 9-7  
 Hood ..... 10-4  
 Horn ..... 5-2  
**How to Wear Safety Belts  
 Properly** ..... 3-16

**I**

Ignition Positions ..... 9-14  
**Ignition Transmission Lock  
 Check** ..... 10-21  
**Immobilizer** ..... 2-12  
     Light ..... 5-20  
**Indicator**  
     Vehicle Ahead ..... 5-18  
**Infants and Young Children,  
 Restraints** ..... 3-38  
**Infotainment** ..... 7-1  
**Infotainment System** ..... 13-15  
**Instrument Cluster** ..... 5-8  
**Instrument Panel**  
     Storage Area ..... 4-1

Interior Rearview Mirrors ..... 2-14  
Introduction ..... iii

## **J**

Jump Starting ..... 10-62

## **K**

Keyless Entry  
Remote (RKE) System ..... 2-3  
Keys ..... 2-1

## **L**

Labeling, Tire Sidewall ..... 10-37  
Lamps  
Courtesy ..... 6-5  
Daytime Running (DRL) ..... 6-2  
Dome ..... 6-5  
Exterior Controls ..... 6-1  
Front Fog ..... 6-4  
Headlamps, Front Turn  
Signal, and Parking  
Lamps ..... 10-24  
License Plate ..... 10-26

Lamps (cont'd)  
Malfunction Indicator ..... 5-13  
On Reminder ..... 5-21  
Reading ..... 6-6  
Lane Departure  
Warning (LDW) ..... 9-40  
Lane Departure Warning  
Light ..... 5-17  
Lap-Shoulder Belt ..... 3-17  
LATCH System  
Replacing Parts after a  
Crash ..... 3-50  
LATCH, Lower Anchors and  
Tethers for Children ..... 3-44  
Liftgate ..... 2-9  
Lighting  
Entry ..... 6-6  
Exit ..... 6-6  
Illumination Control ..... 6-5  
Lights  
Airbag Readiness ..... 5-12  
Antilock Brake System  
(ABS) Warning ..... 5-17  
Brake System Warning ..... 5-16  
Charging System ..... 5-13  
Cruise Control ..... 5-21

Lights (cont'd)  
Daytime Running  
Lamps (DRL) ..... 5-21  
Engine Oil Pressure ..... 5-19  
Flash-to-Pass ..... 6-2  
Front Fog Lamp ..... 5-21  
High-Beam On ..... 5-21  
High/Low Beam Changer ..... 6-2  
Immobilizer ..... 5-20  
Lane Departure Warning ..... 5-17  
Low Fuel Warning ..... 5-20  
Safety Belt Reminders ..... 5-11  
StabiliTrak® OFF ..... 5-18  
Tire Pressure ..... 5-19  
Traction Control System  
(TCS)/StabiliTrak® ..... 5-19  
Traction Off ..... 5-18  
Warning, Power Steering ..... 5-17  
Locks  
Automatic Door ..... 2-8  
Delayed Locking ..... 2-8  
Door ..... 2-7  
Lockout Protection ..... 2-8  
Power Door ..... 2-7  
Safety ..... 2-8  
Loss of Control ..... 9-5  
Low Fuel Warning Light ..... 5-20

Lower Anchors and Tethers  
for Children (LATCH  
System) ..... 3-44  
Lumbar Adjustment ..... 3-4  
Front Seats ..... 3-4

**M**

Maintenance  
Records ..... 11-14  
Maintenance and Care  
Additional ..... 11-8  
Maintenance Schedule ..... 11-2  
Recommended Fluids  
and Lubricants ..... 11-12  
Malfunction Indicator Lamp .... 5-13  
Manual Mode ..... 9-25  
Memory Features ..... 1-7  
Memory Seats ..... 3-6  
Messages  
Battery Voltage and  
Charging ..... 5-25  
Brake System ..... 5-25  
Door Ajar ..... 5-26  
Engine Cooling System ..... 5-26  
Engine Oil ..... 5-26  
Engine Power ..... 5-26

Messages (cont'd)  
Fuel System ..... 5-27  
Object Detection System ..... 5-27  
Ride Control System ..... 5-28  
Tire ..... 5-29  
Transmission ..... 5-29  
Vehicle ..... 5-25

Mirrors

Automatic Dimming  
Rearview ..... 2-15  
Convex ..... 2-13  
Folding ..... 2-14  
Heated ..... 2-14  
Manual Rearview ..... 2-14  
Power ..... 2-13  
Tilt in Reverse ..... 2-14

Mirrors, Interior Rearview ..... 2-14

Monitor System, Tire  
Pressure ..... 10-44

**N**

Navigation  
OnStar® ..... 14-3  
Net, Convenience ..... 4-4  
New Vehicle Break-In ..... 9-14

**O**

Object Detection System  
Messages ..... 5-27  
Odometer ..... 5-9  
Trip ..... 5-9  
Off-Road  
Recovery ..... 9-5  
Oil  
Engine ..... 10-7  
Engine Oil Life System ..... 10-9  
Messages ..... 5-26  
Pressure Light ..... 5-19  
Older Children, Restraints .... 3-36  
Online Owner Center ..... 13-4  
OnStar ..... 13-15  
OnStar®  
System, In Brief ..... 1-20  
OnStar® Additional  
Information ..... 14-6  
OnStar® Connections ..... 14-4  
OnStar® Emergency ..... 14-2  
OnStar® Navigation ..... 14-3  
OnStar® Overview ..... 14-1  
OnStar® Security ..... 14-3  
OnStar® Vehicle  
Diagnostics ..... 14-6

Ordering	
Service Publications .....	13-11
Outlets	
Power .....	5-5
Overheating, Engine .....	10-15

**P**

Park	
Shifting Into .....	9-19
Shifting Out of .....	9-20
Parking	
Brake .....	9-27
Brake and P (Park)	
Mechanism Check .....	10-21
Over Things That Burn .....	9-22
Parking Assist .....	9-34
Passenger Airbag Status	
Indicator .....	5-12
Passenger Compartment Air	
Filter .....	8-6
Passenger Sensing System ...	3-30
Perchlorate Materials	
Requirements, California .....	10-2
Personalization	
Vehicle .....	5-30

Power	
Door Locks .....	2-7
Mirrors .....	2-13
Outlets .....	5-5
Protection, Battery .....	6-6
Retained Accessory (RAP) ...	9-19
Seat Adjustment .....	3-4
Windows .....	2-15
Power Steering Warning	
Lights .....	5-17
Pregnancy, Using Safety	
Belts .....	3-21
Privacy	
Vehicle Data Recording .....	13-14
Program	
Courtesy Transportation .....	13-7
Proposition 65 Warning,	
California .....	10-2

**R**

Radio Frequency	
Identification (RFID) .....	13-12
Radio Frequency	
Statement .....	13-12
Reading Lamps .....	6-6
Rear Seat Armrest .....	3-14

Rear Seats .....	3-10
Rear Vision Camera (RVC) ....	9-38
Rear Window Washer/Wiper ....	5-4
Rearview Mirrors .....	2-14
Automatic Dimming .....	2-15
Reclining Seatbacks .....	3-5
Recommended Fluids and	
Lubricants .....	11-12
Records	
Maintenance .....	11-14
Recreational Vehicle	
Towing .....	10-65
Reimbursement Program,	
GM Mobility .....	13-5
Remote Keyless Entry	
(RKE) System .....	2-2, 2-3
Remote Vehicle Start .....	2-5
Replacement Bulbs .....	10-26
Replacement Parts	
Airbags .....	3-36
Maintenance .....	11-13
Replacing Airbag System .....	3-36
Replacing LATCH System	
Parts after a Crash .....	3-50
Replacing Safety Belt	
System Parts after a Crash ...	3-22

Reporting Safety Defects  
 Canadian Government ..... 13-13  
 General Motors ..... 13-13  
 U.S. Government ..... 13-12

Restraints  
 Where to Put ..... 3-43

Retained Accessory  
 Power (RAP) ..... 9-19

Reverse Tilt Mirrors ..... 2-14

Ride Control Systems  
 Messages ..... 5-28

Roads  
 Driving, Wet ..... 9-6

Roadside Assistance  
 Program ..... 13-5

Roof  
 Sunroof ..... 2-17

Roof Rack System ..... 4-5

Rotation, Tires ..... 10-49

Routing, Engine Drive Belt ..... 12-3

Running the Vehicle While  
 Parked ..... 9-23

**S**

Safety Belts ..... 3-14  
 Care ..... 3-22  
 Extender ..... 3-22  
 How to Wear Safety Belts  
 Properly ..... 3-16  
 Lap-Shoulder Belt ..... 3-17  
 Reminders ..... 5-11  
 Replacing after a Crash ..... 3-22  
 Use During Pregnancy ..... 3-21

Safety Defects Reporting  
 Canadian Government ..... 13-13  
 General Motors ..... 13-13  
 U.S. Government ..... 13-12

Safety Locks ..... 2-8

Safety System Check ..... 3-22

Scheduling Appointments ..... 13-7

Seats  
 Adjustment, Front ..... 3-3  
 Folding Seatback ..... 3-9  
 Head Restraints ..... 3-2  
 Heated Front ..... 3-8  
 Lumbar Adjustment, Front ..... 3-4  
 Memory ..... 3-6  
 Power Adjustment, Front ..... 3-4

Seats (cont'd)  
 Rear ..... 3-10  
 Reclining Seatbacks ..... 3-5  
 Underseat Storage ..... 4-2

Securing Child  
 Restraints ..... 3-50, 3-52

Security  
 OnStar® ..... 14-3  
 Vehicle ..... 2-11  
 Vehicle Alarm ..... 2-11

Service  
 Accessories and  
 Modifications ..... 10-2  
 Doing Your Own Work ..... 10-3  
 Engine Soon Light ..... 5-13  
 Maintenance Records ..... 11-14  
 Maintenance, General  
 Information ..... 11-1  
 Parts Identification Label ..... 12-1  
 Publications Ordering  
 Information ..... 13-11  
 Scheduling Appointments ..... 13-7

Services  
 Special Application ..... 11-8  
 Servicing the Airbag ..... 3-34

Shift Lock Control Function	
Check, Automatic	
Transmission .....	10-21
Shifting	
Into Park .....	9-19
Out of Park .....	9-20
Side Blind Zone	
Alert (SBZA) .....	9-36
Signals, Turn and	
Lane-Change .....	6-4
Spare Tire	
Compact .....	10-61
Special Application Services ...	11-8
Specifications and	
Capacities .....	12-2
Speedometer .....	5-9
StabiliTrak	
OFF Light .....	5-18
Start Vehicle, Remote .....	2-5
Starter Switch Check .....	10-20
Starting the Engine .....	9-16
Steering .....	9-4
Heated Wheel .....	5-2
Power, Warning Lights .....	5-17
Wheel Adjustment .....	5-2
Wheel Controls .....	5-2

Storage Areas	
Cargo Cover .....	4-3
Cargo Management System ...	4-3
Center Console .....	4-3
Convenience Net .....	4-4
Instrument Panel .....	4-1
Roof Rack System .....	4-5
Sunglasses .....	4-2
Underseat .....	4-2
Storage Compartments .....	4-1
Stuck Vehicle .....	9-9
Summer Tires .....	10-37
Sun Visors .....	2-17
Sunglass Storage .....	4-2
Sunroof .....	2-17
Symbols .....	iv
System	
Forward Collision	
Alert (FCA) .....	9-33
Infotainment .....	7-1, 13-15
Roof Rack .....	4-5

**T**

Tachometer .....	5-9
Text Telephone (TTY) Users ...	13-4
Theft-Deterrent Systems .....	2-12
Immobilizer .....	2-12
Time .....	5-5
Tires .....	10-35
All-Season .....	10-36
Buying New Tires .....	10-51
Chains .....	10-55
Changing .....	10-57
Compact Spare .....	10-61
Designations .....	10-39
Different Size .....	10-52
If a Tire Goes Flat .....	10-56
Inflation Monitor System ...	10-45
Inspection .....	10-48
Messages .....	5-29
Pressure Light .....	5-19
Pressure Monitor System ...	10-44
Rotation .....	10-49
Sidewall Labeling .....	10-37
Terminology and	
Definitions .....	10-40
Uniform Tire Quality	
Grading .....	10-53

Tires (cont'd)

- Wheel Alignment and Tire Balance ..... 10-54
- Wheel Replacement ..... 10-54
- When It Is Time for New Tires ..... 10-50
- Winter ..... 10-36

Towing

- General Information ..... 9-46
- Recreational Vehicle ..... 10-65
- Vehicle ..... 10-65

Traction

- Control System (TCS)/StabiliTrak® Light ..... 5-19
- Off Light ..... 5-18

Traction Control/Electronic Stability Control ..... 9-28

Transmission

- Automatic ..... 9-23
- Fluid, Automatic ..... 10-10
- Messages ..... 5-29

Transportation Program, Courtesy ..... 13-7

- Triangle, Warning ..... 4-4
- Trip Odometer ..... 5-9

Turn and Lane-Change Signals ..... 6-4

**U**

- Underseat Storage ..... 4-2
- Uniform Tire Quality Grading ..... 10-53
- Using This Manual ..... iii

**V**

Vehicle

- Alarm System ..... 2-11
- Canadian Owners ..... iii
- Control ..... 9-4
- Design ..... 9-2
- Identification Number (VIN) ..... 12-1
- Load Limits ..... 9-10
- Messages ..... 5-25
- Personalization ..... 5-30
- Remote Start ..... 2-5
- Security ..... 2-11
- Towing ..... 10-65

Vehicle Ahead Indicator ..... 5-18

Vehicle Care

- Tire Pressure ..... 10-43

Vehicle Data Recording and Privacy ..... 13-14

Vehicle Diagnostics

- OnStar® ..... 14-6

Ventilation, Air ..... 8-6

Visors ..... 2-17

**W**

Warning

- Brake System Light ..... 5-16
- Lane Departure (LDW) ..... 9-40

Warning Lights, Gauges, and Indicators ..... 5-7

Warning Triangle ..... 4-4

Warnings ..... iv

- Cautions and Danger ..... iv
- Hazard Flashers ..... 6-3

Washer Fluid ..... 10-17

Wheels

- Alignment and Tire Balance ..... 10-54
- Different Size ..... 10-52
- Replacement ..... 10-54

When It Is Time for New Tires ..... 10-50

Where to Put the Restraint .... 3-43

Windows

- Power ..... 2-15



Windshield	
Wiper/Washer .....	5-2
Winter	
Driving .....	9-7
Winter Tires .....	10-36
Wiper Blade Replacement ....	10-22
Wipers	
Rear Washer .....	5-4