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Litho in U.S.A.  
Part No. 84807757

## Introduction



The names, logos, emblems, slogans, vehicle model names, and vehicle body designs appearing in this manual including, but not limited to, GM, the GM logo, CADILLAC, the CADILLAC Emblem, and XT4 are trademarks and/or service marks of General Motors LLC, its subsidiaries, affiliates, or licensors.

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

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

Keep this manual in the vehicle for quick reference.

## Danger, Warning, and Caution

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

### **Danger**

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

### **Warning**

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

### **Caution**

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


## 2 Introduction





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

### Symbols

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

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

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

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


### Vehicle Symbol Chart

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

 : Air Conditioning System

 : Air Conditioning Refrigerant Oil

 : Airbag Readiness Light

 : Antilock Brake System (ABS)

 : Brake System Warning Light

 : Dispose of Used Components Properly

 : Do Not Apply High Pressure Water


 : Engine Coolant Temperature

 : Flame/Fire Prohibited

 : Flammable

 : Forward Collision Alert

 : Fuse Block Cover Lock Location

 : Fuses

 : ISOFIX/LATCH System Child Restraints


 : Keep Fuse Block Covers Properly Installed

 : Lane Change Alert

 : Lane Departure Warning


 : Lane Keep Assist


 : Malfunction Indicator Lamp

 : Oil Pressure

 : Park Assist


 : Pedestrian Ahead Indicator

 : Power

 : Rear Cross Traffic Alert

 : Registered Technician

 : Remote Vehicle Start


 : Risk of Electrical Fire

 : Seat Belt Reminders


 : Side Blind Zone Alert

 : Stop/Start

 : Tire Pressure Monitor

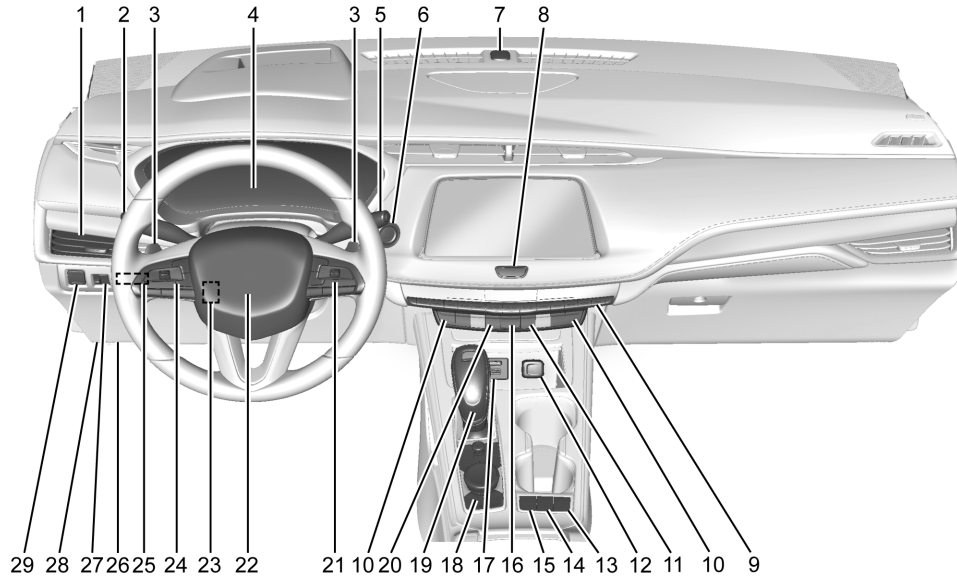
 : Traction Control/StabiliTrak/Electronic  
Stability Control (ESC)

 : Under Pressure

 : Vehicle Ahead Indicator

## 4 Introduction

### Instrument Panel Overview



- |   |  |  |
|---|--|--|
| <ol style="list-style-type: none"><li>1. <i>Air Vents</i> ⇨ 168.</li><li>2. <i>Exterior Lamp Controls</i> ⇨ 116.<br/>Turn Signal Lever. See <i>Turn and Lane-Change Signals</i> ⇨ 119.<br/>IntelliBeam System Button (If Equipped). See <i>Exterior Lamp Controls</i> ⇨ 116.</li><li>3. Tap Shift Controls. See <i>Manual Mode</i> ⇨ 192 (If Equipped).</li><li>4. <i>Instrument Cluster</i> ⇨ 93.<br/>Driver Information Center (DIC) Display. See <i>Driver Information Center (DIC)</i> ⇨ 106.</li><li>5. <i>Windshield Wiper/Washer</i> ⇨ 86.<br/><i>Rear Window Wiper/Washer</i> ⇨ 88.</li><li>6. ENGINE START/STOP Button. See <i>Ignition Positions</i> ⇨ 183.</li><li>7. Light Sensor. See <i>Automatic Headlamp System</i> ⇨ 118.</li><li>8. Home Button. See <i>Overview</i> ⇨ 123.</li><li>9. <i>Dual Automatic Climate Control System</i> ⇨ 164.</li><li>10. <i>Heated and Ventilated Front Seats</i> ⇨ 40 (If Equipped).</li><li>11. <i>Lane Keep Assist (LKA)</i> ⇨ 225 (If Equipped).</li><li>12. <i>Power Outlets</i> ⇨ 89.</li></ol> | <ol style="list-style-type: none"><li>13. <i>MODE Switch</i>. See <i>Driver Mode Control</i> ⇨ 197.</li><li>14. <i>Auto Stop Disable Switch</i>. See <i>Stop/Start System</i> ⇨ 185.</li><li>15. <i>Traction Control/Electronic Stability Control</i> ⇨ 196.</li><li>16. <i>Hazard Warning Flashers</i> ⇨ 119.</li><li>17. <i>USB Port</i> ⇨ 131.</li><li>18. <i>Infotainment Controls</i>. See <i>Overview</i> ⇨ 123.</li><li>19. <i>Shift Lever</i>. See <i>Automatic Transmission</i> ⇨ 188.</li><li>20. <i>Park Assist Button</i>. See <i>Assistance Systems for Parking or Backing</i> ⇨ 210.<br/><i>Automatic Parking Assist (APA) Button</i>. See <i>Assistance Systems for Parking or Backing</i> ⇨ 210.</li><li>21. <i>Steering Wheel Controls</i> ⇨ 124.<br/>Driver Information Center (DIC) Controls. See <i>Driver Information Center (DIC)</i> ⇨ 106.</li><li>22. <i>Horn</i> ⇨ 86.</li><li>23. <i>Steering Wheel Adjustment</i> ⇨ 85 (Out of View).</li><li>24. <i>Cruise Control</i> ⇨ 198.</li></ol> | <ol style="list-style-type: none"><li><i>Adaptive Cruise Control (Advanced)</i> ⇨ 200 (If Equipped).<br/><i>Heated Steering Wheel</i> ⇨ 85 (If Equipped).<br/><i>Forward Collision Alert (FCA) System</i> ⇨ 218 (If Equipped).</li><li>25. <i>Head-Up Display (HUD)</i> ⇨ 109 (Out of View) (If Equipped).</li><li>26. <i>Data Link Connector</i>. See <i>Malfunction Indicator Lamp (Check Engine Light)</i> ⇨ 99 (Out of View).</li><li>27. <i>Instrument Panel Illumination Control</i> ⇨ 120.</li><li>28. <i>Hood Release</i>. See <i>Hood</i> ⇨ 232 (Out of View).</li><li>29. <i>Electric Parking Brake</i> ⇨ 194.</li></ol> |
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## 6 Keys, Doors, and Windows

### Keys, Doors, and Windows

#### Keys and Locks

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### Keys and Locks

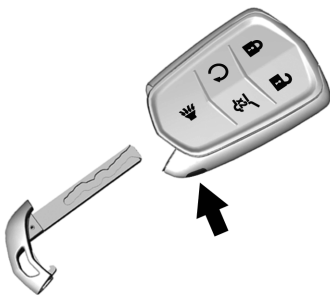
#### Keys

##### Warning

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



The key, inside the remote key, is used for all locks.



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

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

See your dealer if a new key is needed.

## Remote Key

If there is a decrease in the remote key operating range:

- Check the distance. The remote key may be too far from the vehicle.

- Check the location. Other vehicles or objects may be blocking the signal.
- Check the remote key's battery. See "Battery Replacement" later in this section.
- If the remote key is still not working correctly, see your dealer or a qualified technician for service.

## Remote Key Operation


The Keyless Access system allows for vehicle entry when the remote key is within 1 m (3 ft). See "Keyless Access Operation" following.


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

Other conditions can impact the performance of the remote key. See *Remote Key* ⇨ 7.





### With Power Liftgate Shown, Without Similar


 : Press to lock all doors and the fuel door. The turn signal indicators may flash and/or the horn may sound on the second press to indicate locking. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select "Vehicle" to display the list of available options and select "Remote Lock, Unlock, Start".



If the driver door is open when  is pressed, all doors will lock and the driver door will immediately unlock, if Open Door Anti-Lockout is enabled. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select


## 8 Keys, Doors, and Windows


“Vehicle” to display the list of available options and select “Power Door Locks”. If the passenger door is open when  is pressed, all doors lock.


Pressing  may also arm the alarm system. See *Vehicle Alarm System* ⇨ 23.




If equipped with remote folding mirrors, press and hold  for one second to remotely fold the mirrors, if enabled. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Comfort and Convenience”.



 : Press to unlock the driver door and the fuel door. Press  again within five seconds to unlock all doors. The remote key can be programmed to unlock all doors on the first button press. The turn signal indicators may flash to indicate unlocking. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Remote Lock, Unlock, Start”. When remotely unlocking the vehicle at night, the lights come on briefly to light your approach to the vehicle.


Pressing  will disarm the alarm system. See *Vehicle Alarm System* ⇨ 23.


If equipped with remote folding mirrors, press and hold  for one second to remotely unfold the mirrors, if enabled. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Comfort and Convenience”.

Press and hold  until the windows fully open. Windows will not operate unless remote window operation is enabled. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Remote Lock, Unlock, Start”.

 : Press and release  and then immediately press and hold  for at least four seconds to start the engine from outside the vehicle using the remote key. See *Remote Vehicle Start* ⇨ 12.

 : Press and release one time to initiate vehicle locator. The exterior lamps flash and the horn chirps three times. Press and hold  for three seconds to sound the panic

alarm. The horn sounds and the turn signal lamps flash for 30 seconds, or until  is pressed again or the vehicle is started.

 : If equipped, press twice quickly to open or close the liftgate.

Press once to stop the liftgate from moving.

### Keyless Access Operation

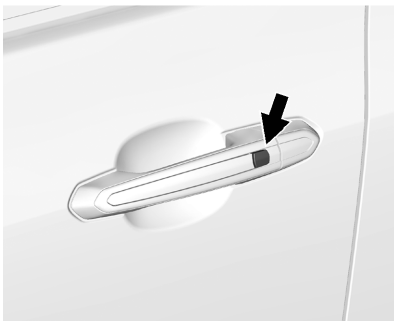
With the Keyless Access system, you can lock and unlock the doors and access the liftgate without removing the remote key from your pocket, purse, briefcase, etc. The remote key should be within 1 m (3 ft) of the liftgate or door being opened.

Keyless Access can be programmed to unlock all doors on the first lock/unlock press from the driver door. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Remote Lock, Unlock, Start”.

If equipped with memory seats, remote keys 1 and 2 are linked to seating positions of memory 1 or 2. See *Memory Seats* ⇨ 38.

### Keyless Unlocking/Locking from the Driver Door

When the doors are locked and the remote key is within 1 m (3 ft) of the driver door handle, pressing the lock/unlock button on the driver door handle will unlock the driver door. If the lock/unlock button is pressed again within five seconds, all passenger doors will unlock.



Driver Shown, Passenger Similar

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

- It has been more than five seconds since the first lock/unlock button press.

- Two lock/unlock button presses were used to unlock all doors.
- Any vehicle door has opened and all doors are now closed.

### Keyless Unlocking/Locking from Passenger Doors



When the doors are locked and the remote key is within 1 m (3 ft) of the door handle, pressing the lock/unlock button on that door handle will unlock all doors. Pressing the lock/unlock button will cause all doors to lock if either of the following occurs:

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

### Disable/Enable Keyless Unlocking of Exterior Door Handles and Liftgate



If equipped, keyless unlocking of the exterior door handles and liftgate can be disabled and enabled.

#### Disabling Keyless Unlocking:

With the vehicle off, press and hold  and  on the remote key at the same time for approximately three seconds. The turn signal lamps will flash four times quickly to indicate access is disabled. Using any

exterior handle to unlock the doors or open the liftgate will cause the turn signal lamps to flash four times quickly, indicating access is disabled. If disabled, disarm the alarm system before starting the vehicle.

#### Enabling Keyless Unlocking:

With the vehicle off, press and hold  and  on the remote key at the same time for approximately three seconds. The turn signal lamps will flash twice quickly to indicate access is enabled.

### Anti-Theft Locking from Any Door

When all doors are locked using the lock/unlock button, a second press of the button within five seconds will activate the Anti-theft Locking System.

### Anti-Theft Unlocking from Any Door

When all doors are unlocked using the lock/unlock button, the Anti-theft Locking system will be deactivated.

### Passive Locking

With Keyless Access this vehicle will lock several seconds after all doors are closed if the vehicle is off and at least one remote key has been removed or none remain in the interior.



## 10 Keys, Doors, and Windows

The fuel door will also lock.

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

To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Power Door Locks”.

### Temporary Disable of Passive Locking

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

### Remote Left in Vehicle Alert

When the vehicle is turned off and an remote key is left in the vehicle, the horn will chirp three times after all doors are closed. To view available settings for this feature, touch the Settings icon on the

infotainment home page. Select “Vehicle” to display the list of available options and select “Remote Lock, Unlock, Start”.

### Remote No Longer in Vehicle Alert

If the vehicle is on, with a door open, and then all doors are closed, the vehicle will check for remote key(s) inside. If an remote key is not detected, the Driver Information Center (DIC) will display NO REMOTE DETECTED and the horn will chirp three times.

This occurs only once each time the vehicle is driven.

To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Remote Lock, Unlock, Start”.

### Keyless Liftgate Opening

Press the touch pad on the liftgate handle to open the liftgate if the remote key is within 1 m (3 ft).

### Key Access

To access a vehicle with a weak remote key battery, see *Door Locks* ⇨ 13.

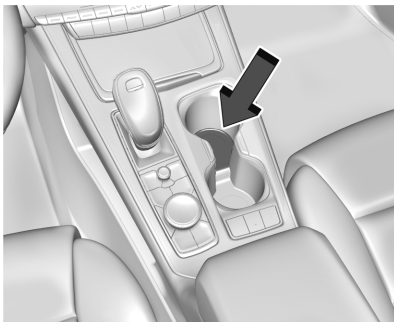
### Programming Remote Keys to the Vehicle

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

### Starting the Vehicle with a Low Remote Key Battery

When the vehicle is started, if the remote key battery is weak, the DIC may display NO REMOTE DETECTED or NO REMOTE KEY WAS DETECTED PLACE KEY IN TRANSMITTER POCKET THEN START YOUR VEHICLE. The DIC may also display REPLACE BATTERY IN REMOTE KEY.

To start the vehicle:



1. Place the remote key in the front cupholder.
2. With the vehicle in P (Park) or N (Neutral), press the brake pedal and ENGINE START/STOP.

Replace the remote key battery as soon as possible.

### Battery Replacement

#### Warning

Never allow children to play with the remote key. The remote key contains a small battery, which can be a choking

(Continued)

#### Warning (Continued)

hazard. If swallowed, internal burns can occur, resulting in severe injury or death. Seek medical attention immediately if a battery is swallowed.

#### Warning

To avoid personal injury, do not touch metal surfaces on the remote key when it has been exposed to extreme heat. These surfaces can be hot to the touch at temperatures above 59 °C (138 °F).

#### Caution

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

#### Caution

Always replace the battery with the correct type. Replacing the battery with an incorrect type could potentially create

(Continued)

#### Caution (Continued)

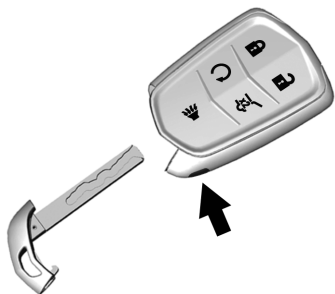
a risk of battery explosion. Dispose of used batteries according to instructions and local laws. Do not attempt to burn, crush, or cut the used battery, and avoid exposing the battery to environments with extremely low air pressures or high temperatures.

#### Caution

If the remote key is not reassembled properly, liquids could enter the housing and damage the circuitry, resulting in a remote key malfunction and/or failure. To prevent damage, always follow the steps for remote key reassembly in this manual to ensure the remote key is sealed properly whenever the remote key is opened.

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

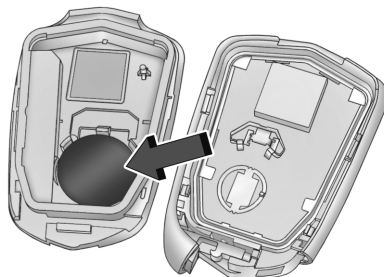
## 12 Keys, Doors, and Windows



1. Press the button on the side of the remote key near the bottom and pull the key out. Never pull the key out without pressing the button.



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




3. Remove the old battery. Do not use a metal object.
4. Insert the new battery on the back housing, positive side facing down. Replace with a CR2032 or equivalent battery.
5. Ensure that the silicone mat is correctly positioned with no gaps or wrinkles.
6. Set remote key button side down on a hard surface and press the other half straight down to force the halves together.


7. Reinsert the key.

### Remote Vehicle Start

This feature allows the engine to be started from outside of the vehicle.

 : This button is on the remote key for remote start.

The climate control system will determine the best mode and temperature setting for operation during the remote start. Once the vehicle is started with the ENGINE START/STOP button, the climate control system will begin to operate at the last customer selected operating mode and temperature. 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 auto heated or ventilated seats they may come on during a remote start. See *Heated and Ventilating Front Seats*  40.

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

Do not use remote start if the vehicle is low on fuel. The vehicle may run out of fuel.

Other conditions can affect the performance of the remote key. See *Remote Key* ⇨ 7.

### Starting the Engine Using Remote Start

1. Press and release  on the remote key.
2. Immediately press and hold  for at least four seconds or until the turn signal lamps flash. The turn signal lamps flashing confirms the request to remote start the vehicle has been received.

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

The engine will shut off after 15 minutes unless a time extension is done or the ignition is turned on.

3. With the remote key in the vehicle, press the brake pedal and start the vehicle to drive.

### Extending Engine Run Time

The engine run time can also be extended by another 15 minutes, if during the first 15 minutes Steps 1 and 2 are repeated while the engine is still running. An extension can be requested 30 seconds after starting. This provides a total of 30 minutes.

The remote start can only be extended once.


When the remote start is extended, the second 15-minute period is added on to the first 15 minutes for a total of 30 minutes.

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

The ignition must be turned on and then off before the remote start procedure can be used again.

### Canceling a Remote Start

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

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

### Conditions in Which Remote Start Will Not Work

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

- The remote key is in the vehicle.
- The vehicle is not off.
- The hood is not closed.
- The hazard warning flashers are on.

- There is an emission control system malfunction.
- The engine coolant temperature is too high.
- The oil pressure is low.
- Two remote vehicle starts or a 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. The doors can be unlocked and opened while the vehicle is moving. The chance of being thrown out of the vehicle in a crash is increased if the doors are not locked. So, all passengers should wear seat belts properly and the doors should be locked whenever the vehicle is driven.
- Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent injuries

(Continued)



## 14 Keys, Doors, and Windows

### Warning (Continued)



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.

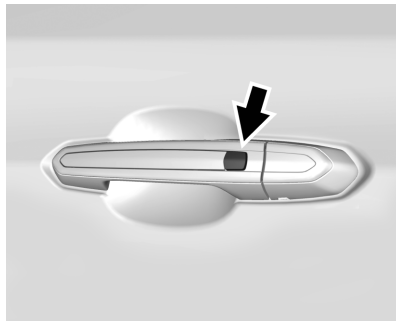
To lock/unlock the doors from outside the vehicle:

- Press  or  on the remote key. See *Remote Key Operation* ⇨ 7.
- Use the key in the key lock cylinder in the driver door. The key lock cylinder is covered with a cap.

To lock/unlock the doors from inside the vehicle:

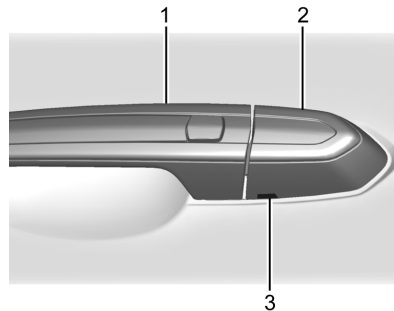
- Press  or  on the power door lock switch. See *Power Door Locks* ⇨ 15.
- Push down on the door lock knob to lock a door.
- Pull the door handle once to unlock it. Pull the door handle again to unlatch it.

### Keyless Access



The remote key must be within 1 m (3 ft) of the door or liftgate being opened. Press the button on the door handle to open. See “Keyless Access” in *Remote Key Operation* ⇨ 7.

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

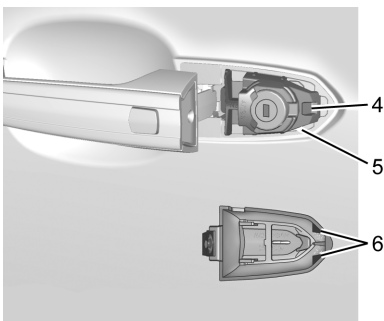


To access the driver door key lock cylinder:

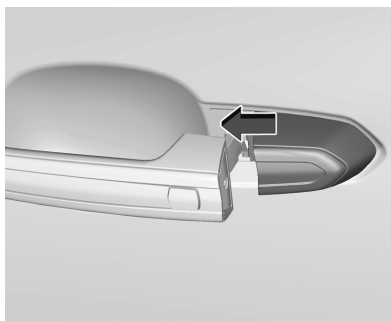
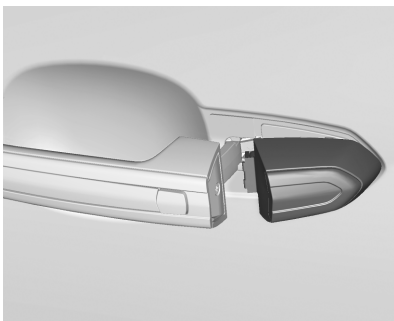
1. Pull the door handle (1) to the open position and hold it open until the cap removal is complete.
2. Insert the key into the slot (3) on the bottom of the cap (2) and lift the key upward.
3. Move the cap (2) rearward and remove.
4. Use the key in the cylinder.

To replace the cap:

1. Pull the door handle (1) to the open position and hold it open until the cap installation is complete.



2. Insert the two tabs (6) at the back of the cap between the seal (5) and the metal base (4).

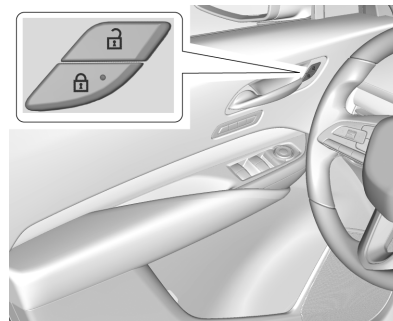



3. Slide the cap forward and press the forward edge to install the cap in place.
4. Release the door handle.
5. Check that the cap is secure.


#### Free-Turning Locks

The door key lock cylinder turns freely when either the wrong key is used, or the correct key is not fully inserted. The free-turning door lock feature prevents the lock cylinder from being forced open. To reset the lock cylinder, ensure the correct key is fully inserted into the lock cylinder. Rotate the key until you feel the lock cylinder click back into place. Remove the key and reinsert fully, rotate the key to unlock the vehicle.

#### Power Door Locks



 : Press to lock the doors. The indicator light in the switch will illuminate when locked.

 : Press to unlock the doors.


The fuel door is also locked or unlocked using these features.

#### Delayed Locking



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

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

## 16 Keys, Doors, and Windows

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 remote key to lock the doors immediately.


This feature can also be programmed. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Power Door Locks”.

### Automatic Door Locks

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

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

To unlock the doors:


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

Automatic door locking can be programmed. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Power Door Locks”.

### Lockout Protection

If the ignition is on or in accessory mode and the power door lock switch is pressed with the driver door open, all the doors will lock and only the driver door will unlock.

If the vehicle is off and locking is requested while a door is open, when all doors are closed the vehicle will check for remote key inside. If an remote key is detected and the number of remote keys inside has not reduced, the driver door will unlock and the horn will chirp three times.

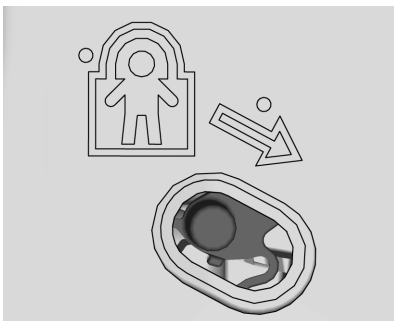
Lockout Protection can be manually overridden with the driver door open by pressing and holding  on the power door lock switch.

### Open Door Anti-Lockout

If Open Door Anti-Lockout is turned on and the vehicle is off, the driver door is open, and locking is requested, all the doors will lock and the driver door will remain unlocked. The Open Door Anti-Lockout feature can be turned on or off. To view available settings from the infotainment screen, touch Settings > Vehicle > Power Door Locks > Open Door Anti Lockout.

### Safety Locks

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



The safety lock is on the inside edge of the rear doors. To use the safety lock:

1. Move the lever down to the lock 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 pressing the power door unlock switch, or by using the remote key.
2. Open the door from the outside.

When the safety lock is enabled, adults and older children will not be able to open the rear door from the inside. Cancel the safety locks to enable the doors to open from the inside.

To cancel the safety lock:

1. Unlock the door and open it from the outside.
2. Move the lever up to unlock. Do the same for the other door.

## Doors

### Liftgate

#### Warning

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

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

(Continued)

## Keys, Doors, and Windows

17

### Warning (Continued)

- Close all of the windows.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to a setting that brings in only outside air and set the fan speed to the highest setting. See “Climate Control Systems” in the Index.
- If the vehicle is equipped with a power liftgate, disable the power liftgate function.

See *Engine Exhaust* ⇨ 187.



### Caution

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

## 18 Keys, Doors, and Windows

### Manual Liftgate



To open the liftgate, press  on the power door lock switch or press  on the remote key twice to unlock all doors. Press the touch pad on the underside of the liftgate handle and lift up.

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

For Keyless Access, the remote key must be within 1 m (3 ft) of the liftgate to automatically unlock it. See *Remote Key Operation* ⇨ 7.

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

Always close the liftgate before driving.

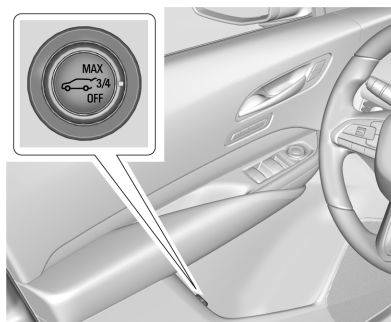
### Power Liftgate Operation

#### Warning

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

#### Caution

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



The power liftgate switch is on the driver door. The vehicle must be in P (Park).


The modes are:


**MAX** : Opens to maximum height.

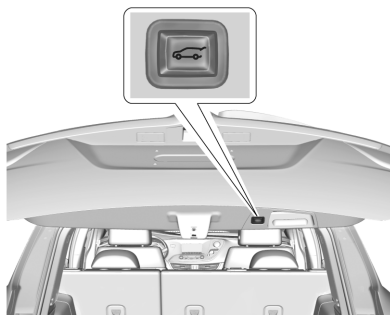
**3/4** : Opens to a reduced height that can be set from 3/4 to fully open. Use to prevent the liftgate from opening into overhead obstructions such as a garage door or roof-mounted cargo. The liftgate can be manually opened all the way.


**OFF** : Opens manually only.



To power open or close the liftgate, select MAX or 3/4 mode.

- Press  twice quickly on the remote key until the liftgate moves.

- Press  on the driver door. The driver door must either be unlocked or locked without the security armed.
- Press the touch pad on the underside of the liftgate handle after unlocking all doors. A locked vehicle can be opened if the remote key is within 1 m (3 ft) of the touch pad.



- Press  on the bottom of the liftgate next to the pull cup to close.

Press any liftgate button, or the touch pad, or  on the remote key while the liftgate is moving to stop it. Pressing any liftgate button again or pressing  twice quickly on the remote key restarts the operation in

the reverse direction. Pressing the touch pad on the liftgate handle will restart the motion, but only in the opening direction.

#### Caution

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

The power liftgate may be temporarily disabled under extreme low temperatures, or after repeated power cycling over a short period of time. If this occurs, the liftgate can still be operated manually.

If the vehicle is shifted out of P (Park) while the power function is in progress, the liftgate will continue to completion. If the vehicle is accelerated before the liftgate has completed moving, the liftgate may stop or reverse direction. Check for Driver Information Center (DIC) messages and make sure the liftgate is closed and latched before driving.

#### Falling Liftgate Detection

If the power liftgate automatically closes after a power opening cycle, it indicates that the system is reacting to excess weight on the liftgate or a possible support strut

failure. A repetitive chime will sound while the falling liftgate detection feature is operating. Remove any excess weight. If the liftgate continues to automatically close after opening, see your dealer for service before using the power liftgate.

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

#### Obstacle Detection Features


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

## 20 Keys, Doors, and Windows

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

### Setting the 3/4 Mode

To change the position the liftgate stops at when opening:

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

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

### Manual Operation

Select OFF to manually operate the liftgate. See “Manual Liftgate” at the beginning of this section.

#### Caution

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

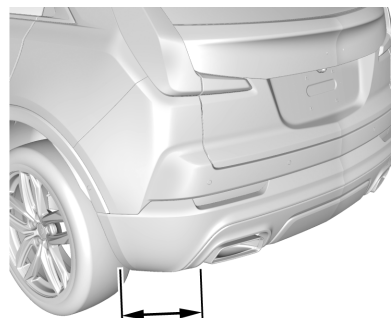
Operate the liftgate manually with a smooth motion and moderate speed. The system includes a feature which limits the manual closing speed to protect the components.

### Hands-Free Operation

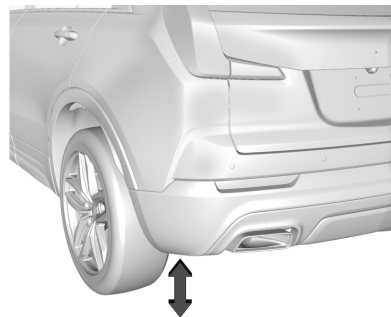
If equipped, the liftgate may be operated with a kicking motion under the left corner of the rear bumper at the location of the projected logo.

The remote key must be within 1 m (3 ft) of the rear bumper to operate the power liftgate hands-free.

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



Length of Kick Zone



Kick Zone Direction

To operate, kick your foot straight up in one swift motion under the left corner of the rear bumper at the location of the projected logo, then pull it back.

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

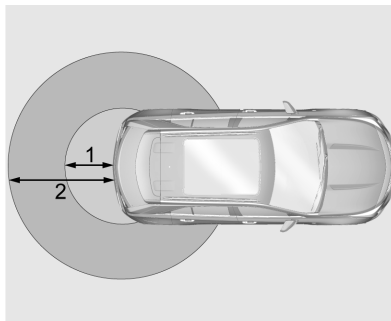
When closing the liftgate using this feature, there will be a short delay. The taillamps will flash and a chime will sound. Step away from the liftgate before it starts moving.

### Caution

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

### Projected Logo

If equipped with this feature, a vehicle logo will be projected for one minute onto the ground near the rear bumper when an remote key is detected within approximately 2 m (6 ft). The projected logo may not be visible under brighter daytime conditions.



1. 1 m (3 ft) Hands-Free Operation Detection Zone
2. 2 m (6 ft) Projected Logo Detection Zone

The projected logo shows where the kicking motion is to take place.

The projected logo will only be available for this remote key after it has been out of range for at least 20 seconds.

If an remote key is again detected within approximately 2 m (6 ft) of the liftgate, or another hands-free operation has been detected, the one-minute timer will be reset.

The projected logo will not work under these conditions:

- The vehicle battery is low.
- The transmission is not in P (Park).
- Hands Free Liftgate Control is set to Off in vehicle settings. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select "Vehicle" to display the list of available options and select "Comfort and Convenience".
- The power liftgate is turned off.
- The vehicle remains parked for 72 hours or more, with no remote key use or Keyless Access operation. To re-enable, press any button on the remote key or open and close a vehicle door.

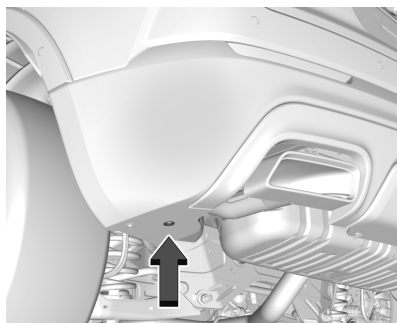
The projected logo will not work for a single remote key when a remote key:

- Has been left within approximately 5 m (15 ft) of the liftgate for several minutes.

## 22 Keys, Doors, and Windows

- Has been left inside the vehicle and all vehicle doors are closed.
- Has approached the area outside of the liftgate five times within 10 minutes.

### Lens Cleaning



Use a soft, damp cloth to clean the recessed lens.

### Hands-Free Liftgate and Projected Logo Availability

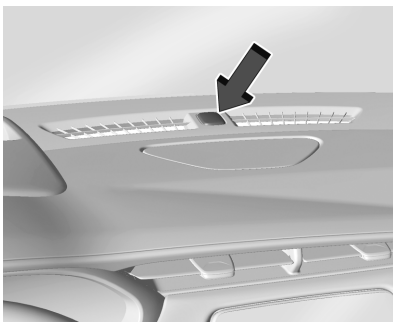
Action	Hands-Free Liftgate	Projected Logo
Remote key entering projected logo detection zone	Operative	On for one minute
Remote key left inside projected logo detection zone for minimum of 10 minutes	Operative	Off until remote key button press or a door is opened and closed
Remote key brought in and out of projected logo detection zone five times or more within 10 minutes	Operative	Off for one hour or until remote key button press or a door is opened and closed
Vehicle remains parked for more than 72 hours	Operative	Off until remote key button press or a door is opened and closed
Vehicle battery is low	Non-operative	Off
Transmission is not in P (Park)	Non-operative	Off
Power liftgate is turned off	Non-operative	Off
Hands-free liftgate is disabled in vehicle settings	Non-operative	Off

## Vehicle Security

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

### Vehicle Alarm System

This vehicle has an anti-theft alarm system.



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



**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 hood, or the liftgate is open.


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

### Arming the Alarm System

1. Close the liftgate and the hood. Turn off the vehicle.
2. Lock the vehicle in one of three ways:
  - Use the remote key.
  - Use the Keyless Access system.
  - With a door open, press the inside .
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 remote key a second time will bypass the 30-second delay and immediately arm the alarm system.

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


If the driver door is opened without first unlocking with the remote key, 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 remote key during the 10-second pre-alarm, the alarm will be activated.

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

### Disarming the Alarm System

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

- Press  on the remote key.
- Unlock the vehicle using the Keyless Access system.
- Start the vehicle.


To avoid setting off the alarm by accident:

- Lock the vehicle after all occupants have left the vehicle and all doors are closed.
- Always unlock a door with the remote key or use the Keyless Access system.

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

## 24 Keys, Doors, and Windows

### How to Detect a Tamper Condition

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

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

### Power Sounder, Inclination Sensor, and Intrusion Sensor

If equipped, in addition to the standard theft-deterrent system features, this system may also have an inclination sensor, an intrusion sensor, and power sounder.

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

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


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

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

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

### Inclination and Intrusion Sensors Disable Switch

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

With the vehicle turned off, press  in the overhead console. The indicator light will come on momentarily, indicating that the sensor has been disabled until the next time the alarm system is armed.

### Immobilizer Operation

This vehicle has a passive theft-deterrent system.

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

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

The immobilization system is disarmed when the ignition is on or in accessory mode and a valid remote key is present in the vehicle.



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

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

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

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

If the vehicle will not change ignition modes (accessory mode, on, off), and the remote key appears to be undamaged, try another remote key. Or, you may try placing the remote key in the front cupholder located in the center console. See *Remote Key Operation* ⇨ 7.

If the ignition mode will not change with the other remote key or in the front cupholder, your vehicle needs service. If the ignition does change modes, the first remote key may be faulty. See your dealer who can service the theft-deterrent system and have a new remote key programmed to the vehicle.

It is possible for the immobilizer system to learn new or replacement remote keys. Up to eight remote keys can be programmed for the vehicle. To program additional remote keys, see “Programming Remote Keys to the Vehicle” under *Remote Key Operation* ⇨ 7.

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

## Exterior Mirrors

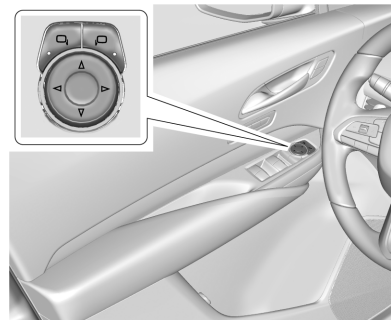
### Convex Mirrors

#### 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 surface is curved so more can be seen from the driver seat.

## Power Mirrors



To adjust each mirror:

1. Press  or  to choose the driver or passenger side mirror. The indicator light will illuminate.
2. Press the arrows on the control pad to move the mirror in the desired direction.
3. Adjust each outside mirror so that a little of the vehicle and the area behind it can be seen.
4. Press  or  again to deselect the mirror.

## 26 Keys, Doors, and Windows

### Memory Mirrors

The vehicle may have memory mirrors. See *Memory Seats* ⇨ 38.

### Lane Change Alert (LCA)

The vehicle may have LCA. See *Lane Change Alert (LCA)* ⇨ 224.

### Side Blind Zone Alert (SBZA)

The vehicle may have Side Blind Zone Alert. See *Side Blind Zone Alert (SBZA)* ⇨ 223.

### Turn Signal Indicator

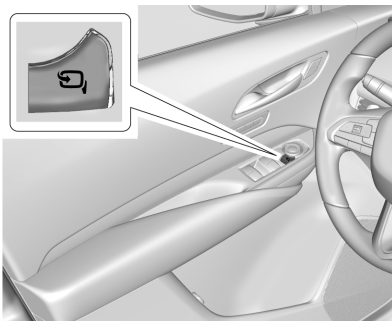
The vehicle may have a turn signal indicator on the mirror housings. See *Turn and Lane-Change Signals* ⇨ 119.

## Folding Mirrors

### Manual Folding Mirrors

If equipped, manually fold the mirrors inward toward the vehicle to prevent damage when going through an automatic car wash. Push the mirror outward to return it to the original position.

### Power Folding Mirrors



If equipped, press to power fold the mirrors. Press again to unfold.



### Resetting the Power Folding Mirrors

Reset the power folding mirrors if:

- The mirrors are accidentally obstructed while folding.
- They are accidentally manually folded/unfolded.
- The mirrors do not stay in the unfolded position.
- The mirrors vibrate at normal driving speeds.


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

### Remote Mirror Folding

If equipped, press and hold  on the remote key for approximately one second to automatically fold the exterior mirrors. Press and hold  on the remote key for approximately one second to unfold. See *Remote Key Operation* ⇨ 7.

This feature is turned on or off through vehicle settings. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Comfort and Convenience”.

### Heated Mirrors

 : Press to heat the mirrors.

See “Rear Window Defogger” under *Dual Automatic Climate Control System* ⇨ 164.

## Automatic Dimming Mirror

If the vehicle has the automatic dimming mirror, the driver outside mirror automatically adjusts for the glare of headlamps behind you.

## Reverse Tilt Mirrors

If equipped with reverse tilt mirrors and 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) may move from their tilted position when:

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

To view available settings from the infotainment screen, touch Settings > Vehicle > Comfort and Convenience.

## Interior Mirrors

### Interior Rearview Mirrors

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

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

### Manual Rearview Mirror

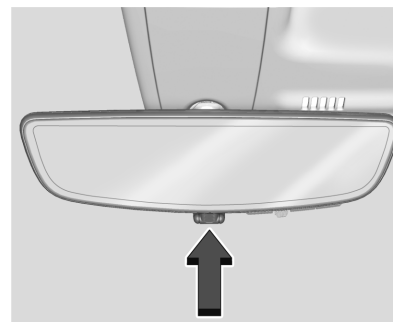
If equipped, push the tab forward for daytime use and pull it rearward for nighttime use to avoid glare of the headlamps from behind.

### 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.

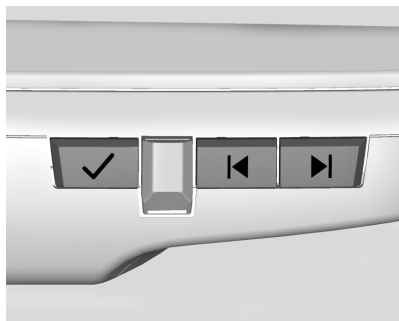
### Rear Camera Mirror

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



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

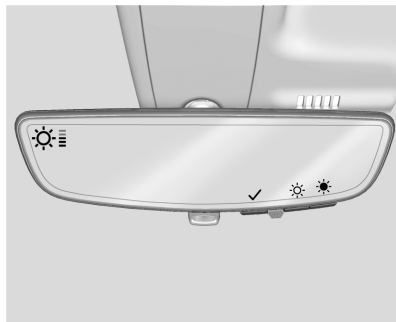
## 28 Keys, Doors, and Windows



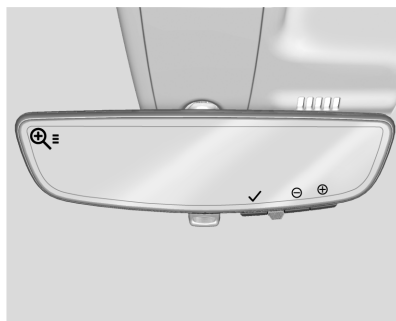
Press ✓ to scroll through the adjustment options.

Press ◀ and ▶ to adjust the settings using the indicators on the mirror. The indicators will remain visible for five seconds after the last button activation, and the settings will remain saved.

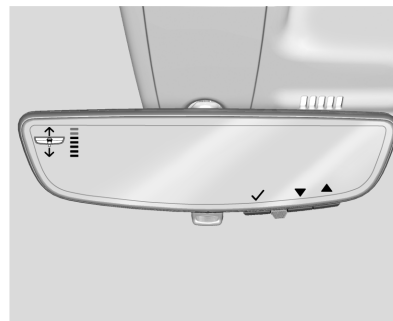
The adjustment options are:



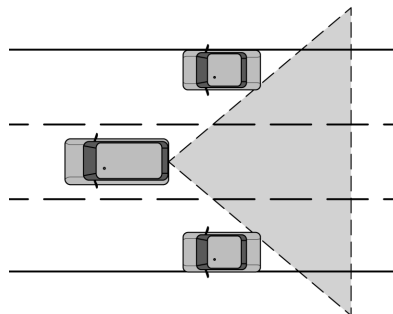
- Brightness



- Zoom



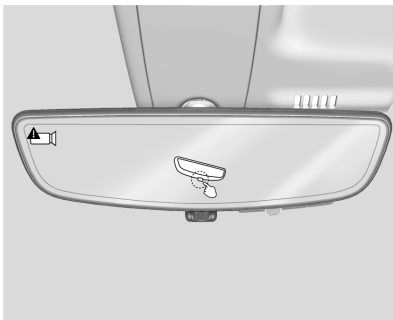
- Tilt




### Warning

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

### Troubleshooting



See your dealer for service if a blue screen and  are displayed in the mirror, and the display shuts off. Also, push the tab as indicated to return to the automatic dimming mode.

The Rear Camera Mirror may not work properly or display a clear image if:

- There is glare from the sun or headlamps. This may obstruct objects from view. If needed, push the tab to turn off the display.
- Dirt, snow, or other debris blocks the camera lens. Clean the lens with a soft damp cloth, or if equipped, with the Rear Camera Washer. See *Rear Window Wiper/Washer* ⇨ 88.



## Keys, Doors, and Windows 29

- The camera's mounting on the vehicle has been damaged, and/or the position or the mounting angle of the camera has changed.

### 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.



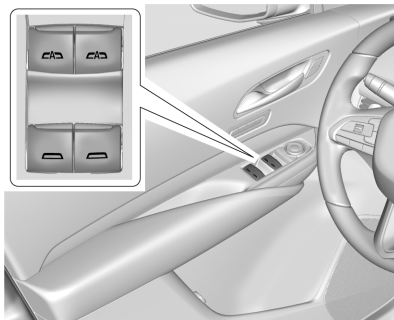
## 30 Keys, Doors, and Windows

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

### Power Windows

#### **Warning**

Children could be seriously injured or killed if caught in the path of a closing window. Never leave the remote key in a vehicle with children. When there are children in the rear seat, use the window lockout switch to prevent operation of the windows. See *Keys* ⇨ 6.

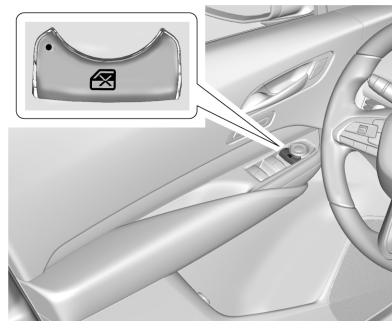


The power windows work when the ignition is on, in accessory mode, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* ⇨ 185.



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

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

### Window Lockout



This feature stops the rear passenger window switches from working.

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

### Window Express Movement

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

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

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

### Window Automatic Reversal System

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

### Automatic Reversal System Override

#### Warning

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


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


### Programming the Power Windows

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

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

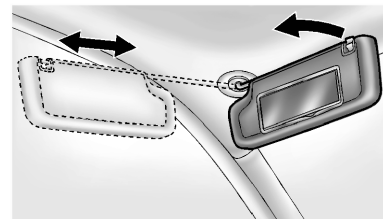
### Remote Window Operation

If enabled through vehicle settings, this feature allows all side windows to be opened remotely. To open, double press and hold  on the remote key.

If equipped, all windows can also be closed using the remote key. To close, double press and hold  on the remote key.

To view available settings from the infotainment screen, touch Settings > Vehicle > Remote Lock, Unlock, Start.

### Sun Visors



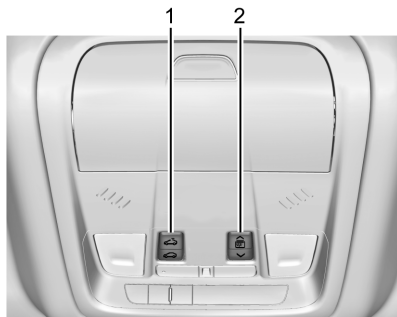
Pull the sun visor down to block glare. Detach the sun visor from the center mount to pivot to the side window and, if equipped, extend along the rod.

## Roof





### Sunroof


If equipped, the ignition must be on or in accessory mode, or Retained Accessory Power (RAP) must be active to operate the sunroof. See *Ignition Positions* ⇨ 183 and *Retained Accessory Power (RAP)* ⇨ 185.



## 32 Keys, Doors, and Windows










1. Sunroof Switch
2. Sunshade Switch

**Sunroof Express Operation :** Press and release  (1) to vent. Press and release again to move to the partially opened comfort stop position. Press and release again to express-open to the fully opened position. Press and release  (1) at any time to stop movement. Press and release  (1) to express-close. Press and release  (1) at any time to stop movement.

**Sunroof Manual Operation :** The sunroof can change to manual mode by holding  (1) while opening. The sunroof will now open as

long as  (1) is held. Press and release  (1) again to change back to express operation.

**Power Sunshade Express Operation :** Press and release  (2) to express-open the sunshade. Press and release  (2) at any time to stop movement. Press and release  (2) to express-close the sunshade. Press and release  (2) at any time to stop movement.

**Power Sunshade Manual Operation :** The sunshade can change to manual mode by holding  (2) while opening. The sunshade will now open as long as  (2) is held. Press and release  (2) again to change back to express operation.

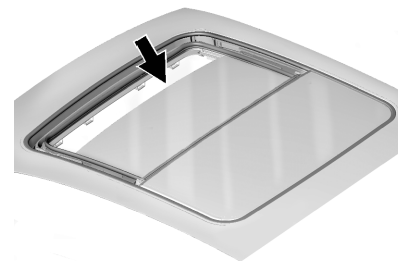
The sunroof cannot be opened or closed if the vehicle has an electrical failure.

### Automatic Reversal System

The sunroof and power sunshade have an automatic reversal system that is only active when the sunroof and power sunshade, if equipped, are operated in express-close mode.

If an object is in the path while express-closing, the reversal system will detect an object, stop, and open the sunroof or power sunshade slightly.

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



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

## Seats and Restraints

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## Head Restraints

### Front Seats

#### 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.

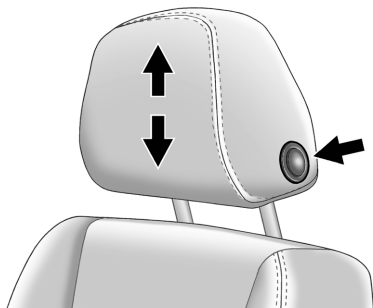
The vehicle's front seats have adjustable head restraints in the outboard seating positions.



## 34 Seats and Restraints

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

The height of the head restraint can be adjusted.



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

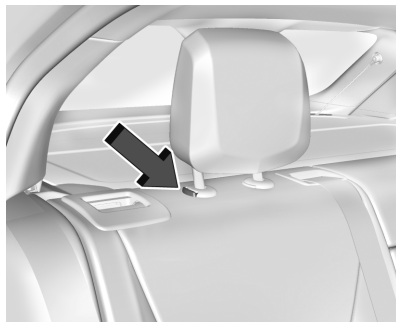
The front seat outboard head restraints are not removable.

### Rear Seats

#### Adjusting the Rear Head Restraint

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

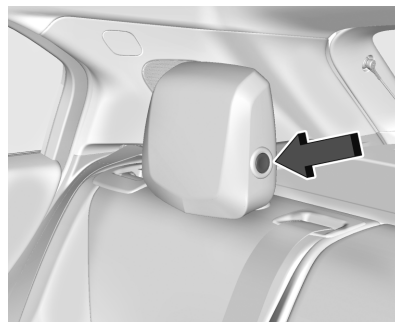
The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure that it is locked in place.



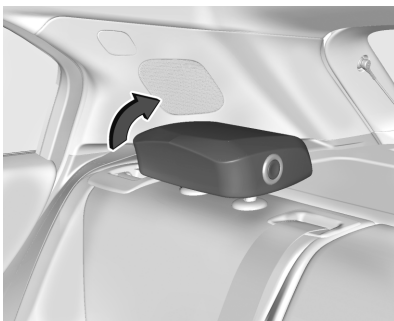
To lower the head restraint, press the button, located on the top of the seatback, and push the head restraint down. Try to move the head restraint after the button is released to make sure that it is locked in place.

#### Folding the Rear Head Restraint

The head restraint can be folded rearward to allow for better visibility when the rear seat is unoccupied.



To fold the head restraint, press the button on the side of the head restraint.



The head restraint will fold rearward automatically.

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

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

If you are installing a child restraint in the rear seat, see "Securing a Child Restraint Designed for the LATCH System" under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65.

## Front Seats

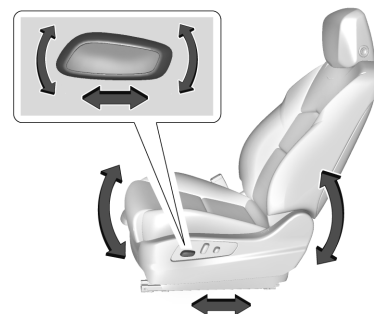
### Power Seat Adjustment

#### Warning

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

#### Warning

The power seats will work with the ignition off. Children could operate the power seats and be injured. Never leave children alone in the vehicle.



To adjust a power seat, if equipped:

- 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.

## 36 Seats and Restraints

### Reclining Seatbacks

#### Warning

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

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

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

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



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

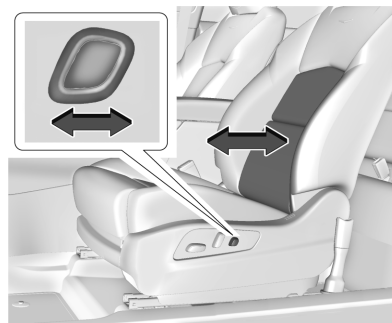


To adjust a seatback:

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

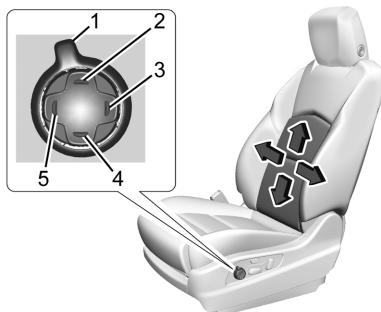
### Lumbar Adjustment

#### Lumbar and Bolster Support



#### Base Seat Adjustment

If equipped, slide the control forward or rearward to increase or decrease support.

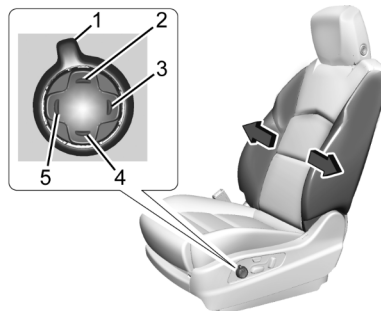


#### Uplevel Seat Adjustment

To adjust lumbar support, if equipped:

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

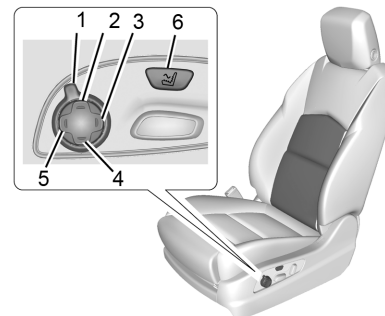
To adjust bolster support, if equipped:



#### Uplevel Seat Adjustment

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

#### Massage



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

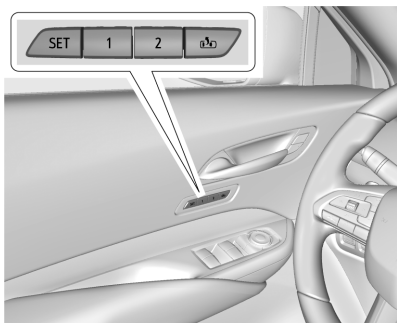
To activate and adjust massage:

1. Turn the feature select (1) to scroll to massage options on the infotainment display.
2. Press up (2) or down (4) adjust the massage type.
3. Press forward (5) or rearward (3) to adjust the intensity.
4. To turn massage off or to activate massage at last massage type and intensity settings, press massage on/off control (6).

## 38 Seats and Restraints

The massage feature will turn off after approximately 20 minutes. Press the massage on/off control (6) to restart the massage feature.

### Memory Seats



#### Overview

If equipped, the memory seat feature allows drivers to save their unique driving positions and a shared exit position. See “Saving Seating Positions” later in this section. The saved positions can be recalled manually by all drivers, see “Manually Recalling Seating Positions” later in this section, and drivers with remote key 1 and 2 can also recall them automatically. See “Auto Seat Entry Memory Recall” or “Auto Seat Exit Memory

Recall” later in this section. To enable automatic recalls, turn on Seat Entry Memory and/or Seat Exit Memory. See “Enabling Automatic Recalls” later in this section. The memory recalls may be canceled at any time during the recall. See “Cancel Memory Seating Recalls” later in this section.

#### Identifying Driver Number

The vehicle identifies the current driver by their remote key number 1–8. The current remote key number may be identified by Driver Information Center (DIC) welcome message, “You are driver x for memory recalls.” This message is displayed the first few times the vehicle is turned on when a different remote key is used. For Seat Entry Memory to work properly, save positions to the 1 or 2 memory button matching the driver number of this welcome message. To aid in identifying remote key IDs, it is recommended to only carry one remote key when entering the vehicle. Perform the following if the welcome message is not displayed:

1. Move all keys and remote keys away from the vehicle.

2. Start the vehicle with another remote key. A DIC welcome message should display indicating the driver number of the other remote key. Turn the vehicle off and remove the other key or remote key from the vehicle.
3. Start the vehicle with the initial key or remote key. The DIC welcome message should display the driver number of the initial remote key.

#### Saving Seating Positions

Read these instructions completely before saving memory positions.



To save preferred driving positions to 1 and 2:

1. Turn the vehicle on or to accessory mode. A DIC welcome message may indicate the driver number of the current remote key. See “Identifying Driver Number” previously in this section.
2. Adjust all available memory features to the desired driving position.
3. Press and release SET; a beep will sound.
4. Immediately upon releasing SET, press and hold memory button 1 or 2 matching the current Driver’s remote key number until two beeps sound. If too much time passes between releasing SET and


pressing 1 or 2, the two beeps will not sound indicating memory position were not saved. Repeat Steps 3 and 4 to try again.


5. Repeat Steps 1–4 for the other remote key 1 or 2 using the other 1 or 2 memory button.

It is recommended to save the preferred driving positions to both 1 and 2 if you are the only driver.


To save the common exit seating position to  that is used by all drivers for Manually Recalling Seating Positions and Auto Seat Exit Memory Recall features, repeat Steps 1–4 using , the exit button.

### Manually Recalling Seating Positions

Press and hold 1, 2, or  button until the recall is complete, to recall the positions previously saved to that button.

Manual Memory recall movement for 1, 2 or  buttons may be initiated and will complete to the saved memory position if the vehicle is in or out of P (Park).

### Enabling Automatic Recalls

- Seat Entry Memory moves the driver seat to the selected 1 or 2 position when the vehicle is started. Select Settings > Vehicle > Seating Position > Seat Entry Memory > ON or OFF. See “Auto Seat Entry Memory Recall” later in this section.
- Seat Exit Memory moves the driver seat to the preferred exit position of the  button when the vehicle is turned off and the door is opened. Select Settings > Vehicle > Seating Position > Seat Exit Memory > ON or OFF. See “Auto Seat Exit Memory Recall” later in this section.

### Auto Seat Entry Memory Recall

Seat Entry Memory will automatically begin movement to the seating positions of the 1 or 2 button corresponding to the driver's remote key number 1 or 2 detected by the vehicle when:

- The vehicle is turned ON.
- Seating positions have been previously saved to the same 1 or 2 button. See “Saving Seating Positions” previously in this section.
- Seat Entry Memory is enabled. See “Enabling Automatic Recalls” previously in this section.

- The vehicle is in P (Park).


Seat Entry Memory Recall will continue if the vehicle is shifted out of P (Park) prior to reaching the saved memory position.

If the saved memory seat position does not automatically recall, verify the recall is enabled. See “Enabling Automatic Recalls” previously in this section.

If the memory seat recalls to the wrong position, the driver's remote key number 1 or 2 may not match the memory button number positions they were saved to. Try the other remote key or try saving the positions to the other 1 or 2 memory button. See “Saving Seating Positions” previously in this section.


Automatic Seat Entry Memory recalls are only available for driver's remote key numbers 1 and 2. Remote keys 3–8 will not provide Seat Entry Memory recalls.

### Auto Seat Exit Memory Recall


Seat Exit Memory will begin movement to the seating position of the  button when:

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




## 40 Seats and Restraints

- A seating position has been previously been saved to the  memory button. See “Saving Seating Positions” previously in this section.
- Seat Exit Memory is enabled. See “Enabling Automatic Recalls” previously in this section.
- The vehicle is in P (Park).

Seat Exit Memory recall will continue if the vehicle is shifted out of P (Park) prior to reaching the saved memory position.

Seat Exit Memory is not linked to the driver's remote key. The seating position saved to  is used for all drivers.

### Cancel Memory Seating Recalls

- During any memory recall:  
Press a power seat control  
Press SET memory button
- During Manual memory recall:  
Release 1, 2, or  memory button
- During Auto Seat Entry Memory Recall:  
Turn vehicle off  
Press SET, 1, 2, or  memory buttons
- During Auto Seat Exit Memory Recall:  
Press SET, 1, 2, or  memory buttons

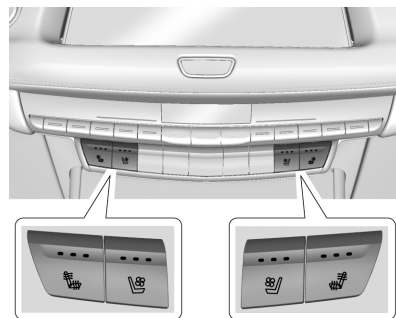
### Obstructions

If something has blocked the seat while recalling a memory position, the recall may stop. Remove the obstruction and try the recall again. If the memory position still does not recall, see your dealer.

### Heated and Ventilated Front Seats



#### Warning



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



#### Uplevel Buttons Shown, Base Buttons Similar

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

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

Press  or  to ventilate the driver or passenger seat.

Press the button once for the highest setting. With each press of the button, the seat will change to the next lower setting, and then to the off setting. The indicator lights above the buttons indicate three for the highest setting and one for the lowest.

If the front heated seats are on high, the level may automatically be lowered after approximately 30 minutes.

A ventilated seat has a fan that pulls or pushes air through the seat. The air is not cooled.

The passenger seat may take longer to heat up.

### **Auto Heated and Ventilated Seats**

If the vehicle is equipped with auto heated or ventilated seats, and the engine is running, this feature will automatically activate the heated or ventilated seats at the level required by the vehicle's interior temperature.

The active high, medium, low, or off heated or ventilated seat level will be indicated by the manual heated and ventilated seat buttons on the center stack. Use the manual heated and ventilated seat buttons on the center stack to turn auto heated or ventilated seats off. If the passenger seat is unoccupied, the auto heated or ventilated seats feature will not activate that seat. To enable or disable auto heated or ventilated seats, select Settings > Vehicle > Climate and Air Quality > Auto Cooled or Auto Heated Seats > ON or OFF. If equipped with

a heated steering wheel, the auto heated steering wheel activation will follow the heated seat auto activation and the heated wheel indicator will follow the state of the steering wheel heat.

### **Remote Start Heated and Ventilated Seats**

If equipped, the heated seats will turn on automatically during a remote start if it is cold outside and the ventilated seats will turn on automatically if it is hot outside. If equipped, the heated steering wheel will turn on automatically during a remote start if it is cold outside. The heated and ventilated seat indicators and heated steering wheel indicator may come on during this operation.

The heated and ventilated seats and heated steering wheel may cancel when the vehicle is started. These features can be manually selected after the ignition is turned on and engine is running.

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

To enable or disable remote start heated or ventilated seats, select Settings > Vehicle > Remote Lock, Unlock, and Start > Remote

Start Auto Heat Seats or Remote Start Auto Cool Seats > ON or OFF. See *Remote Vehicle Start* ⇨ 12.

## **Rear Seats**

### **Rear Seat Reminder**

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

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

The feature is active only once each time the vehicle is turned on and off, and will require reactivation by opening and closing the second row doors. There may be an alert even when there is nothing in the rear

## 42 Seats and Restraints

seat; for example, if a child entered the vehicle through the rear door and left the vehicle without the vehicle being shut off.

The feature can be turned on or off. Select Settings > Vehicle > Rear Seat Reminder > ON or OFF.

### Manually Folding the Seatbacks

#### Caution

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

1. Place the front seatbacks in the upright position. See *Reclining Seatbacks* ⇨ 36.
2. Lower the rear head restraint. See *Head Restraints* ⇨ 33.



3. Pull on the lever on the top of the seatback to unlock it and fold the seatback forward.

For outboard seatbacks, a tab near the seatback lever moves forward when the seatback is unlocked.

### Raising the 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.

#### Warning

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

To raise the seatback:

1. Push the seatback rearward until it locks in the upright position.

For outboard seats, a tab near the seatback lever retracts when the seatback is locked in place.

2. Make sure the rear seat belts are in the belt guide and are not twisted or caught between the seat cushion and the seatback.



## Heated Rear Seats

### Warning

If temperature change or pain to the skin cannot be felt, the seat heater may cause burns. See the Warning under *Heated and Ventilated Front Seats* ⇨ 40.



If equipped, the rear heated seat buttons are on the rear of the center console.

With the engine running, press  or  to heat the left outboard or right outboard seat. Press the button once for the highest setting. With each press of the button, the seat will change to the next lower setting,

and then to the off setting. The indicator lights on the buttons indicate three for the highest setting and one for the lowest.

If the heated rear seats are on the highest setting, the level may automatically be lowered after approximately 30 minutes.

## Seat Belts

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

### Warning

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

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

(Continued)

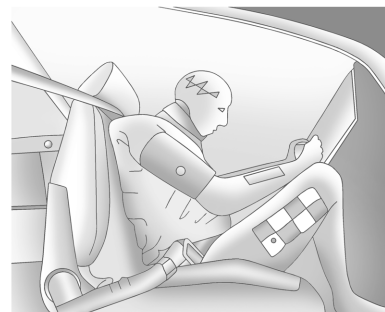
### Warning (Continued)

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

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

This vehicle has indicators as a reminder to buckle the seat belts. See *Seat Belt Reminders* ⇨ 97.

### Why Seat Belts Work



## 44 Seats and Restraints

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

When you wear a seat belt, you and the vehicle slow down together. There is more time to stop because you stop over a longer distance and, when worn properly, your strongest bones take the forces from the seat belts. That is why wearing seat belts makes such good sense.

### Questions and Answers About Seat Belts

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

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

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

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

Also, in nearly all regions, the law requires wearing seat belts.

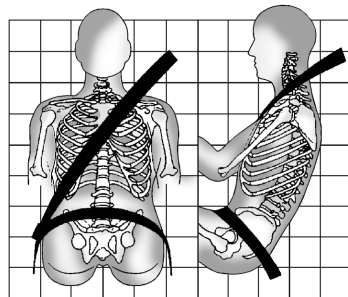
### How to Wear Seat Belts Properly

Follow these rules for everyone's protection.

There are additional things to know about seat belts and children, including smaller children and infants. If a child will be riding in the vehicle, see *Older Children* ⇨ 59 or *Infants and Young Children* ⇨ 61. Review and follow the rules for children in addition to the following rules.

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

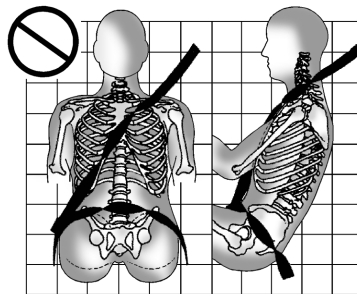
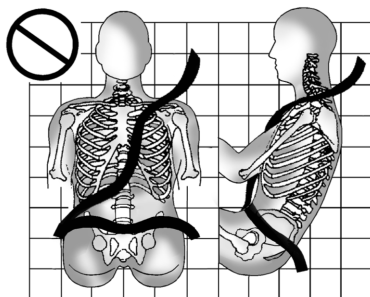
There are important things to know about wearing a seat belt properly.



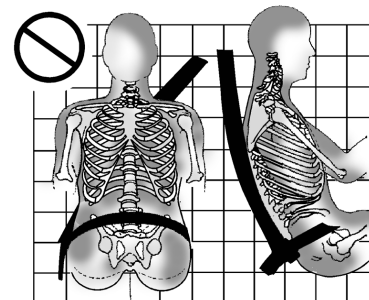
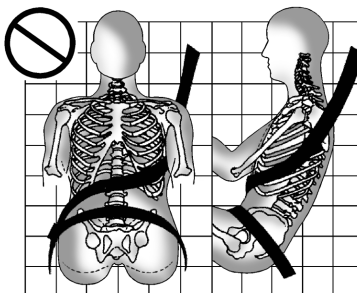
- Sit up straight and always keep your feet on the floor in front of you (if possible).
- Wear the lap part of the belt low and snug on the hips, just touching the thighs. In a crash, this applies force to the strong pelvic bones and you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force on your abdomen. This could cause serious or even fatal injuries.
- Wear the shoulder belt over the shoulder and across the chest. These parts of the body are best able to take belt restraining forces. The shoulder belt locks if there is a sudden stop or crash.

 **Warning**

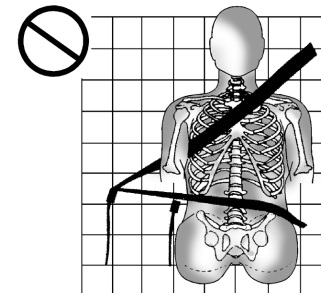
You can be seriously injured, or even killed, by not wearing your seat belt properly.



Never allow the lap or shoulder belt to become loose or twisted.

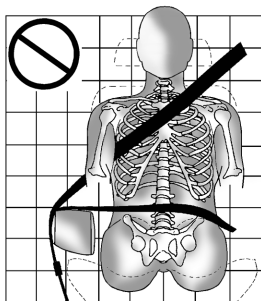


Never wear the shoulder belt under both arms or behind your back.



Always use the correct buckle for your seating position.

## 46 Seats and Restraints



Never route the lap or shoulder belt over an armrest.

### Warning

The seat belt can be pinched if it is routed under plastic trim on the seat, such as trim around the rear seatback folding handle or side airbag. In a crash, pinched seat belts might not provide adequate protection. Never allow seat belts to be routed under plastic trim pieces.

### Warning

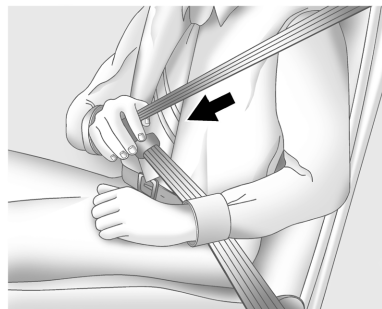
You can be seriously injured or killed if the shoulder belt is worn behind your back, under your legs, or wrapped around your neck. The shoulder belt can tighten but cannot be loosened if it is locked. The shoulder belt locks when it is pulled all the way out of the retractor. It unlocks when the shoulder belt is allowed to go all the way back into the retractor, but it cannot do this if it is wrapped around you. You may have to cut the seat belt if it is locked and tightened around you.

### 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.

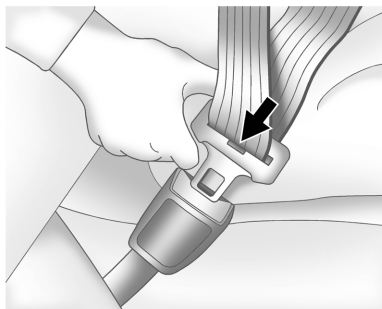


2. Pick up the latch plate and pull the belt across you. Do not let it get twisted.

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. See *Child Restraint Systems* ⇨ 63. If this occurs, let the belt go back all the way and start again. If the locking feature stays engaged after letting the belt go back to stowed

position on the seat, move the seat rearward or recline the seat until the shoulder belt retractor lock releases. Engaging the child restraint locking feature in the front outboard seating position may affect the passenger sensing system. See *Passenger Sensing System* ⇨ 55.

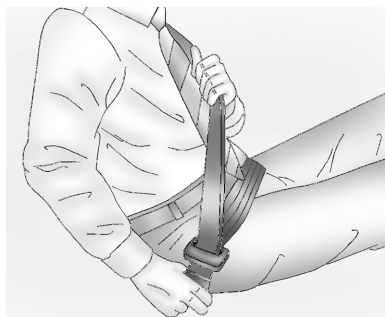


3. Push the latch plate into the buckle until it clicks.

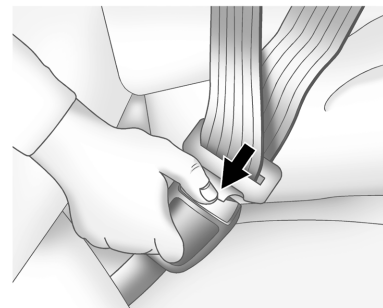
Pull up on the latch plate to make sure it is secure.

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

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



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



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

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

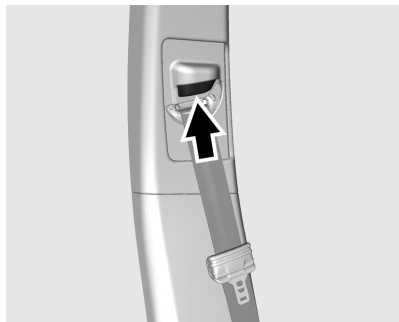
Before a door is closed, be sure the seat belt is out of the way. If a door is slammed against a seat belt, damage can occur to both the seat belt and the vehicle.

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### Shoulder Belt Height Adjuster

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

Adjust the height so that the shoulder portion of the belt is on the shoulder and not falling off of it. The belt should be close to, but not contacting, the neck. Improper shoulder belt height adjustment could reduce the effectiveness of the seat belt in a crash. See *How to Wear Seat Belts Properly* ⇨ 44.



Press and hold the release button while raising or lowering the height adjuster to the desired position.

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

### Seat Belt Pretensioners

This vehicle has seat belt pretensioners for the front outboard occupants. Although the seat belt pretensioners cannot be seen, they are part of the seat belt assembly. They can help tighten the seat belts during the early stages of a moderate to severe frontal, near frontal, or rear crash if the threshold conditions for pretensioner activation are met. Seat belt pretensioners can also help tighten the seat belts in a side crash or a rollover event.

Pretensioners work only once. If the pretensioners activate in a crash, the pretensioners and probably other parts of the vehicle's seat belt system will need to be replaced. See *Replacing Seat Belt System Parts after a Crash* ⇨ 49.

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

### Seat Belt Use During Pregnancy

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



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

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

## Safety System Check

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

Make sure the seat belt reminder light is working. See *Seat Belt Reminders* ⇨ 97.

Keep seat belts clean and dry. See *Seat Belt Care* ⇨ 49.

## Seat Belt Care

Keep belts clean and dry.

Seat belts should be properly cared for and maintained.

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

### Warning

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

## Replacing Seat Belt System Parts after a Crash

### Warning

A crash can damage the seat belt system in the vehicle. A damaged seat belt system may not properly protect the person using it, resulting in serious injury  
(Continued)

### Warning (Continued)

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

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

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

Have the seat belt pretensioners checked if the vehicle has been in a crash, or if the airbag readiness light stays on after you start the vehicle or while you are driving. See *Airbag Readiness Light* ⇨ 97.

## Airbag System

The vehicle has the following airbags:

- A frontal airbag for the driver
- A frontal airbag for the front outboard passenger

## 50 Seats and Restraints

- A knee airbag for the driver.
- A knee 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

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 or side of the seat closest to the door.

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

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

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

### Warning

You can be severely injured or killed in a crash if you are not wearing your seat belt, even with airbags. Airbags are designed to work with seat belts, not replace them. Also, airbags are not designed to inflate in every crash. In some crashes seat belts are the only restraint. See *When Should an Airbag Inflate?* ⇨ 52.

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

### Warning (Continued)

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

### Warning

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

(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

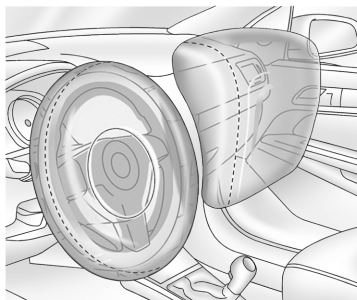
Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Always secure children properly in the vehicle. To read how, see *Older Children* ⇨ 59 or *Infants and Young Children* ⇨ 61.



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

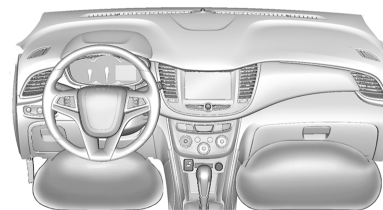
The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light* ⇨ 97.

### Where Are the Airbags?



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

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



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



Driver Side Shown, Passenger Side Similar

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



**Driver Side Shown, Passenger Side Similar**

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

### **Warning**

If something is between an occupant and an airbag, the airbag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating airbag

(Continued)

### **Warning (Continued)**

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* ⇨ 49. 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 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 are designed to inflate in moderate to severe 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. These airbags may also inflate in some moderate to severe frontal impacts. Seat-mounted side impact airbags are not designed to inflate in 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 may 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 may inflate when either side of the vehicle is struck or if the sensing system predicts that the vehicle is about to roll over on its side, or in a severe frontal impact.

In any particular crash, no one can say whether an airbag should have inflated simply because of the vehicle damage or 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?* ⇨ 51.

### How Does an Airbag Restrain?

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

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

Rollover capable roof-rail airbags are designed to help contain the head and chest of occupants in the outboard seating positions in the first 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?* ⇨ 52.

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

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

After frontal, knee, and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize the airbags 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?* ⇨ 51.

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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. After turning the ignition off and then on again, the fuel system will return to normal operation; the doors can be locked, the interior lamps can be turned off, and the hazard warning flashers can be turned off using the controls for those features. If any of these systems are damaged in the crash they may not operate as normal.

### Warning

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

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

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

- Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for the airbag system. If you do not get them, the airbag system will not be there to help protect you in another crash. A new system will include airbag modules and possibly other parts. The service manual for the vehicle covers the need to replace other parts.
- The vehicle has a crash sensing and diagnostic module which records information after a crash. See *Vehicle Data Recording and Privacy* ⇨ 309 and *Event Data Recorders* ⇨ 309.
- Let only qualified technicians work on the airbag system. Improper service can mean that an airbag system will not work properly. See your dealer for service.

## Passenger Sensing System

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



The symbols for on and off will be visible during the system check. When the system check is complete, either the symbol for on or off will be visible. See *Passenger Airbag Status Indicator* ⇨ 98.

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

The passenger sensing system works with sensors that are part of the front outboard passenger seat and seat belt. The sensors are designed to detect the presence of a properly seated occupant and determine if

the front outboard passenger frontal airbag and knee airbag should be allowed to inflate or not.

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

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

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

### Warning

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

(Continued)

### Warning (Continued)

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 deploy under some unusual circumstance, even though the airbag(s) are off.

Never put a rear-facing child restraint in the front seat, even if the airbag is off. If securing a forward-facing child restraint in the front outboard passenger seat, always move the seat as far back as it will go. It is better to secure child restraints in the rear seat. Consider using another vehicle to transport the child when a rear seat is not available.

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

- The front outboard passenger seat is unoccupied.
- The system determines an infant is present in a child restraint.
- A front outboard passenger takes his/her weight off of the seat for a period of time.

## 56 Seats and 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, the off indicator will light and stay lit as a reminder that the airbags are off. See *Passenger Airbag Status Indicator* ⇨ 98.

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

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

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

### Warning

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light* ⇨ 97 for more information, including important safety information.

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

The passenger sensing system is designed to turn off the front outboard passenger frontal airbag and knee airbag, if the system determines that an infant is present in a child restraint. If a child restraint has been installed and the on indicator is lit:

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

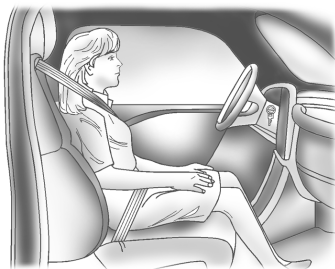
4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to *Securing Child Restraints (With the Seat Belt in the Rear Seat)* ⇨ 73 or *Securing Child Restraints (With the Seat Belt in the Front Seat)* ⇨ 75.

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

5. If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, turn the vehicle off. Then slightly recline the vehicle seatback and adjust the seat cushion, if adjustable, to make sure that the vehicle seatback is not pushing the child restraint into the seat cushion.  
  
Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint. See *Head Restraints* ⇨ 33.
6. Restart the vehicle.

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

### If the Off Indicator Is Lit for an Adult-Sized Occupant



If a person of adult size is sitting in the front outboard passenger seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat or that the child restraint locking feature is engaged. Use the following steps to allow

the system to detect that person and enable the front outboard passenger frontal airbag and knee airbag:

1. Turn the vehicle off.
2. Remove any additional material from the seat, such as blankets, cushions, seat covers, seat heaters, or seat massagers.
3. Place the seatback in the fully upright position.
4. Have the person sit upright in the seat, centered on the seat cushion, with legs comfortably extended.
5. If the shoulder portion of the belt is pulled out all the way, the child restraint locking feature will be engaged. This may unintentionally cause the passenger sensing system to turn the airbag off for some adult-sized occupants. If this happens, unbuckle the belt, let the belt go back all the way, and then buckle the belt again without pulling the belt out all the way.
6. Restart the vehicle and have the person remain in this position for two to three minutes after the on indicator is lit.

### Warning

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

### Additional Factors Affecting System Operation

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

A thick layer of additional material, such as a blanket or cushion, or aftermarket equipment such as seat covers, seat heaters, and seat massagers can affect how well the passenger sensing system operates. We recommend that you not use seat covers or other aftermarket equipment except when

## 58 Seats and Restraints

approved by GM for your specific vehicle. See *Adding Equipment to the Airbag-Equipped Vehicle* ⇨ 58 for more information about modifications that can affect how the system operates.

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

### Warning

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

### Servicing the Airbag-Equipped Vehicle

Airbags affect how the vehicle should be serviced. There are parts of the airbag system in several places around the vehicle. Your dealer and the service manual have information about servicing the vehicle and the airbag system.

### 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, including improperly repairing or replacing, any parts of the following:

- Airbag system, including airbag modules, front or side impact sensors, sensing and diagnostic module, or airbag wiring

- Front seats, including stitching, seams or zippers
- Seat belts
- Steering wheel, instrument panel, overhead console, ceiling trim, or pillar garnish trim
- Inner door seals, including speakers

Your dealer and the service manual have information about the location of the airbag modules and sensors, sensing and diagnostic module, and airbag wiring along with the proper replacement procedures.

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* ⇨ 55.

If the vehicle has rollover roof-rail airbags, see *Different Size Tires and Wheels* ⇨ 270 for additional important information.

If the vehicle must be modified because you have a disability and 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, see your dealer.

## 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* ⇨ 97.

### 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.

(Continued)

### Caution (Continued)

For the location of the airbags, see *Where Are the Airbags?* ⇨ 51. See your dealer for service.

## Replacing Airbag System Parts after a Crash

### ⚠ Warning

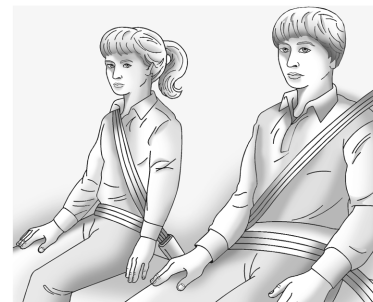
A crash can damage the airbag systems in the vehicle. A damaged airbag system may not properly protect you and your passenger(s) in a crash, resulting in serious injury or even death. To help make sure the airbag systems are working properly after a crash, have them inspected and any necessary replacements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

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

If the airbag readiness light stays on after the vehicle is started or comes on when you are driving, the airbag system may not work properly. Have the vehicle serviced right away. See *Airbag Readiness Light* ⇨ 97.

## Child Restraints

### Older Children



Older children who have outgrown booster seats should wear the vehicle's seat belts. Refer to *How to Wear Seat Belts Properly* ⇨ 44.

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.

## 60 Seats and Restraints

- Buckle the lap-shoulder belt. Does the shoulder belt rest on the shoulder? If yes, continue. If no, then return to the booster seat.
- Does the lap belt fit low and snug on the hips, touching the thighs? If yes, continue. If no, return to the booster seat.
- Can proper seat belt fit be maintained for the length of the trip? If yes, continue. If no, return to the booster seat.

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

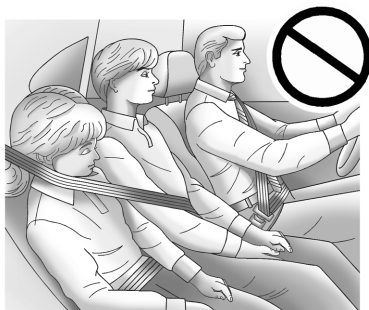
**A:** An older child should wear a lap-shoulder belt and get the additional restraint a shoulder belt can provide. The shoulder belt should not cross the face or neck. The lap belt should fit snugly below the hips, just touching the top of the thighs. This applies belt force to the child's pelvic bones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

According to accident statistics, children are safer when properly restrained in a rear seating position.

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

### Warning

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



### Warning

Never allow a child to wear the seat belt shoulder belt under both arms or 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 belt. The belt force would then be applied right on the abdomen. That could cause serious or fatal injuries. The shoulder belt should go over the shoulder and across the chest.



## Infants and Young Children

Everyone in a vehicle needs protection! This includes infants and all other children. Neither the distance traveled nor the age and size of the traveler changes the need, for everyone, to use safety restraints.

### Warning

Children can be seriously injured or killed if the shoulder belt is worn behind their back, under their legs, or 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

(Continued)

### Warning (Continued)

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 the child. Never leave children unattended in a vehicle and never allow children to improperly wear, or play with, the seat belts.

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

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

### Warning

Never hold an infant or a child while riding in a vehicle. Due to crash forces, an infant or a child will become so heavy it is not possible to hold it during a crash. 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)

(Continued)

### Warning (Continued)

force on a person's arms. An infant or child should be secured in an appropriate child 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

(Continued)

## 62 Seats and Restraints

### Warning (Continued)

forward-facing child restraint in the front outboard seat, always move the front passenger seat as far back as it will go.



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

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

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

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

For each type of child restraint, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle.

The instruction manual that is provided with the child restraint states the weight and height limitations for that particular child restraint. In addition, there are many kinds of child restraints available for children with special needs.

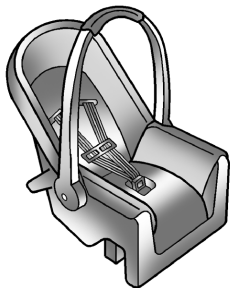
### Warning

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

### Warning

A young child's hip bones are still so small that the vehicle seat belt may not remain low on the hip bones, as it should. Instead, it may settle up around the child's abdomen. In a crash, the belt would apply force on a body area that is unprotected by any bony structure. This alone could cause serious or fatal injuries. To reduce the risk of serious or fatal injuries during a crash, young children should always be secured in an appropriate child restraint.

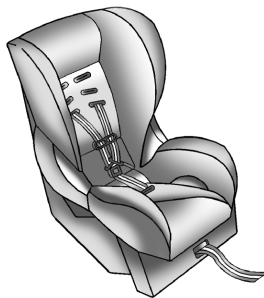
## Child Restraint Systems



### Rear-Facing Infant Restraint

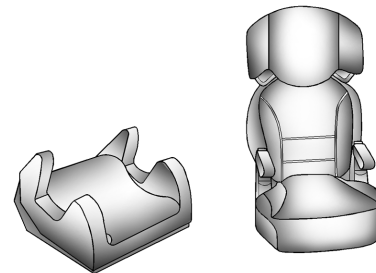
A rear-facing child restraint provides restraint with the seating surface against the back of the infant.

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



### Forward-Facing Child Restraint

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



### Booster Seats

A belt-positioning booster seat is used for children who have outgrown their forward-facing child restraint. Boosters are designed to improve the fit of the vehicle's seat belt system until the child is large enough for the vehicle seat belts to fit properly without a booster seat. See the seat belt fit test in *Older Children* ⇨ 59.

## 64 Seats and Restraints

### 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 seat belt or LATCH system, following the instructions that came with that child restraint and the instructions in this manual.

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraints must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by the LATCH system. See *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65 for more information. Children can be endangered in a crash if the child restraint is not properly secured in the vehicle.

When securing an add-on child restraint, refer to the following:

1. Instruction labels provided on the child restraint

2. Instruction manual provided with the child restraint

3. This vehicle owner's 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.

### Securing the Child Within the Child Restraint

#### Warning

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

### Where to Put the Restraint

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

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

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

#### Warning

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

(Continued)

### Warning (Continued)

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

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* ⇨ 55 for additional information.

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

Child restraints and booster seats vary considerably in size, and some may fit in certain seating positions better than others.

Do not install a child restraint in any rear seating position where it cannot be installed securely.

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

The seat in front of an installed child restraint should be adjusted to ensure proper installation according to the child restraint manual.

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

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

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

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

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

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

Make sure to follow the instructions that came with the child restraint, and also the instructions in this manual.

**66     Seats and Restraints**

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

For a forward-facing 5-pt harness child restraint where the combined weight of the child and restraint are up to 29.5 kg (65 lb), use either the lower LATCH anchorages with the top tether anchorage, or the seat belt with the top tether anchorage. Where the

combined weight of the child and restraint are greater than 29.5 kg (65 lb), use the seat belt with the top tether anchorage only.

### Recommended Methods for Attaching Child Restraints

Restraint Type	Combined Weight of the Child + Child Restraint	Use Only Approved Attachment Methods Shown with an X			
		LATCH – Lower Anchors Only	Seat Belt Only	LATCH – Lower Anchors and Top Tether Anchor	Seat Belt and Top Tether Anchor
Rear-Facing Child Restraint	Up to 29.5 kg (65 lb)	X	X		
Rear-Facing Child Restraint	Greater than 29.5 kg (65 lb)		X		
Forward-Facing Child Restraint	Up to 29.5 kg (65 lb)			X	X
Forward-Facing Child Restraint	Greater than 29.5 kg (65 lb)				X

See *Securing Child Restraints (With the Seat Belt in the Rear Seat)* ⇨ 73 or *Securing Child Restraints (With the Seat Belt in the Front Seat)* ⇨ 75.

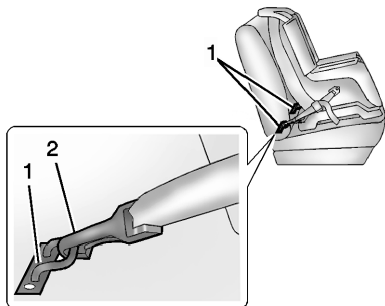
Child restraints built after March 2014 are labeled with the maximum child weight, with which the LATCH system can be used for installing the child restraint.

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

Not all vehicle seating positions have lower anchors. In this case, the seat belt must be used (with top tether where available) to secure the child restraint. See *Securing Child Restraints (With the Seat Belt in the Rear Seat)* ⇨ 73 or *Securing Child Restraints (With the Seat Belt in the Front Seat)* ⇨ 75.

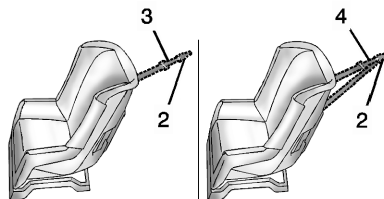
## 68 Seats and Restraints

### Lower Anchors



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

### Top Tether Anchor



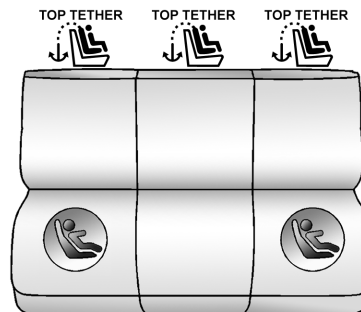
A top tether (3,4) is used to secure the top of the child restraint to the vehicle. A top tether anchor is built into the vehicle. The top tether attachment hook (2) on the child restraint connects to the top tether anchor in the vehicle in order to reduce the forward movement and rotation of the child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


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


Some child restraints with a top tether are designed for use with or without the top tether being attached. Others require the

top tether always to be attached. Be sure to read and follow the instructions for your child restraint.

### Lower Anchor and Top Tether Anchor Locations



 : Seating positions with top tether anchors.

 : Seating positions with two lower anchors.



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



The outboard lower anchors are behind the vertical openings in the seat trim.

#### TOP TETHER



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



The top tether anchors for each rear seating position are located on the back of the rear seatback. Be sure to use an anchor located directly behind the seating position where the child restraint will be placed.

For models with a cargo cover, the top tether anchors are on the back of the rear seatbacks. Remove the cargo cover before installing the top tether. The cargo cover should remain off while the top tether is in use. Be sure to use an anchor directly behind 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* ⇨ 64 for additional information.

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

##### **Warning**

A child could be seriously injured or killed in a crash if the child restraint is not properly attached to the vehicle using

(Continued)

## 70 Seats and Restraints

### Warning (Continued)

either the LATCH anchors or the vehicle seat belt. Follow the instructions that came with the child restraint and the instructions in this manual.

### Warning

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

### Warning

Children can be seriously injured or strangled if a shoulder belt is wrapped around their neck. The shoulder belt can tighten but cannot be loosened if it is locked. The shoulder belt locks when it is pulled all the way out of the retractor. It unlocks when the shoulder belt is  
(Continued)

### Warning (Continued)

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

### Caution

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

Do not fold the rear seatback when the seat is occupied. Do not fold the empty rear seat with a seat belt buckled. This  
(Continued)

### Caution (Continued)

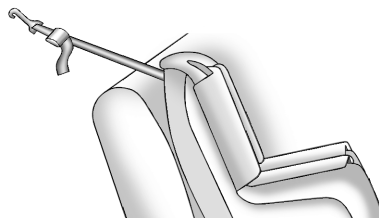
could damage the seat belt or the seat. Unbuckle and return the seat belt to its stowed position, before folding the seat.

If you need to secure more than one child restraint in the rear seat, see *Where to Put the Restraint* ⇨ 64.

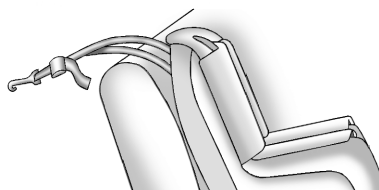
1. Attach and tighten the lower attachments to the lower anchors. If the child restraint does not have lower attachments or the desired seating position does not have lower anchors, secure the child restraint with the top tether and the seat belt. Refer to the child restraint manufacturer instructions and the instructions in this manual.
  - 1.1. Find the lower anchors for the desired seating position.
  - 1.2. Put the child restraint on the seat.

For rear outboard seating positions, if the head restraint interferes with the proper installation of the child restraint, the head restraint may be removed. See "Head Restraint Removal and Reinstallation" at the end of this section.

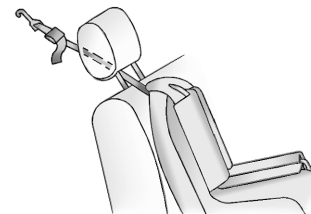
- 1.3. Attach and tighten the lower attachments on the child restraint to the lower anchors.
2. If the child restraint manufacturer recommends that the top tether be attached, adjust the top tether to its full length and attach it to the anchor. Refer to the child restraint instructions and the following steps:
  - 2.1. Find the top tether anchor.
  - 2.2. Open the cover, if equipped, to access the top tether anchors.
  - 2.3. Remove the cargo cover before installing the top tether. The cargo cover can be replaced after the top tether is properly installed.
  - 2.4. Route and tighten the top tether according to your child restraint instructions and the following instructions:



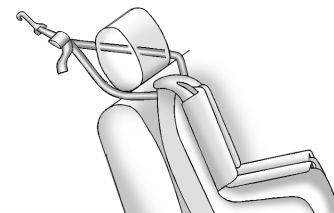
If the position you are using does not have a headrest or head restraint and you are using a single tether, route the tether over the seatback.



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



If the position you are using has an adjustable headrest or head restraint, adjust it accordingly to allow proper fitment. If you are using a single tether, route the tether in between the headrest or head restraint posts.



If the position you are using has an adjustable headrest or head restraint, adjust it accordingly to allow proper fitment. If you are

## 72 Seats and Restraints

using a dual tether, route the tether around the headrest or head restraint posts.

If the child restraint is installed next to a center seat, make sure the top tether does not interfere with the center seating position shoulder belt/retractor. If it does, find another suitable seating position to install the child restraint.

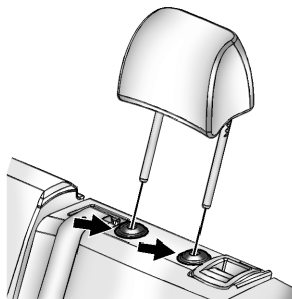
3. Before placing a child in the child restraint, make sure it is securely held in place. To check, grasp the child restraint at the LATCH path and attempt to move it side to side and back and forth. There should be no more than 2.5 cm (1 in) of movement for proper installation.

### Head Restraint Removal and Reinstallation

The second row outboard head restraints can be removed if they interfere with the proper installation of the child restraint.

To remove the second row head restraint:

1. Partially fold the seatback forward. See *Rear Seats* ⇨ 41 for additional information.



2. Press both buttons on the head restraint posts at the same time, and pull up on the head restraint.
3. Store the head restraint in a secure place.
4. When the child restraint is removed, reinstall the head restraint before the seating position is used.



### Warning

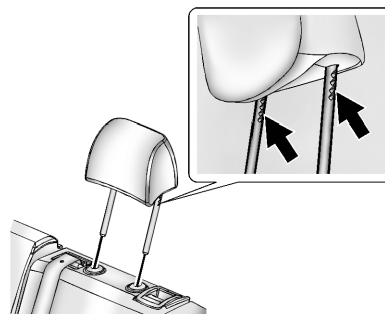
With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not

(Continued)

### Warning (Continued)

drive until the head restraints for all occupants are installed and adjusted properly.

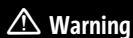
To reinstall the head restraint:



1. Insert the head restraint posts into the holes in the top of the seatback. The notches on the posts should face the driver side of the vehicle.
2. Push the head restraint down. If necessary, press the height adjustment release button to further lower the head restraint. See *Head Restraints* ⇨ 33.

3. Try to move the head restraint to make sure that it is locked in place.

### Replacing LATCH System Parts After a Crash



#### Warning

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

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

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

### Securing Child Restraints (With the Seat Belt in the Rear Seat)

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

If the child restraint has the LATCH system, see *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65 for how and where to install the child restraint using LATCH. If a child restraint is secured in the vehicle using a seat belt and it uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65 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 tether must be anchored.

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

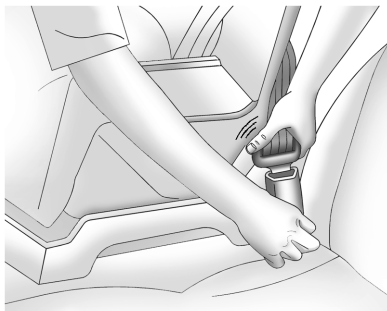
If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint* ⇨ 64.

1. Put the child restraint on the seat.

If the head restraint interferes with the proper installation of the child restraint, the head restraint may be removed. See "Head Restraint Removal and Reinstallation" under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65.

2. Pick up the latch plate and run the lap and shoulder portions of the vehicle seat belt through or around the child restraint. Ensure the seat belt webbing is routed as directly as possible and is not caught on seat handles or plastic trim. The child restraint instructions will show you how.

## 74 Seats and Restraints



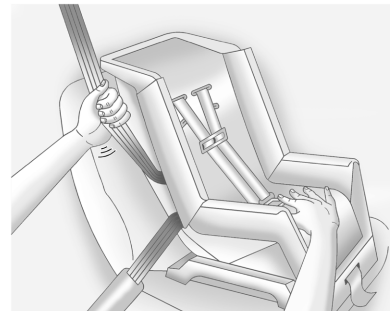
3. Push the latch plate into the buckle until it clicks.

Position the release button on the buckle, away from the child restraint, so that the seat belt could be quickly unbuckled if necessary.

There must not be direct contact of the child restraint to the push button.



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



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

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

6. If the child restraint has a top tether, follow the child restraint manufacturer's instructions regarding the use of the top tether. See *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65.
7. Before placing a child in the child restraint, make sure it is securely held in place. Refer to your child restraint manufacturer instructions.

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

If the head restraint was removed, reinstall it before the seating position is used. See "Head Restraint Removal and Reinstallation" under *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65 for additional information on installing the head restraint properly.

### Securing Child Restraints (With the Seat Belt in the Front Seat)

This vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint* ⇨ 64.

In addition, the vehicle has a passenger sensing system which is designed to turn off the front outboard passenger frontal and knee airbag under certain conditions. See *Passenger Sensing System* ⇨ 55 and *Passenger Airbag Status Indicator* ⇨ 98 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.

(Continued)

#### Warning (Continued)

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 deploy under some unusual circumstance, even though the airbag(s) are off.

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.

See *Passenger Sensing System* ⇨ 55 for additional information.

If the child restraint uses a top tether, see *Lower Anchors and Tethers for Children (LATCH System)* ⇨ 65 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 tether must be anchored.

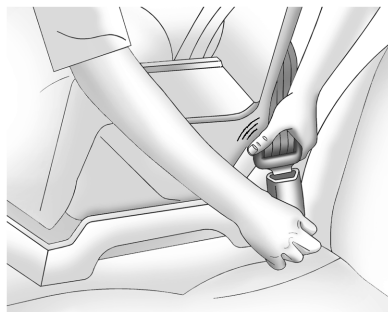
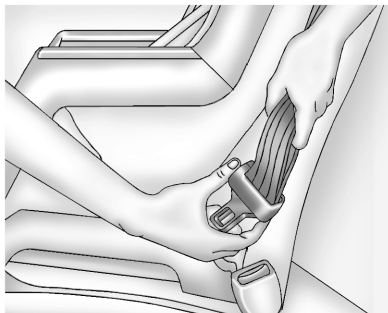
## 76 Seats and Restraints

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

1. Move the seat as far back as it will go before securing the forward-facing child restraint. Move the seat upward or the seatback to an upright position, if needed, to get a tight installation of the child restraint. There must be finger clearance between the push button and the child restraint.

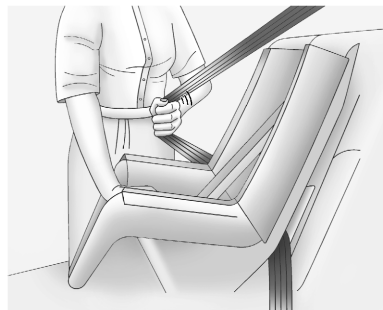
When the passenger sensing system has turned off the front outboard passenger frontal and knee airbag, the off indicator on the passenger airbag status indicator should light and stay lit when you start the vehicle. See *Passenger Airbag Status Indicator* ⇨ 98.

2. Put the child restraint on the seat.
3. Pick up the latch plate and run the lap and shoulder portions of the vehicle seat belt through or around the restraint. Ensure the seat belt webbing is routed as direct as possible and is not caught on seat handles or plastic trim. The child restraint instructions will show you how.

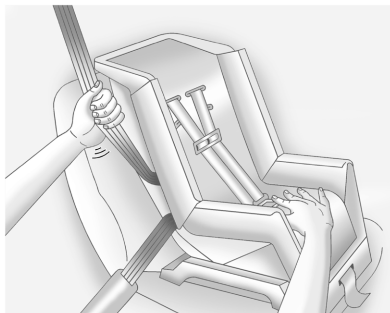


4. Push the latch plate into the buckle until it clicks.

Position the release button on the buckle, away from the child restraint, so that the seat belt could be quickly unbuckled if necessary.



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



6. To tighten the belt, push down on the child restraint, pull the shoulder portion of the belt to tighten the lap portion of the belt, and feed the shoulder belt back into the retractor.

There must be finger clearance between the push button and the child restraint. If there is not clearance between the buckle push button and the child restraint, move the seat upward and repeat prior installation steps. Otherwise secure the child restraint in a rear seat.

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. Refer to your child restraint manufacturer instructions.

If the airbags 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* ⇨ 55.

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

## 78 Storage

### Storage

#### Storage Compartments

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#### Roof Rack System

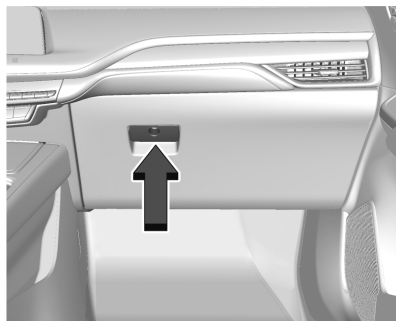
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### Storage Compartments

#### Warning

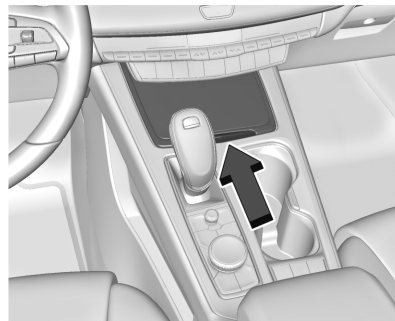
Do not store heavy or sharp objects in storage compartments. In a crash, these objects may cause the cover to open and could result in injury.

#### Glove Box



Lift the handle to open the glove box. Close until it latches. Use the vehicle key to lock or unlock. See *Keys* ⇨ 6.

### Front Storage



To open the front storage compartment, slide the cover forward. There are two USB ports inside. To close, push the cover forward and let go.

## **Sunglasses Storage**

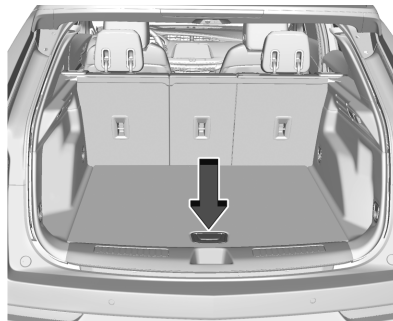


If equipped, sunglasses storage is on the overhead console. Press the fixed button on the cover and release to access.

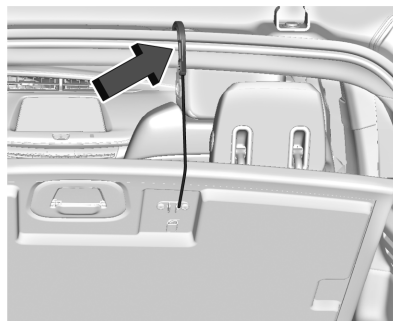
## **Armrest Storage**

For vehicles with a rear seat armrest, pull the rear seat armrest forward to access the cupholders with removable liner.

## **Rear Storage**

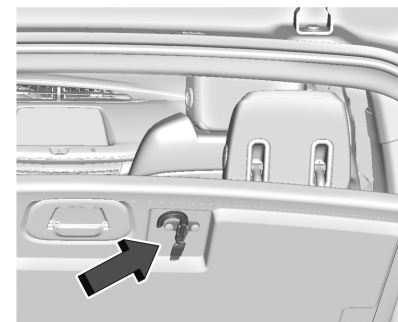


There is storage in the floor of the rear cargo area. Lift the handle to access.



Remove the load floor hook from the holder and hook to the weatherstrip above.

When done, return the load floor hook to the holder.

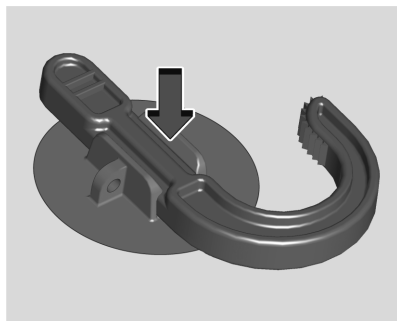


To install the load floor hook into the holder:

## 80 Storage

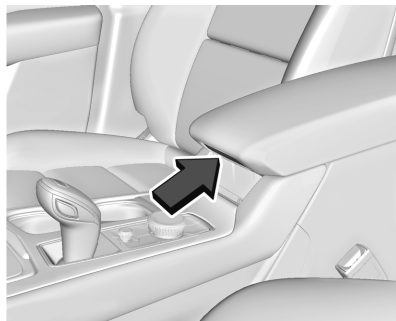


1. Insert one side of the load floor hook into the holder.



2. Push down on the other side of the load floor hook to lock into place.

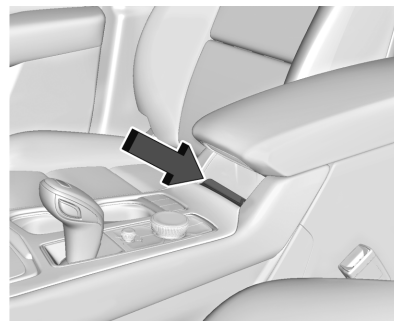
### Center Console Storage



Press the button to access the storage area in front of the armrest cover.

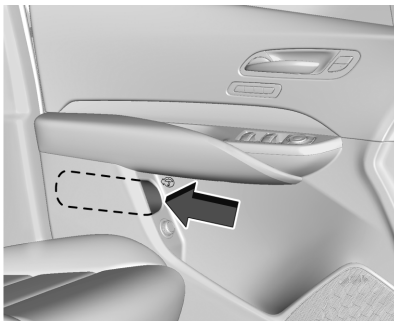
There is a 12-volt power outlet inside.

If equipped, there are two charge-only USB ports on the rear of the center console.



There is a wireless smartphone charger in the front of the console storage. See *Wireless Charging* ⇨ 89.

## Umbrella Storage



Slide a compact umbrella no larger than 6 cm (2.36 in) in diameter into the opening on the driver or passenger door.

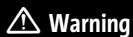
## Additional Storage Features

### Cargo Cover



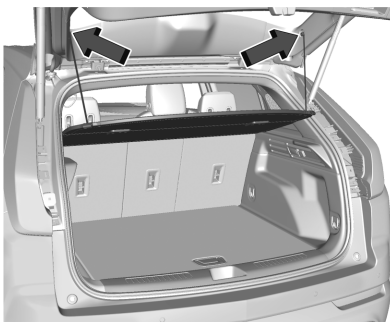
#### Warning

An unsecured cargo cover could strike people in a sudden stop or turn, or in a crash. Store the cargo cover securely or remove it from the vehicle.



#### Warning

Do not place objects on the cargo cover. Sudden stops or turns can cause objects to be thrown in the vehicle. You or others could be injured.



If equipped, the cargo cover can be used to cover items in the cargo area.

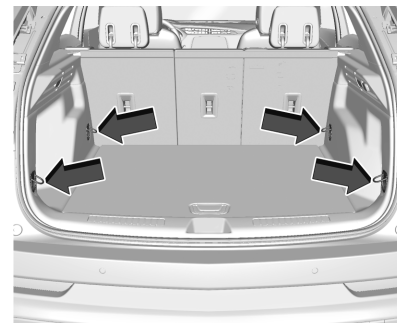
### Installing the Cargo Cover

1. Slide the cargo cover into the two front corner brackets until it snaps in place.
2. Attach the cords to the fixed retainers on the liftgate.

### Removing the Cargo Cover

To remove, disengage the cords and pull the cover out of the vehicle.

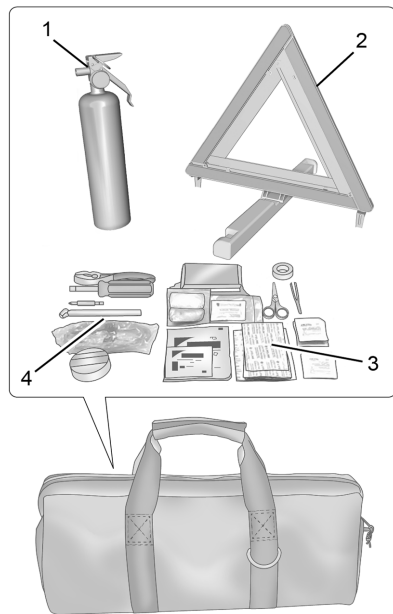
### Cargo Tie-Downs



The vehicle has four cargo tie-downs in the rear compartment.

## 82 Storage

### Safety Kit



The safety kit is a freestanding bag in the cargo area.

The items stored in the safety kit bag include:

1. Fire Extinguisher
2. Warning Triangle
3. First Aid Kit
4. Highway Safety Kit

#### Warning

Perform fire extinguisher maintenance in intervals specified by its manufacturer. Periodically check:

- The internal pressure is still indicated by the green operating zone of the pressure gauge.
- The lead seal is not breached.
- The extinguisher validity is not expired.

If the fire extinguisher is put to use or if there is an issue with its operation, replace the extinguisher with a new one that meets current country regulations.

Lack of proper maintenance may lead to injury or death if the fire extinguisher does not function properly.

### Roof Rack System

The vehicle may be equipped with side-rails for a roof rack system. Cargo must be secured with properly installed cross rails and other accessories designed to carry cargo. These can be purchased from your dealer.

#### Warning

Before driving and occasionally during a trip, check that cargo is securely fastened, rests evenly between the cross rails and does not block the vehicle's lamps or windows. Never load cargo directly on the roof of the vehicle or allow cargo to hang over the rear or sides of the vehicle. Never load cargo without first properly installing cross rails and other accessories designed to carry cargo. Personal injury, death or damage to the vehicle or other property may occur.

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.

### Cargo Weight Limits

Do not exceed the maximum cargo weight for the roof rack system, including the weight of the cross rails and any other accessories used to carry the cargo such as bike racks or roof boxes. The maximum cargo weight that can be loaded onto the roof rack system is 100 kg (220 lb) or the weight designated in the instructions that came with the cross rails or other roof rack accessories, whichever is less.

#### Warning

Never load the roof rack with more weight than specified in this section. Loading cargo on the roof rack will make the vehicle's center of gravity higher. To avoid losing control of the vehicle, avoid overloading, high speeds, sudden starts, sharp turns, sudden braking, or abrupt maneuvers when carrying cargo on the roof rack.

The weight of any cargo carried on the roof rack system must be included in calculating the loaded weight of the vehicle. Do not exceed the maximum vehicle capacity when loading the vehicle, including cargo carried on the roof rack system and passengers and

cargo carried in the vehicle. For more information on vehicle capacity and loading, see *Vehicle Load Limits* ⇨ 179.

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### Instruments and Controls

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## Controls

### Steering Wheel Adjustment

#### Manual Steering Wheel

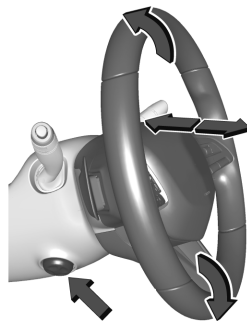


To adjust the steering wheel:

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. Pull the lever up to lock the steering wheel in place.

Do not adjust the steering wheel while driving.

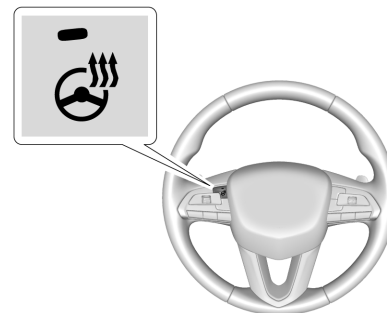
#### Power Tilt and Telescoping Steering Wheel




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

Do not adjust the steering wheel while driving.

### Heated Steering Wheel



 : If equipped, press to turn on or off. A light near the button displays when the feature is turned on.

The steering wheel takes about three minutes to reach maximum heat.

#### Automatic Heated Steering Wheel

If equipped with remote start, the heated steering wheel will turn on automatically during a remote start along with the heated seats when it is cold outside. The heated steering wheel indicator light may come on.


## 86 Instruments and Controls

If equipped with auto heated seats, the heated steering wheel will turn on when the auto heated seats are activated. The heated steering wheel indicator will follow the state of the steering wheel heat.

See *Heated and Ventilated Front Seats* ⇨ 40.

To turn this feature on or off, select Settings > Vehicle > Comfort and Convenience > Heated Steering Wheel > Select ON or OFF.

### Horn

Press  on the steering wheel pad to sound the horn.

### Windshield Wiper/Washer



**Windshield Wiper with Rainsense (AUTO Shown), If Equipped**

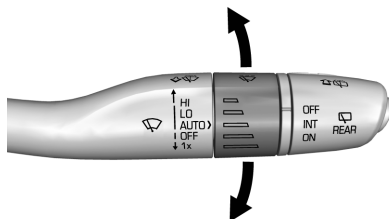


**Windshield Wiper without Rainsense (INT Shown)**

With the ignition on or in accessory mode, move the windshield wiper lever to select the wiper speed.

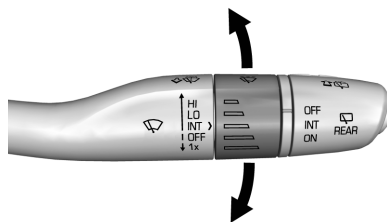
**HI** : Use for fast wipes.

**LO** : Use for slow wipes.



**AUTO** : If equipped with Rainsense, use this setting for intermittent wipes when Rainsense is disabled, or Rainsense wipes


when Rainsense is enabled. For intermittent wipes, move the windshield wiper lever to AUTO, then turn the band up for more frequent wipes or down for less frequent wipes. If Rainsense is turned on, see “Rainsense” later in this section.



**INT** : If equipped with intermittent wipers only, move the windshield wiper lever to INT. Turn the 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. 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 has been activated. See *Washer Fluid* ⇨ 243 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.

### Warning

Before driving the vehicle, always clear snow and ice from the hood, windshield, washer nozzles, roof, and rear of the vehicle, including all lamps and windows. Reduced visibility from snow and ice buildup could lead to a crash.

Clear snow and ice from the wiper blades and windshield before using them. If frozen to the windshield, carefully loosen or thaw them. Damaged blades should be replaced. See *Wiper Blade Replacement* ⇨ 247.

Heavy snow or ice can overload the wiper motor. See *Electrical System Overload* ⇨ 250.

## Wiper Parking

If the ignition is turned off while the wipers are on LO, HI, or AUTO with Rainsense turned off, they will immediately stop.

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

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

## Rainsense

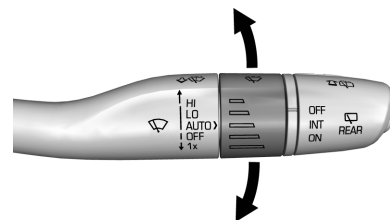
If equipped with Rainsense and the feature is turned on, a sensor near the top center of the windshield detects the amount of water on the windshield and controls the frequency of the windshield wiper based on the current sensitivity setting.

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

**AUTO** : Move the windshield wiper lever to AUTO. Turn the band on the wiper lever to adjust the sensitivity.

## Instruments and Controls

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

To turn the Rainsense feature on or off, select Settings > Vehicle > Comfort and Convenience > Rainsense Wipers > Select ON or OFF.

## Wiper Arm Assembly Protection

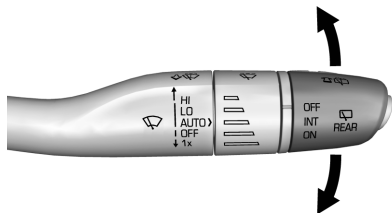
When using an automatic car wash, move the windshield wiper lever to OFF. This disables the automatic Rainsense windshield wipers.

## 88 Instruments and Controls

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

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

### Rear Window Wiper/Washer




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

Turn the controls to adjust the setting.

**OFF** : Turns the wiper off.

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

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

 : Push the windshield wiper lever forward to spray washer fluid on the rear window and the rear camera lens, if equipped. See *Rear Camera Mirror* ⇨ 27. The wipers will clear the rear window and either stop or return to your preset speed. For more washer cycles, push and hold the lever.

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

### Rear Wiper Arm Assembly Protection

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

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

### Auto Wipe in Reverse Gear

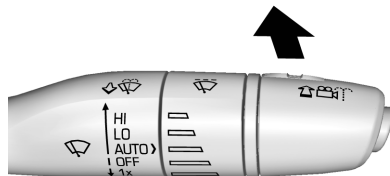
If the rear wiper control is off, the rear wiper will automatically operate continuously when the transmission is in

R (Reverse), and the front windshield wiper is performing low or high speed wipes. If the rear wiper control is off, the transmission is in R (Reverse), and the front windshield wiper is performing INT wipes, then the rear wiper automatically performs INT wipes.

This feature can be turned on or off. Go to Settings > Vehicle > Comfort and Convenience > Auto Wipe in Reverse Gear > Select ON or OFF.

The windshield washer reservoir is used for the windshield, rear window, and Rear Camera Mirror, if equipped. See *Rear Camera Mirror* ⇨ 27. Check the fluid level in the reservoir if either washer is not working. See *Washer Fluid* ⇨ 243.

### Rear Camera Washer



If equipped, push the windshield wiper lever forward to spray washer fluid on the rear camera lens. The lever returns to its starting position when released. See *Rear Camera Mirror* ⇨ 27.

## Compass

The vehicle may have a compass display on the Driver Information Center (DIC). The compass receives its heading and other information from the Global Positioning System (GPS) antenna, StabiliTrak/Electronic Stability Control (ESC), and vehicle speed information.

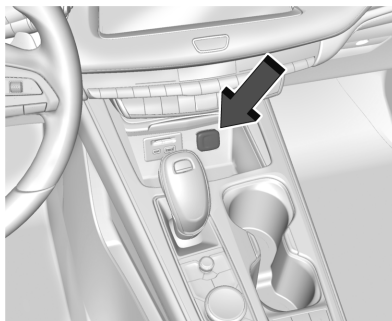
The compass system is designed to operate for a certain number of miles or degrees of turn before needing a signal from the GPS satellites. When the compass display shows CAL, drive the vehicle for a short distance in an open area where it can receive a GPS signal. The compass system will automatically determine when a GPS signal is restored and provide a heading again.

## Clock

Set the time and date using the infotainment system. See "Time/Date" under *Settings* ⇨ 155.

## Power Outlets

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



The vehicle has three accessory power outlets: one at the front of the center console, one under the armrest, and one in the rear cargo area.

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

When adding electrical equipment, be sure to follow the proper installation instructions included with the equipment. See *Add-On Electrical Equipment* ⇨ 230.

### 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.

Always unplug electrical equipment when not in use and do not plug in equipment that exceeds the maximum 15 amps rating.

## Wireless Charging

If equipped and enabled, the vehicle has wireless charging in front of the center console. The system operates at 145 kHz and wirelessly charges one Qi compatible smartphone. The power output of the system is capable of charging at a rate up to 3 amp (15 W), as requested by the compatible smartphone.

## 90 Instruments and Controls

### Warning

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

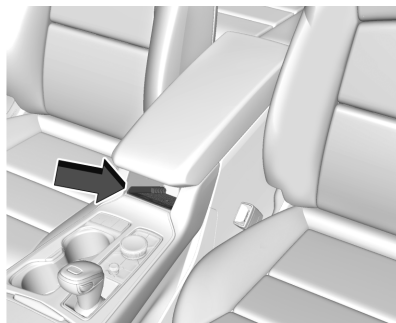
The vehicle must be on, in accessory mode, or Retained Accessory Power (RAP) must be active. The wireless charging feature may not correctly indicate charging when the vehicle is in RAP, during a Bluetooth phone call, or when phone projection (e.g. Apple CarPlay / Android Auto) is active. See *Retained Accessory Power (RAP)* ⇨ 185.

The operating temperature is -40 °C (-40 °F) to 85 °C (185 °F) for the charging system and 0 °C (32 °F) to 35 °C (95 °F) for the phone. A charging stopped alert may be displayed on the infotainment screen, if the wireless charger or smartphone are outside of normal operating temperature. Charging will automatically resume when a normal operating temperature is reached.

### Warning

Remove all objects from the charger before charging your compatible smartphone. Objects, such as coins, keys, rings, paper clips, or cards, between the smartphone and charger may become very hot.

On the rare occasion that the charging system does not detect an object, and the object gets wedged between the smartphone and charger, remove the smartphone and allow the object to cool before removing it from the charger, to prevent burns.






To charge a compatible smartphone:

1. Confirm the smartphone is capable of wireless charging.
2. Remove all objects from the charging pad. The system may not charge if there are any objects between the smartphone and charger.
3. Place the smartphone face up against the rear of the charger.


To maximize the charge rate, ensure the smartphone is fully seated and centered in the holder with nothing under it.

A thick smartphone case may prevent the charger from working, or reduce the charging performance. See your dealer for additional information.

4. A green  will appear on the infotainment display, next to the phone icon. This indicates that the smartphone is detected.
5. If a smartphone is placed on the charger and  turns off or turns yellow, remove the smartphone and any objects from the pad. Turn the smartphone 180 degrees and wait a few seconds before placing/aligning it on the pad again.

6. If a smartphone is placed on the charger and  turns red, the charger and/or the smartphone is overheated. Remove the smartphone and any objects from the charger in order to cool the system.

The smartphone may become warm during charging. This is normal. In warmer temperatures, the speed of charging may be reduced.

For vehicles with wireless phone projection, the smartphone may overheat during wireless charging. The smartphone may slow down, stop charging, or shut down to protect the battery. The phone may need to be removed from its case to prevent overheating. The  may flash while the phone is cooling down enough for wireless charging to automatically resume. This is normal. Individual phone performance may vary.

#### Software Acknowledgements

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

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#### Freescal-WCT library

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## 92 Instruments and Controls

### Cigarette Lighter

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

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

#### Caution

Holding a cigarette lighter in while it is heating does not let the lighter back away from the heating element when it is hot. Damage from overheating can occur to the lighter or heating element, or a fuse could be blown. Do not hold a cigarette lighter in while it is heating.

### Ashtrays

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

#### Caution

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

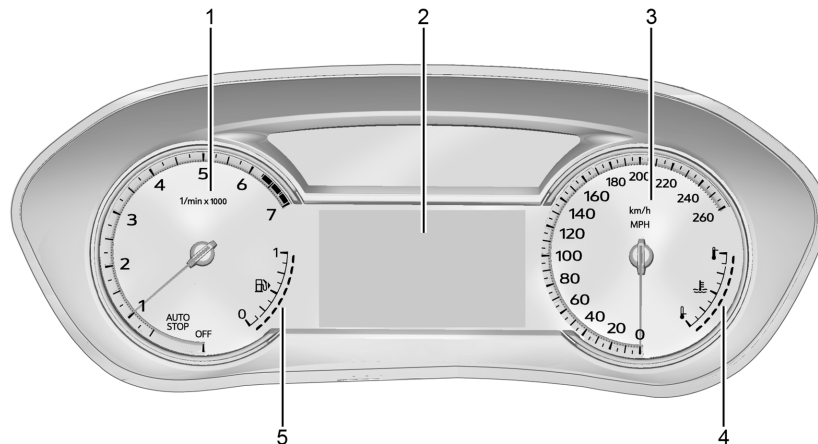
To remove the ashtray, pull it from the cupholder. Push it back down to be sure it is secure.

### Warning Lights, Gauges, and Indicators

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

Some warning lights come on briefly when the engine is started to indicate they are working. When one of the warning lights comes on and stays on while driving, or when one of the gauges shows there may be a problem, check the section that explains what to do. Waiting to do repairs can be costly and even dangerous.

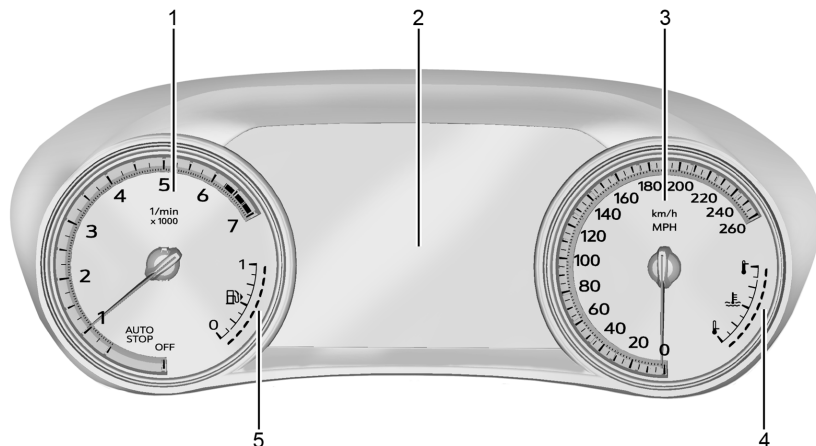
## Instrument Cluster



### Base Level

- |  |   |
|--|---|
| 1. Tachometer ⇨ 96                       | 4. Engine Coolant Temperature Gauge<br>⇨ 96 |
| 2. Driver Information Center (DIC) ⇨ 106 |   |
| 3. Speedometer ⇨ 95                      | 5. Fuel Gauge ⇨ 96                          |

## 94 Instruments and Controls



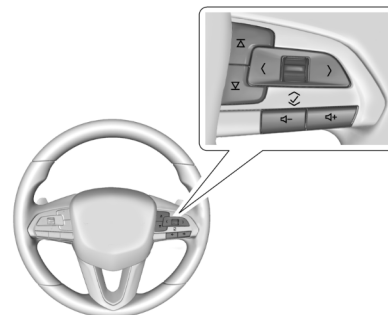
### Uplevel

1. Tachometer ⇨ 96
2. Driver Information Center (DIC) ⇨ 106
3. Speedometer ⇨ 95

4. Engine Coolant Temperature Gauge ⇨ 96
5. Fuel Gauge ⇨ 96

### Cluster Menu

There is an interactive display area in the center of the instrument cluster.



Use the right steering wheel control to open and scroll through the different items and displays.

Press < or > to access the cluster applications. Use the thumbwheel to scroll through the list of available applications. Not all applications will be available on all vehicles.

- Info App. This is where the selected Driver Information Center (DIC) displays can be viewed. See *Driver Information Center (DIC)* ⇨ 106.
- Audio
- Navigation
- Phone
- Options

### Audio

In the Audio menu browse for music, select from the favorites, or change the audio source. Use the thumbwheel to change the station or go to the next or previous track.

### Navigation

If there is no active route, press enter to access the Recents or Favorites list. If there is an active route, press the thumbwheel to cancel or resume route guidance, mute or unmute voice guidance, or access the Recents or Favorites list.

### Phone

In the Phone menu, if there is no active phone call, view recent calls, or scroll through contacts. If there is an active call, mute the phone or switch to handset operation.

### Options

Use the thumbwheel to scroll through items in the Options menu.

**Units :** Choose English or Metric units by pressing the thumbwheel while the desired item is highlighted.

**Info Page Options :** Press the thumbwheel to select the items to be displayed in the Info app. See *Driver Information Center (DIC)* ⇨ 106.

**Display :** Press the thumbwheel to enter the Display menu. Select to turn on or off the speedometer, time, fuel range, or, if equipped, compass or speed sign.

**Speed Warning :** The Speed Warning display allows the driver to set a speed that they do not want to exceed. To set the Speed Warning press the thumbwheel when Speed Warning is displayed. Use the thumbwheel to adjust the value and press to set the speed.

Once the speed is set, this feature can be turned off by pressing the thumbwheel while viewing this page. If the selected speed limit is exceeded, a pop-up warning is displayed with a chime.

**Head-up Display (HUD) (Uplevel) :** If equipped, this feature allows for adjusting the angle of the HUD image and changing or turning off the Speed Limit Sign.

**HUD Rotation :** Press the thumbwheel while Adjust Rotation is highlighted to enter Adjust Mode. Scroll to adjust the angle of

the HUD display. Press the thumbwheel to confirm and save the setting. This feature may only be available in P (Park).

**Speed Sign:** If equipped, press the thumbwheel while Speed Sign is highlighted to turn it on or off.

**Software Information :** Displays open source software information.

### Speedometer

The speedometer shows the vehicle speed in kilometers per hour (km/h) or miles per hour (mph).

This vehicle is equipped with an overspeed warning device. When the vehicle's speed reaches 120 km/h (75 mph), a chime will sound. A message also displays in the Driver Information Center (DIC).

### 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.

## 96 Instruments and Controls

The trip odometer is accessed and reset through the Driver Information Center (DIC). See *Driver Information Center (DIC)* ⇨ 106.

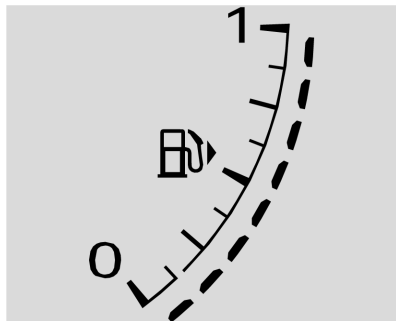
### Tachometer

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

For vehicles with the Stop/Start system, when the ignition is on, the tachometer indicates the vehicle status. When pointing to AUTO STOP, the engine is off but the vehicle is on and can move. The engine could auto start at any time. When the indicator points to OFF, the vehicle is off.

When the engine is on, the tachometer will indicate the engine's revolutions per minute (rpm). The tachometer may vary by several hundred rpm, during Auto Stop mode, when the engine is shutting off and restarting.

### Fuel Gauge



When the ignition is on, the fuel gauge indicates the approximate amount of fuel left in the tank.

There is an arrow near the fuel gauge pointing to the side of the vehicle the fuel door is on.

When the indicator nears empty, the low fuel light comes on. There still is a little fuel left, but the vehicle should be refueled soon.

The fuel gauge may:

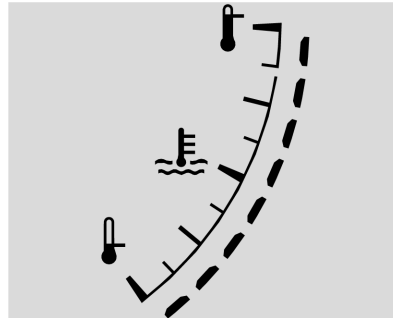
- Take a little more, or less fuel to fill up than it indicates. For example, the gauge may have indicated the tank is half full,

but it actually will take a little more, or less than half the tank's capacity to fill the tank.

- Moves a little while turning a corner, speeding up, or braking.
- Take a few seconds to stabilize after the ignition is turned on and goes back to empty when the ignition is turned off.

These are normal conditions, none of which indicate a problem with the fuel gauge.

### Engine Coolant Temperature Gauge



This gauge measures the temperature of the vehicle's engine.

While driving under normal operating conditions, if the red LED is illuminated, the engine is too hot. Pull off the road, stop the vehicle, and turn off the engine as soon as possible.

## Seat Belt Reminders

### Driver Seat Belt Reminder Light

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



When the vehicle is started, this light flashes and a chime may come on to remind the driver to fasten their seat belt.

Then the light stays on solid until the belt is buckled. This cycle may continue several times if the driver remains or becomes unbuckled while the vehicle is moving.

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

### Front Passenger Seat Belt Reminder Light

The vehicle may have a front passenger seat belt reminder light near the passenger airbag status indicator. See *Passenger Sensing System* ⇨ 55.



When the vehicle is started, this light flashes and a chime may come on to remind passengers to fasten their seat belt.

Then the light stays on solid until the belt is buckled. This cycle continues several times if the front passenger remains or becomes unbuckled while the vehicle is moving.

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

The front passenger seat belt reminder light and chime may come on if an object is put on the seat such as a briefcase, handbag, grocery bag, laptop, or other electronic

device. To turn off the reminder light and/or chime, remove the object from the seat or buckle the seat belt.

### Airbag Readiness Light

This light shows if there is an electrical problem with the airbag system. It is located in the instrument cluster. The system check includes the airbag sensor(s), the passenger sensing system, the pretensioners, the airbag modules, the wiring, and the crash sensing and diagnostic module. For more information on the airbag system, see *Airbag System* ⇨ 49.



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.

## 98 Instruments and Controls

### Warning

If the airbag readiness light stays on after the vehicle is started or comes on while driving, it means the airbag system might not be working properly. The airbags in the vehicle might not inflate in a crash, or they could even inflate without a crash. To help avoid injury, have the vehicle serviced right away.

If there is a problem with the airbag system, a Driver Information Center (DIC) message may also come on.

### Passenger Airbag Status Indicator

The vehicle has a passenger sensing system. See *Passenger Sensing System* ⇨ 55 for important safety information. The overhead console has a passenger airbag status indicator.



When the vehicle is started, the passenger airbag status indicator will light the symbols for on and off for several seconds as a system check. Then, after several more seconds, the status indicator will light the on or off symbol to let you know the status of the front outboard passenger frontal airbag.

If the on symbol is lit on the passenger airbag status indicator, it means that the front outboard passenger frontal airbag is allowed to inflate.

If the off symbol is lit on the airbag status indicator, it means that the passenger sensing system has turned off the front outboard passenger frontal airbag.

If, after several seconds, both status indicator lights remain on, or if there are no lights at all, there may be a problem with the lights or the passenger sensing system. See your dealer for service.

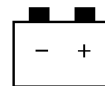
### Warning

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself  
(Continued)

### Warning (Continued)

or others, have the vehicle serviced right away. See *Airbag Readiness Light* ⇨ 97 for more information, including important safety information.

## Charging System Light



The charging system light comes on briefly when the ignition is turned on, but the engine is not running, as a check to show the light is working. It should go out when the engine is started.

If the light stays on, or comes on while driving, there may be a problem with the electrical charging system. Have it checked by your dealer. Driving while this light is on could drain the battery.

When this light comes on, or is flashing, the Driver Information Center (DIC) also displays a message.

If a short distance must be driven with the light on, be sure to turn off all accessories, such as the radio and air conditioner. Find a safe place to stop the vehicle.

## Malfunction Indicator Lamp (Check Engine Light)

This light is part of the vehicle's emission control on-board diagnostic system. If this light is on while the engine is running, a malfunction has been detected and the vehicle may require service. The light should come on to show that it is working when the ignition is in Service Mode. See *Ignition Positions* ⇨ 183.



Malfunctions are often indicated by the system before any problem is noticeable. Being aware of the light and seeking service promptly when it comes on may prevent damage.

### Caution

If the vehicle is driven continually with this light on, the emission control system may not work as well, the fuel economy may be lower, and the vehicle may not run smoothly. This could lead to costly repairs that might not be covered by the vehicle warranty.

### Caution

Modifications to the engine, transmission, exhaust, intake, or fuel system, or the use of replacement tires that do not meet the original tire specifications, can cause this light to come on. This could lead to costly repairs not covered by the vehicle warranty. This could also affect the vehicle's ability to pass an Emissions Inspection/Maintenance test. See *Accessories and Modifications* ⇨ 232.

**If the light is flashing :** A malfunction has been detected that could damage the emission control system and increase vehicle emissions. Diagnosis and service may be required.

To help prevent damage, reduce vehicle speed and avoid hard accelerations and uphill grades. If towing a trailer, reduce the amount of cargo being hauled as soon as possible.

If the light continues to flash, find a safe place to park. Turn the vehicle off and wait at least 10 seconds before restarting the engine. If the light is still flashing, follow the previous guidelines and see your dealer for service as soon as possible.

**If the light is on steady :** A malfunction has been detected. Diagnosis and service may be required.

Check the following:

- If fuel has been added to the vehicle using the capless fuel funnel adapter, make sure that it has been removed. See "Filling the Tank with a Portable Gas Can" under *Filling the Tank* ⇨ 228. The diagnostic system can detect if the adapter has been left installed in the vehicle, allowing fuel to evaporate into the atmosphere. A few driving trips with the adapter removed may turn off the light.
- Poor fuel quality can cause inefficient engine operation and poor driveability, which may go away once the engine is

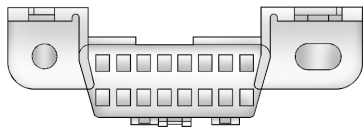
## 100 Instruments and Controls

warmed up. If this occurs, change the fuel brand. It may require at least one full tank of the proper fuel to turn the light off. See *Recommended Fuel* ⇨ 227.

If the light remains on, see your dealer.

### Emissions Inspection and Maintenance Programs

If the vehicle requires an Emissions Inspection/Maintenance test, the test equipment will likely connect to the vehicle's Data Link Connector (DLC).



The DLC is under the instrument panel to the left of the steering wheel. Connecting devices that are not used to perform an Emissions Inspection/Maintenance test or to service the vehicle may affect vehicle operation. See *Add-On Electrical Equipment* ⇨ 230. See your dealer if assistance is needed.

The vehicle may not pass inspection if:

- The light is on when the engine is running.
- The light does not come on when the ignition is in Service Mode.
- Critical emission control systems have not been completely diagnosed. If this happens, the vehicle would not be ready for inspection and might require several days of routine driving before the system is ready for inspection. This can happen if the 12-volt battery has recently been replaced or run down, or if the vehicle has been recently serviced.

See your dealer if the vehicle will not pass or cannot be made ready for the test.

### Brake System Warning Light



This light comes on briefly when the vehicle is turned on to show that the light is working. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

If the light comes on and stays on, there is a brake problem. Have the brake system inspected right away. This light may come on if the brake fluid is low. See *Brake Fluid* ⇨ 244.

If the light comes on while driving, pull off the road and stop carefully. The brake system has electric brake boost. Vehicle speed may be limited when the brake system warning light comes on. The brake pedal might be harder to push, or the brake pedal may go closer to the floor. It could take longer to stop. If the light is still on, have the vehicle towed for service. See *Transporting a Disabled Vehicle* ⇨ 280.

#### Warning

The brake system might not be working properly if the brake system warning light is on. Driving with the brake system warning light on can lead to a crash. If the light is still on after the vehicle has been pulled off the road and carefully stopped, have the vehicle towed for service.

## Electric Parking Brake Light



This light comes on when the parking brake is applied. If the light continues flashing after the parking brake is released, or while driving, there is a problem with the Electric Parking Brake system. A message may also display in the Driver Information Center (DIC).

If the light does not come on, or remains flashing, see your dealer.

## Service Electric Parking Brake Light



This light should come on briefly when the vehicle is turned on. If it does not come on, have it fixed so it will be ready to warn if there is a problem.

If this light stays on or comes on while driving, there is a problem with the Electric Parking Brake (EPB). Take the vehicle to a dealer as soon as possible. In addition to the parking brake, other safety functions that utilize the EPB may also be degraded. A message may also display in the Driver Information Center (DIC). See *Electric Parking Brake* ⇨ 194.

## Antilock Brake System (ABS) Warning Light



This light comes on briefly when the vehicle is turned on to show that the light is working. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

If the ABS warning light stays on, or comes on again while driving, the vehicle needs service. A chime may also sound when the light stays on.

If the ABS warning light is the only light on, the vehicle has regular brakes, but ABS is not functioning.

If both the ABS warning light and the brake system warning light are on, ABS is not functioning and there is a problem with the regular brakes. See your dealer for service.

See *Brake System Warning Light* ⇨ 100.

## Gear Shifting Light



If equipped, this light comes on when a gear shift is recommended for best fuel economy. When the arrow is pointed up, an upshift is recommended. When the arrow is pointed down, a downshift is recommended. The number displayed with the arrow indicates the recommended gear.

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### Performance Shifting Light



If equipped, this light may display green when Sport Mode is activated and certain driving conditions are met. Sport Mode detects when the vehicle is being driven in a sporty manner, and adjusts the shifting of the gears accordingly. See *Driver Mode Control* ⇨ 197.

### All-Wheel-Drive Light



All-Wheel-Drive Light



Front-Wheel-Drive  
Light

If equipped, the corresponding light comes on when an All-Wheel Drive (AWD) mode or Front-Wheel-Drive mode is selected. See *Driver Mode Control* ⇨ 197.

If the light turns amber, there may be a malfunction. See your dealer.

### Lane Keep Assist (LKA) Light



If equipped, the Lane Keep Assist Light may display the following colors:

- Blank: LKA is disabled.
- White: Appears when the vehicle starts. A steady white light indicates that LKA is not ready to assist.
- Green: Appears when LKA is turned on and ready to assist. LKA will gently turn the steering wheel if the vehicle approaches a detected lane marking.
- Amber: Appears when LKA is active. The light flashes amber as a Lane Departure Warning (LDW) alert to indicate that the lane marking has been unintentionally crossed. If the system detects you are steering intentionally (to pass or change lanes), the LDW alert may not display.

LKA will not assist or alert if the turn signal is active in the direction of lane departure, or if LKA detects that you are accelerating, braking, or actively steering. See *Lane Keep Assist (LKA)* ⇨ 225.

### Vehicle Ahead Indicator



If equipped, this indicator will display green when a vehicle is detected ahead and amber when you are following a vehicle ahead much too closely.

See *Forward Collision Alert (FCA) System* ⇨ 218.

### Pedestrian Ahead Indicator



If equipped, this indicator will display amber when a nearby pedestrian is detected in front of the vehicle.

See *Front Pedestrian Braking (FPB) System*  
⇒ 222.

### Traction Off Light



This light comes on briefly when the vehicle is turned on to show that the light is working. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

The traction off light comes on when the Traction Control System (TCS) has been turned off. If StabiliTrak/Electronic Stability Control (ESC) is turned off, TCS is also turned off. To turn TCS and ESC off and on, see *Traction Control/Electronic Stability Control* ⇒ 196.

If TCS is off, wheel slip during acceleration is not limited unless necessary to help protect the driveline from damage. Adjust driving accordingly.

### StabiliTrak OFF Light



This light comes on briefly when the vehicle is turned on to show that the light is working. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

This light comes on when the StabiliTrak/Electronic Stability Control (ESC) system is turned off. If StabiliTrak/ESC is off, the Traction Control System (TCS) is also off. To turn ESC off and on, see *Traction Control/Electronic Stability Control* ⇒ 196.

If ESC and TCS are off, the systems do not assist in controlling the vehicle. Adjust driving accordingly.

### Traction Control System (TCS)/ StabiliTrak Light



This light comes on briefly when the vehicle is turned on to show that the light is working. If it does not come on then, have it fixed so it will be ready to warn you if there is a problem.

If the light is on and not flashing, the TCS and potentially the StabiliTrak/ESC system are not fully operational and may not assist in maintaining control. Adjust driving accordingly. If the condition persists, see your dealer as soon as possible. A Driver Information Center (DIC) message may display.

The light flashes when the TCS and/or the StabiliTrak/ESC system is actively working.

See *Traction Control/Electronic Stability Control* ⇒ 196.

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### Engine Coolant Temperature Warning Light (Uplevel)



This light comes on briefly while starting the vehicle.

If it does not, have the vehicle serviced by your dealer. If the system is working normally the indicator light goes off.

#### Caution

The engine coolant temperature warning light indicates that the vehicle has overheated. Driving with this light on can damage the engine and it may not be covered by the vehicle warranty. See *Engine Overheating* ⇨ 242.

The engine coolant temperature warning light comes on when the engine has overheated.

If this happens, pull over and turn off the engine as soon as possible. See *Engine Overheating* ⇨ 242.

### Driver Mode Control Light



This light comes on when Sport Mode is selected.



This light comes on when Snow/Ice Mode is selected.



This light comes on when Off-Road Mode is selected.

See *Driver Mode Control* ⇨ 197.

### Tire Pressure Light



If equipped with the Tire Pressure Monitor System (TPMS), this light comes on briefly when the vehicle is started. It provides information about tire pressures and the TPMS.

#### When the Light Is On Steady

This indicates that one or more of the tires are significantly underinflated.

A Driver Information Center (DIC) tire pressure message may also display. Stop as soon as possible, and inflate the tires to the pressure value shown on the Tire and Loading Information label. See *Tire Pressure* ⇨ 261.

### 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 every time the vehicle is started. See *Tire Pressure Monitor Operation* ⇨ 264.

### Engine Oil Pressure Light

#### Caution

Driving the vehicle with low engine oil pressure can damage the engine and the repairs would not be covered by the vehicle warranty.

If the engine oil pressure light comes on while driving:

1. Stop in a safe location and turn off the engine.
2. Check the oil level. See *Engine Oil* ⇨ 235.
3. Add oil if the oil level is below the normal operating range.

(Continued)

#### Caution (Continued)

4. Restart the vehicle. If the engine oil pressure light stays on for more than 10 seconds, turn the vehicle back off. Do not restart the vehicle. See your dealer for service.



This light should come on briefly when the engine starts. When the engine is off and the vehicle is on, the light should remain illuminated. If it does not come on under either condition, contact your dealer.

If the light comes on and stays on when the engine is running, it may not have adequate oil pressure. The oil level may be low or there may be some other oil system problem. Turn the engine off when it is safe to do so and contact your dealer.

### Low Fuel Warning Light



A Low Fuel Warning Light near the fuel gauge comes on briefly when the ignition is turned on as a check to show it is working.

It also comes on when the fuel gauge indicator nears empty. The light turns off when fuel is added. If it does not, have the vehicle serviced.

### Security Light



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

## 106 Instruments and Controls

If the light stays on and the engine does not start, there could be a problem with the theft-deterrent system. See *Immobilizer Operation* ⇨ 24.

### High-Beam On Light



This light comes on when the high-beam headlamps are in use. See *Headlamp High/Low-Beam Changer* ⇨ 117.

### IntelliBeam Light



This light comes on when the IntelliBeam system, if equipped, is enabled. See *Exterior Lamp Controls* ⇨ 116.

### Lamps On Reminder



This light comes on when the exterior lamps are in use, except when only the Daytime Running Lamps (DRL) are active. See *Exterior Lamp Controls* ⇨ 116.

### Cruise Control Light



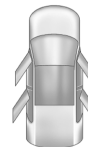
The cruise control light is white when the cruise control is on and ready, and turns green when the cruise control is set and active. See *Cruise Control* ⇨ 198.

### Adaptive Cruise Control Light



This light comes on when Adaptive Cruise Control (if equipped) is active. See *Adaptive Cruise Control (Advanced)* ⇨ 200.

### Door Ajar Light

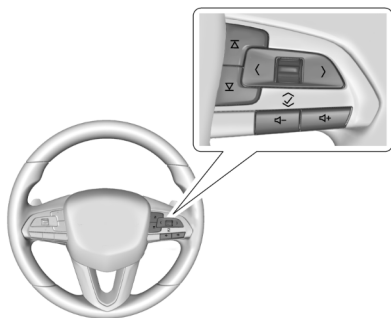


This light comes on when a door is open or not securely latched. Before driving, check that all doors are properly closed.

## Information Displays

### Driver Information Center (DIC)

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



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

**^ or v** : Use the thumbwheel to scroll to the previous or next selection.

**✓** : Press the thumbwheel to open a menu or select a menu item. Press and hold to reset values on certain screens.

### Info Page Options

The info displays on the DIC can be turned on or off through the Options menu.


1. Press **>** to scroll to the Options menu. Use the thumbwheel to scroll to Info Pages and press the thumbwheel to select.


2. Scroll **^** or **v** to move through the list of possible info displays.
3. Press the thumbwheel while an item is highlighted to select or deselect that item.

The info pages can also be turned on or off through the DIC page Info Page Options.

### DIC Information Displays

The following is the list of all possible DIC information displays. Some of the information displays may not be available for your particular vehicle.

While in the Info Page Options menu, the info pages can be restored to the default factory settings by pressing and holding  on the left steering wheel controls and the thumbwheel on the right steering wheel controls at the same time.

For uplevel clusters, this will also reset the Display settings. See *Instrument Cluster*  93.

**Speed** : Shows the vehicle speed in either kilometers per hour (km/h) or miles per hour (mph).

### Trip 1 or Trip 2 and Average Fuel

**Economy** : The Trip display shows the current distance traveled, in either kilometers (km) or miles (mi), since the trip odometer was last reset. The trip odometer can be reset by pressing **✓** and selecting yes or no while this display is active.

Shows the approximate average kilometers per liter (km/L) or miles per gallon (mpg). This number is calculated based on the number of km/L 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 **✓** and selecting yes or no while this display is active.

**Fuel Range** : Shows the approximate distance the vehicle can be driven without refueling. LOW will be displayed when the vehicle is low on fuel. The fuel range estimate is based on an average of the vehicle's fuel economy over recent driving history and the amount of fuel remaining in the fuel tank.

## 108 Instruments and Controls

**Oil Life** : Shows an estimate of the oil's remaining useful life. If REMAINING OIL LIFE 99% is displayed, that means 99% of the current oil life remains.

When the remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. The oil should be changed as soon as possible. See *Engine Oil* ⇨ 235. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended. See *Maintenance Schedule* ⇨ 291.

The Oil Life display must be reset after each oil change. It will not reset itself. Do not reset the Oil Life display accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, press ✓ and then select yes or no. See *Engine Oil Life System* ⇨ 237.

**Tire Pressure** : Shows the approximate pressures of all four tires. Tire pressure is displayed in either kilopascal (kPa) or in pounds per square inch (psi). If the pressure is low, the value for that tire is shown in amber. See *Tire Pressure Monitor System* ⇨ 263 and *Tire Pressure Monitor Operation* ⇨ 264.

**Air Filter Life** : Shows an estimate of the engine air filter's remaining useful life and the state of the system. Engine Air Filter Life 95% means 95% of the current air filter life remains. Messages will display based on the engine air filter life and the state of the system. When the REPLACE AT NEXT OIL CHANGE message displays, the engine air filter should be replaced at the time of the next oil change. When the REPLACE SOON message displays, the engine air filter should be replaced at the earliest convenience.

The Air Filter Life display must be reset after the engine air filter replacement. To reset, see *Engine Air Filter Life System* ⇨ 238.

**Fuel Economy** : Displays average fuel economy, the best fuel economy over the selected distance, and a bar graph showing instantaneous fuel economy.

**Average Speed** : Displays the average vehicle speed of the vehicle in kilometers per hour (km/h) or miles per hour (mph). This average is based on the various vehicle speeds recorded since the last reset. Reset the average speed by pressing the thumbwheel while this display is active to show a confirmation window to select yes or no.

**Speed Sign** : Shows sign information, which comes from a roadway database in the onboard navigation, if equipped.

Speed limit signs in your vehicle display may vary from actual road speed depending on the version of your current navigation map.

**Timer** : This display can be used as a timer. To start the timer, press the thumbwheel while this display is active. The display will show the amount of time that has passed since the timer was last reset. To stop the timer, press the thumbwheel briefly while this display is active and the timer is running.

Press the thumbwheel while this display is active to reset the timer.

**Follow Distance/Gap Setting** : When Adaptive Cruise Control (ACC) is not engaged, the current follow time to the vehicle ahead is displayed as a time value on this page. When ACC has been engaged, the display switches to the gap setting page. This page shows the current gap setting along with the vehicle ahead telltale.

**Driver Assistance** : If equipped, shows information for Lane Keep Assist (LKA) and Forward Collision Alert (FCA).

**Battery Voltage** : Shows the current battery voltage.

**Coolant Temperature** : Shows the engine coolant temperature in either degrees Celsius (°C) or degrees Fahrenheit (°F).

**Oil Temperature** : Shows the engine oil temperature in either degrees Celsius (°C) or degrees Fahrenheit (°F).

**Engine Boost** : Displays engine manifold pressure relative to ambient air pressure. It will display boost pressure generated by the turbocharging system.

**Transmission Fluid Temperature** : Shows the temperature of the automatic transmission fluid in either degrees Celsius (°C) or degrees Fahrenheit (°F).

**Info Page Options** : Scroll to choose which info pages appear on the DIC. Press the thumbwheel to select or deselect.

**Blank Page** : Allows for no information to be displayed in the cluster info display areas.

## Head-Up Display (HUD)

### Warning

If the HUD image is too bright or too high in your field of view, it may take you more time to see things you need to see when it is dark outside. Be sure to keep the HUD image dim and placed low in your field of view.

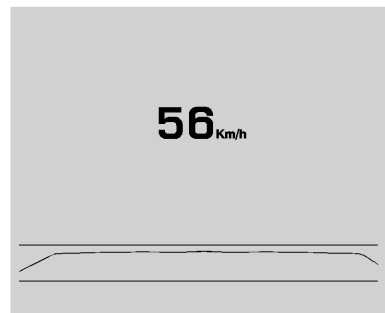
If equipped with HUD, some information concerning the operation of the vehicle is projected onto the windshield. The image is projected through the HUD lens on top of the instrument panel. The information appears as an image focused out toward the front of the vehicle.

### Caution

If you try to use the HUD image as a parking aid, you may misjudge the distance and damage your vehicle. Do not use the HUD image as a parking aid.

The HUD information can be displayed in various languages in some vehicles. The speedometer reading and other numerical values can be displayed in either English or metric units.

The language selection is changed through the radio and the units of measurement are changed through the instrument cluster. See *Settings* ⇨ 155 and “Options” under *Instrument Cluster* ⇨ 93.



### HUD Display on the Windshield

The HUD may display some of the following vehicle information and vehicle messages or alerts:

- Speed
- Audio
- Phone
- Navigation
- Performance
- Driver Assistance Features

## 110 Instruments and Controls

### • Vehicle Messages

Some vehicle messages or alerts displayed in the HUD may be cleared by using the steering wheel controls. See *Vehicle Messages* ⇨ 111.

Some information shown may not be available on your vehicle if it is not equipped with these features.



The HUD control is to the left of the steering wheel.

To adjust the HUD image:

1. Adjust the driver seat.
2. Start the engine.
3. Use the following settings to adjust the HUD.

**HUD** : Press or lift to center the HUD image. The HUD image can only be adjusted up and down, not side to side.

**INFO** : Press to select the display view. Each press will change the display view.

**±☀** : Lift and hold to brighten the display. Press and hold to dim the display. Continue to hold to turn the display off.

The HUD image will automatically dim and brighten to compensate for outside lighting. The HUD brightness control can also be adjusted as needed.

The HUD image can temporarily light up depending on the angle and position of sunlight on the HUD display. This is normal.

Polarized sunglasses could make the HUD image harder to see.

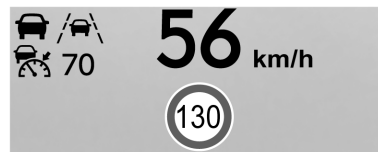
### Head-Up Display (HUD) Rotation Option

This feature allows the angle of the HUD image to be adjusted.

Press the thumbwheel while Adjust Rotation is highlighted to enter Adjust Mode. Scroll to adjust the angle of the HUD display. Press the thumbwheel to confirm and save the setting. This feature may only be available in P (Park). See *Instrument Cluster* ⇨ 93.

### HUD Views

There are four views in the HUD. Some vehicle information and vehicle messages or alerts may be displayed in any view.



**Speed View** : This displays digital speed in English or metric units, speed limit, and indicators such as vehicle ahead, Lane Departure Warning/Lane Keep Assist, and Adaptive Cruise Control and set speed. Some information only appears on vehicles that have these features, and when they are active.

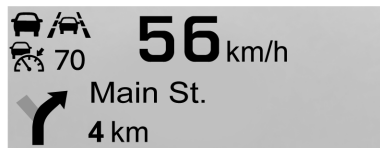
The speed limit sign can be disabled in the HUD settings under Options in the Cluster Menu. See *Instrument Cluster* ⇨ 93.



**Audio/Phone View** : This displays digital speed, indicators from speed view along with audio/phone information. The current radio station, media type, and incoming calls will be displayed.

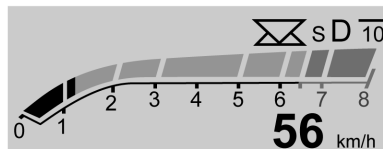
All HUD views may briefly display audio information when the steering wheel controls are used to adjust the audio settings appearing in the instrument cluster.

Incoming phone calls appearing in the instrument cluster may also display in any HUD view.



**Navigation View** : This displays digital speed, indicators from speed view along with Turn-by-Turn Navigation information in some vehicles. The compass heading is displayed when navigation routing is not active.

Navigation Turn-by-Turn Alerts shown in the instrument cluster may also be displayed in any HUD view.



**Performance View** : This displays digital speed, indicators from speed view along with rpm reading, transmission positions, and gear shift indicator (if equipped).

### Care of the HUD

Clean the inside of the windshield to remove any dirt or film that could reduce the sharpness or clarity of the HUD image.

Clean the HUD lens with a soft cloth sprayed with glass cleaner. Wipe the lens gently, then dry it.

### HUD Troubleshooting

If you cannot see the HUD image when the ignition is on, check that:

- Nothing is covering the HUD lens.
- The HUD brightness setting is not too dim or too bright.
- The HUD is adjusted to the proper height.
- Polarized sunglasses are not worn.
- The windshield and HUD lens are clean.

If the HUD image is not correct, contact your dealer.

The windshield is part of the HUD system. See *Windshield Replacement* ⇨ 248.

## Vehicle Messages

Messages displayed on the Driver Information Center (DIC) indicate the status of the vehicle or some action that may be needed to correct a condition. Multiple messages may appear one after another.

The messages that do not require immediate action can be acknowledged and cleared by pressing the thumbwheel. The messages that require immediate action cannot be cleared until that action is performed.

All messages should be taken seriously; clearing the message does not correct the problem.

If a SERVICE message appears, see your dealer.

Follow the instructions given in the messages. The system displays messages regarding the following topics:

- Service Messages
- Fluid Levels

## 112 Instruments and Controls

- Vehicle Security
- Brakes
- Steering
- Ride Control Systems
- Driver Assistance Systems
- Cruise Control
- Lighting and Bulb Replacement
- Wiper/Washer Systems
- Doors and Windows
- Seat Belts
- Airbag Systems
- Engine and Transmission
- Tire Pressure
- Battery

### Engine Power Messages

#### ENGINE POWER IS REDUCED

This message displays when the vehicle's propulsion power is reduced. A reduction in propulsion power can affect the vehicle's ability to accelerate. If this message is on, but there is no observed reduction in performance, proceed to your destination. Under certain conditions the performance may be reduced the next time the vehicle is driven. The vehicle may be driven while this message is on, but maximum acceleration

and speed may be reduced. Anytime this message stays on, or displays repeatedly, the vehicle should be taken to your dealer for service as soon as possible.

Under certain operating conditions, propulsion will be disabled. Try restarting after the ignition has been off for 30 seconds.

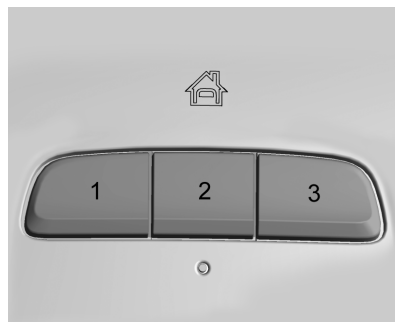
### Vehicle Speed Messages

#### SPEED LIMITED TO XXX KM/H (MPH)

This message shows that the vehicle speed has been limited to the speed displayed. The limited speed is a protection for various propulsion and vehicle systems, such as lubrication, thermal, brakes, suspension, Teen Driver if equipped, or tires.

## Universal Remote System

### Universal Remote System Programming



If equipped, these buttons are in the overhead console.

This system can replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home automation devices. These instructions refer to a garage door opener, but can be used for other devices.

Do not use the Universal Remote system with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1, 1982.

Keep the original hand-held transmitter for use in other vehicles as well as for future programming. Erase the programming when vehicle ownership is terminated. See “Erasing Universal Remote System Buttons” later in this section.

To program a garage door opener, park outside directly in line with and facing the garage door opener receiver. Clear all people and objects near the garage door.

Make sure the hand-held transmitter has a new battery for quick and accurate transmission of the radio-frequency signal.

### **Programming the Universal Remote System**

Programming involves time-sensitive actions, and may time out causing the procedure to be repeated. Read these instructions completely before programming the Universal Remote system. It may help to have another person assist with the programming process.

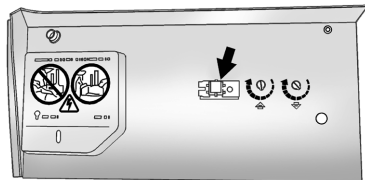
To program up to three devices:

1. Hold the end of the hand-held transmitter about 3 to 8 cm (1 to 3 in) away from the Universal Remote system buttons with the indicator light in view. The hand-held transmitter was supplied by the manufacturer of the garage door opener receiver.
2. Press and release one of the three Universal Remote system buttons to be programmed. Press and hold the hand-held transmitter button. Do not release the hand-held transmitter button until the indicator light changes from a slow to a rapid flash or continuous light. Then release the hand-held transmitter button.

Some garage door openers may require substitution of Step 2 with the procedure under “Radio Signals for Some Gate Operators” later in this section.

3. Press and hold the newly programmed Universal Remote system button for five seconds while watching the indicator light and garage door activation.
  - If the indicator light stays on continuously or the garage door moves when the button is pressed, then programming is complete. There is no need to complete Steps 4–6.
  - If the indicator light does not come on or the garage door does not move, a second button press may be required. For a second time, press and hold the newly programmed button for five seconds. If the indicator light is continuously lit, or the garage door moves, programming is complete.
  - If the indicator light flashes rapidly and the garage door does not move, continue with programming Steps 4–6.
  - If the garage door does not move, continue with programming Steps 4–6.

## 114 Instruments and Controls



### Learn or Smart Button

4. After completing Steps 1–3, locate the Learn or Smart button inside garage on the garage door opener receiver. The name and color of the button may vary by manufacturer.
5. Press and release the Learn or Smart button. Step 6 must be completed within 30 seconds of pressing this button.
6. Return to the vehicle and firmly press and hold the trained Universal Remote system button for two seconds and release. Repeat the “press/hold/release” sequence up to three times to complete the training process.

The Universal Remote system should now activate the garage door. Repeat the process for programming the two remaining buttons.

For questions with programming help, see [www.homelink.com/gm](http://www.homelink.com/gm) or call 1-800-355-3515. For calls placed outside the U.S., Canada, or Puerto Rico, international rates will apply and may differ based on landline or mobile phone.

### Radio Signals for Some Gate Operators

Some gate operators and radio-frequency laws require transmitter signals to time out or quit after several seconds of transmission. This may not be long enough for the Universal Remote system to pick up the signal during programming.

If the programming did not work, replace Step 2 under “Programming the Universal Remote System” with the following:

Press and hold the Universal Remote system button while pressing and releasing the hand-held transmitter button every two seconds until the signal has been successfully accepted by the Universal Remote system. The Universal Remote system indicator light will flash slowly at first and then change to a rapid flash or continuous solid-light. Proceed with Step 3 under “Programming the Universal Remote System” to complete.

## Universal Remote System Operation

### Using the Universal Remote System

Press and hold the appropriate Universal Remote system button for at least one-half second. The indicator light will come on while the signal is being transmitted.

### Erasing Universal Remote System Buttons

Erase all programmed buttons when vehicle ownership is terminated.

To erase:

1. Press and hold the two outside buttons until the indicator light begins to flash. This should take about 10 seconds.
2. Release both buttons.

### Reprogramming a Single Universal Remote System Button

To reprogram any of the system buttons:

1. Press and hold any one of the buttons. Do not release the button.

2. The indicator light will begin to flash after 20 seconds. Without releasing the button, proceed with Step 1 under “Programming the Universal Remote System.”

## 116 Lighting

### Lighting

#### Exterior Lighting

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### Exterior Lighting

#### Exterior Lamp Controls



The exterior lamp control is on the turn signal lever.

Turn the control to the following positions:

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

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

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

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

#### IntelliBeam System

If equipped, this system turns the vehicle's high-beam headlamps on and off according to surrounding traffic conditions.

The system turns the high-beam headlamps on when it is dark enough and there is no other traffic present.

This light comes on in the instrument cluster when the IntelliBeam system is enabled.

#### Turning On and Enabling IntelliBeam



To enable the IntelliBeam system, press the button on the end of the turn signal lever when the exterior lamp control is in the AUTO or position.


### Driving with IntelliBeam

The system only activates the high beams when driving over 40 km/h (25 mph).

The blue high-beam on light appears on the instrument cluster when the high beams are on.

There is a sensor near the top center of the windshield that automatically controls the system. Keep this area of the windshield clear of debris to allow for best system performance.

The high-beam headlamps remain on, under the automatic control, until one of the following situations occurs:

- The system detects an approaching vehicle's headlamps.
- The system detects a preceding vehicle's taillamps.
- The outside light is bright enough that high-beam headlamps are not required.
- The vehicle's speed drops below 20 km/h (12 mph).
- The IntelliBeam system is disabled by the button on the turn signal lever. If this happens, press the button on the end of the turn signal lever when the exterior lamp control is in the AUTO or 

position to reactivate the IntelliBeam system. The instrument cluster light will come on to indicate the IntelliBeam is reactivated.

The high beams may not turn off automatically if the system cannot detect another vehicle's lamps because of any of the following:


- The other vehicle's lamps are missing, damaged, obstructed from view, or otherwise undetected.
- The other vehicle's lamps are covered with dirt, snow, and/or road spray.
- The other vehicle's lamps cannot be detected due to dense exhaust, smoke, fog, snow, road spray, mist, or other airborne obstructions.
- The vehicle's windshield is dirty, cracked, or obstructed by something that blocks the view of the light sensor.
- The vehicle is loaded such that the front end points upward, causing the light sensor to aim high and not detect headlamps and taillamps.
- Driving on winding or hilly roads.

The automatic high-beam headlamps may need to be disabled if any of the above conditions exist.

### Exterior Lamps Off Reminder

A warning chime sounds if the driver door is opened while the ignition is off and the exterior lamps are on.

### Headlamp High/Low-Beam Changer

 : Push the turn signal lever away from you and release, to turn the high beams on. To return to low beams, push the lever again or pull it toward you and release.



This indicator light turns on in the instrument cluster when the high-beam headlamps are on.

### Flash-to-Pass

To flash the high beams, pull the turn signal lever toward you, and release.

## 118 Lighting


### Daytime Running Lamps (DRL)

DRL can make it easier for others to see the front of your vehicle during the day.

The dedicated DRL will come on when all of the following conditions are met:

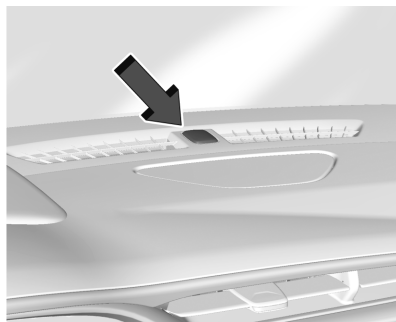
- The ignition is on.
- The exterior lamp control is in AUTO.
- The light sensor determines it is daytime.
- The parking brake is released or the vehicle is not in park.

When the DRL are on, the taillamps and other lamps will not be on.

The DRL turn off when the headlamps are turned to  or the ignition is off.

### Automatic Headlamp System

When the exterior lamp control is set to AUTO and it is dark enough outside, the headlamps come on automatically.




There is a light sensor on top of the instrument panel. Do not cover the sensor.



The system may also turn on the headlamps when driving through a parking garage or tunnel.

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 Daytime Running Lamps (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* ⇨ 120.

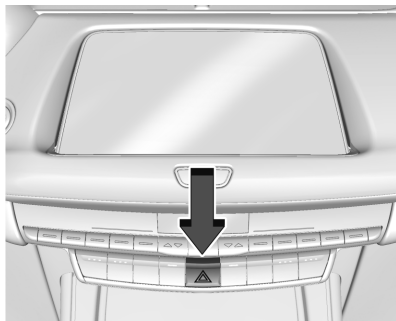
When it is bright enough outside, the headlamps will turn off or may change to DRL.



The automatic headlamp system turns off when the exterior lamp control is turned to  or the ignition is off.

### Lights On with Wipers

If the windshield wipers are activated in daylight with the engine on, and the exterior lamp control is in AUTO, the headlamps, parking lamps, and other exterior lamps come on. The transition time for the lamps coming on varies based on wiper speed. When the wipers are not operating, these lamps turn off. Move the exterior lamp control to  or  to disable this feature.

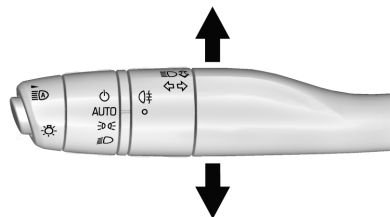
## Hazard Warning Flashers



 : Press  to make the front and rear turn signal lamps flash on and off. Press again to turn the flashers off.

The hazard warning flashers turn on automatically if the airbags deploy.

## Turn and Lane-Change Signals



Move the lever all the way up or down to signal a turn.

An arrow on the instrument cluster flashes in the direction of the turn or lane change.

Raise or lower the lever until the arrow starts to flash to signal a lane change. Hold it there until the lane change is completed. If the lever is briefly pressed and released, the turn signal flashes three times.

The turn and lane-change signal can be turned off manually by moving the lever back to its original position.

If after signaling a turn or lane change, the arrow flashes rapidly or does not come on, a signal bulb may be burned out.

Replace any burned out bulbs. If a bulb is not burned out, check the fuse. See *Fuses and Circuit Breakers* ⇨ 252.

## Cornering Lamps

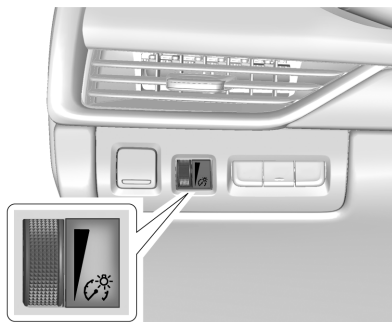
If equipped with cornering lamps, they automatically come on when all of the following occur:

- The low-beam headlamps are on.
- The turn signals are activated or the steering wheel is at a turning angle.
- The vehicle speed is below 40 km/h (25 mph).

## 120 Lighting

### Interior Lighting

#### Instrument Panel Illumination Control



This feature adjusts the brightness of all illuminated controls. This feature is on the left side of the instrument panel.

: Move the thumbwheel up or down to brighten or dim the lights.

The thumbwheel is functional at night, or when the headlamps or parking lamps are on.

#### Courtesy Lamps

The courtesy lamps come on when any door is opened, on the remote key is pressed, or when the vehicle is turned off. See *Dome Lamps* ⇨ 120.

#### Dome Lamps



The dome lamp controls are in the overhead console.

To operate, press the following buttons:

**OFF** : Press to turn off the dome lamps when any door is opened, on the remote key is pressed, or when the vehicle is turned off. An indicator light on the button will turn on when the dome lamp

override is activated. Press **OFF** again to deactivate this feature and the indicator light will turn off.

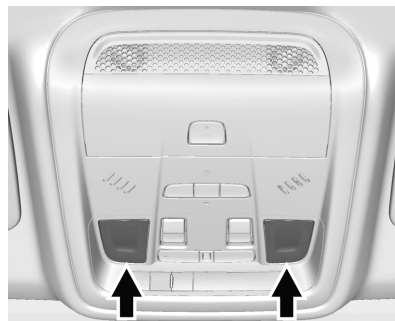
**ON/OFF** : Press to turn the dome lamps on or off manually.

#### Reading Lamps

There are reading lamps on the overhead console and over the rear seats. These lamps come on automatically when any door is opened.

##### Front Reading Lamps

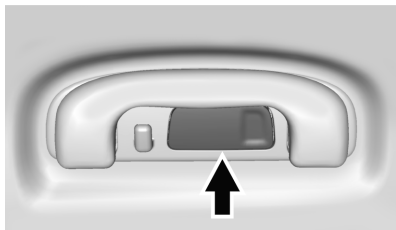
The front reading lamps are in the overhead console.



Press the lamp lenses to turn the front reading lamps on or off.

### Rear Reading Lamps


The rear reading lamps are over the rear seats.




Press the lamp lens to turn the rear reading lamps on or off.


## Lighting Features

### Entry Lighting

The interior lamps turn on when pressing  on the remote key or opening any doors, and the dome lamp control is in the door position.

Some exterior lamps also turn on when pressing  on the remote key or opening any doors. Low-Beam lamps will only turn on briefly at night, or in areas with limited lighting.

All lamps will gradually fade out after about 30 seconds.

Entry lighting can be disabled manually by closing all doors, pressing  on the remote key, or starting the vehicle.

This feature can be changed. On the infotainment home page, select the Settings icon > Vehicle > Vehicle Locator Lights.

### Exit Lighting

Some exterior lamps and interior lamps turn on when the driver door is opened after the vehicle is turned off.

The exterior and interior lamps remain on for a set amount of time, then automatically turn off.

The interior lights turn on when the vehicle is turned off.

The exterior lamps turn off immediately by turning the exterior lamp control off.




This feature can be changed. On the infotainment home screen, select the Settings icon > Vehicle > Exit Lighting.

### Battery Power Protection

This feature helps prevent the battery from being drained, if the interior courtesy lamps or reading lamps are accidentally left on. If any of these lamps are left on, they automatically turn off after 10 minutes, if the ignition is off. The lamps will not come back on again until one of the following occurs:

- The ignition is turned on.
- The doors are closed and then re-opened.

### Exterior Lighting Battery Saver

The exterior lamps turn off about 10 minutes after the vehicle is turned off, if the parking lamps or headlamps have been manually left on. This protects against draining the battery. To restart the 10-minute timer, turn the exterior lamp control to the  position and then back to the  or  position.

To keep the lamps on for more than 10 minutes, the vehicle must be on or in accessory mode.

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# Infotainment System

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## Introduction

Read the following pages to become familiar with the features.

### Warning

Taking your eyes off the road for too long or too often while using any infotainment feature can cause a crash. You or others could be injured or killed. Do not give extended attention to infotainment tasks while driving. Limit your glances at the vehicle displays and focus your attention on driving. Use voice commands whenever possible.

The infotainment system has built-in features intended to help avoid distraction by disabling some features when driving. These features may gray out when they are unavailable. Many infotainment features are also available through the instrument cluster and steering wheel controls.

Before driving:

- Become familiar with the operation, center stack controls, steering wheel controls, and infotainment display.

- Set up the audio by presetting favorite stations, setting the tone, and adjusting the speakers.
- Set up phone numbers in advance so they can be called easily by pressing a single control or by using a single voice command.

See *Distracted Driving* ⇨ 170.

### Active Noise Cancellation (ANC)

If equipped, ANC reduces engine noise in the vehicle's interior. ANC requires the factory-installed audio system, radio, speakers, amplifier (if equipped), induction system, and exhaust system to work properly. Deactivation is required by your dealer if related aftermarket equipment is installed.

## Overview

### Infotainment System

The infotainment system is controlled by using the infotainment display, controls on the center console, steering wheel controls, and voice recognition.

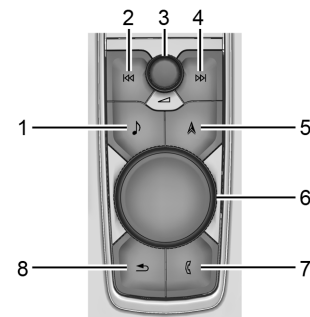


1. (Home Page)

- Press to go to the Home Page. See “Home Page” later in this section.

Press to exit Android Auto or Apple CarPlay. To enter back into Android Auto or Apple CarPlay, press and hold. See *Apple CarPlay and Android Auto* ⇨ 154.



### Infotainment Controls on the Console with Navigation Shown, Radio without Navigation Similar












1. (Radio/AUX)
  - Press to open the “Now Playing” screen.
2. (Seek)
  - Radio: Press and release to go to the previous station or channel. Press and hold to fast seek the next strongest previous station or channel. See *AM-FM Radio* ⇨ 128.
  - USB/Bluetooth: Press to seek to the beginning of the current or previous track. Press and hold to

## 124 Infotainment System

quickly reverse through a track.  
Release to return to playing speed.  
See *USB Port* ⇨ 131 or  
*Bluetooth Audio* ⇨ 133.

3.  (Power/Volume) Knob
  - Press to turn the power on.
  - Press and hold when the system is on to turn the power off and display the time.
  - Press to mute/unmute the system when on.
  - Turn to decrease or increase the volume.
4.  (Seek)
  - Radio: Press and release to go to the next station or channel. Press and hold to fast seek the next strongest station or channel.
  - USB/Bluetooth: Press to seek the next track. Press and hold to fast forward through a track. Release to return to playing speed. See *USB Port* ⇨ 131 or *Bluetooth Audio* ⇨ 133.

5.  (Navigation) or  (Phone)
  - For vehicles with navigation, press  to access the navigation menu.  
For vehicles without navigation, press  to access the phone menu.
6. Primary Knob
  - Turn to highlight a feature. Press to activate the highlighted feature.
  - Move right/left or up/down to change the highlighted area on the display screen.
7.  (Phone) or  (Home Page)
  - For vehicles with navigation, press  to access the phone menu. For vehicles without navigation, press  to access the Home Page. See “Home Page” later in this section.
8.  (Back)
  - Press to return to the previous display in a menu.

### Home Page

The Home Page is where vehicle application icons are accessed. Some applications are disabled when the vehicle is moving.

Swipe left or right across the display to access the pages of icons.

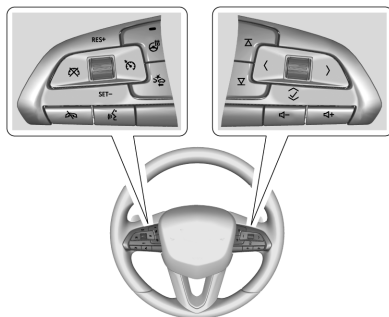
### Managing Home Page Icons


1. Touch and hold any of the Home Page icons to enter edit mode.
2. Continue holding the icon and drag it to the desired position.
3. Release your finger to drop the icon in the desired position.
4. To move an application to another page, drag the icon to the edge of the display toward the desired page.
5. Continue dragging and dropping application icons as desired.


### Steering Wheel Controls



The infotainment steering wheel controls can be used to control the infotainment features displayed in the instrument cluster.




When in Valet Mode, if equipped, access to the infotainment functions is disabled. See “Valet Mode,” under *Settings* ⇨ 155.






 : Press to answer an incoming call or start voice recognition. See *Bluetooth (Pairing and Using a Phone)* ⇨ 151 or *Bluetooth (Overview)* ⇨ 150.



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

 or  : Press to go to the next or previous favorite when listening to the radio. Press to go to the next or previous track when listening to a media source.

 or  : Press to move between the interactive displays in the instrument cluster. Press  to go back to the previous menu.

 or  : Use the thumbwheel to scroll to the previous or next selection.

 : Press the thumbwheel to open a menu or select a menu item. Press and hold to reset certain displays.

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

## Using the System

### Audio

Touch the Audio icon to display the active audio source page. Examples of available sources may include AM, FM, MyMedia, USB, AUX (if equipped), and Bluetooth.

### Phone

Touch the Phone icon to display the Phone main page. See *Bluetooth (Pairing and Using a Phone)* ⇨ 151 or *Bluetooth (Overview)* ⇨ 150.

### Nav

If equipped, touch the Nav icon to display the navigation map. See *Using the Navigation System* ⇨ 134.

### Wi-Fi Hotspot

Touch the Wi-Fi Hotspot icon to display the Wi-Fi Hotspot information. See *Settings* ⇨ 155.

### Users

If equipped, touch the Users icon to sign in or create a new user profile, and follow the on-screen instructions.

Only four user profiles can be active at one time in the vehicle. It may be necessary to remove a profile from the menu before creating or signing into an existing profile. The removed profile can be logged into at a later time.

### Settings

Touch the Settings icon to display the Settings menu. See *Settings* ⇨ 155.

### Apple CarPlay

Touch the Apple CarPlay icon to activate Apple CarPlay, if equipped, after a supported device is connected. See *Apple CarPlay and Android Auto* ⇨ 154.

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### Android Auto

Touch the Android Auto icon to activate Android Auto, if equipped, after a supported device is connected. See *Apple CarPlay and Android Auto* ⇨ 154.

### Climate

Touch the Climate icon to display the Climate main page. See *Dual Automatic Climate Control System* ⇨ 164.

### Camera

If equipped, touch the Camera icon to access the camera application. See *Surround Vision System* ⇨ 211.

### Shortcut Tray

The shortcut tray is near the bottom of the display. It shows up to four applications.

### Infotainment Display Features

Infotainment display features show on the display when available. When a feature is unavailable, it may gray out. When a feature is touched, it may highlight.

### Haptic Feedback

If equipped, haptic feedback is a pulse that occurs when an icon or option is touched on the display or when controls below the display are pressed.

### Infotainment Gestures

Use the following finger gestures to control the infotainment system.

#### Touch/Tap



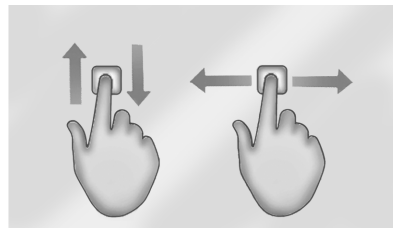
Touch/tap is used to select an icon or option, activate an application, or change the location inside a map.

### Touch and Hold



Touch and hold can be used to start another gesture, or to move or delete an application.

### Drag



Drag is used to move applications on the Home Page, or to pan the map. To drag the item, it must be held and moved along the display to the new location. This can be

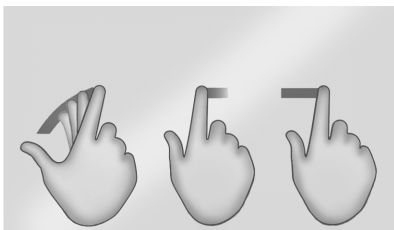
done up, down, right, or left. This feature is only available when vehicle is parked and not in motion.

#### **Nudge**



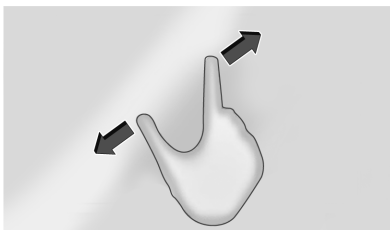
Nudge is used to move items a short distance on a list or a map. To nudge, hold and move the selected item up or down to a new location.

#### **Fling or Swipe**



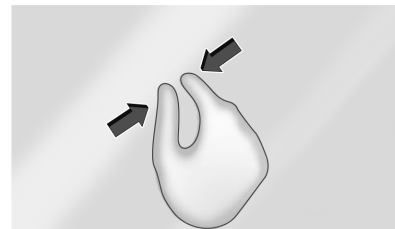
Fling or swipe is used to scroll through a list, pan the map, or change page views. Do this by placing a finger on the display then moving it rapidly up and down or right and left.

#### **Spread**



Spread is used to zoom in on a map, certain images, or a web page. Place finger and thumb together on the display, then move them apart.

#### **Pinch**



Pinch is used to zoom out on a map, certain images, or a web page. Place finger and thumb apart on the display, then move them together.

#### **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.

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### Software Updates


#### Over-the-Air Software Updates

If equipped, see “Updates” under *Settings*  
⇒ 155 for details on software updates.

### Radio

#### AM-FM Radio

##### Playing the Radio

Press  on the console controls or touch the Audio icon on the Home Page to display the active audio source page. Choose from the three most recently used sources listed at the left side of the display or touch the More option to display a list of available sources. Examples of available sources may include AM, FM, DAB (if equipped), MyMedia, USB, AUX (if equipped), and Bluetooth.

##### Infotainment System Sound Menu

From any of the audio source main pages, touch Sound to display the following:

**Equalizer** : Touch to adjust Bass, Midrange, Treble, and Surround (if equipped) using the options on the infotainment display.

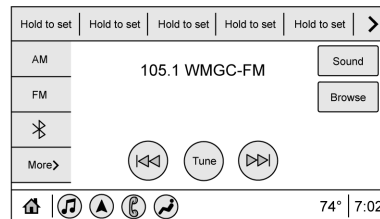
**Fade/Balance** : Touch to adjust by using the controls on the infotainment display or by tapping/dragging the crosshair.



##### Sound Mode (If Equipped)

- Bose Centerpoint surround sound systems have four sound modes:
  - Normal: Adjusts the audio to provide the best sound for all seating positions.
  - Driver: Adjusts the audio to provide the best sound for the driver.
  - Rear: Adjusts the audio to provide the best sound for the rear seat occupants.
  - Centerpoint: Turns on Bose Centerpoint surround technology. This setting creates a surround sound from nearly any audio source: existing stereo and MP3 players. For more information on Bose Centerpoint surround technology, see your dealer.
- AKG surround sound systems have two sound modes:
  - Normal: Adjusts the audio to provide the best sound for all seating positions.
  - Rear: Adjusts the audio to provide the best sound for the rear seat occupants.


### Finding a Station

#### Seeking a Station



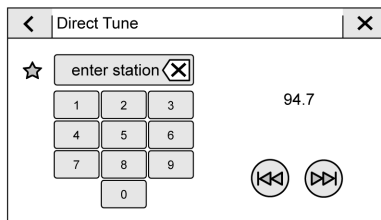
From the AM, FM, or DAB option, press  or  on the center stack to search for the previous or next strong station.

#### Browsing Stations

Touch the Browse option to list all available stations. Navigate up and down through all stations by scrolling the list. Touch the station you want to listen to. Touch  to save the station as a favorite.

If equipped, touch Update Station List to update the active stations in your area.

## Direct Tune



Access Direct Tune by touching the Tune icon on the infotainment display to bring up the keypad. Navigate through all frequencies using the arrows on the right side of the Direct Tune display. Directly enter a station using the keypad. When a new station is entered, the information about that station displays on the right side. This information will update with each new valid frequency. Touch ☆ to save the station as a favorite.

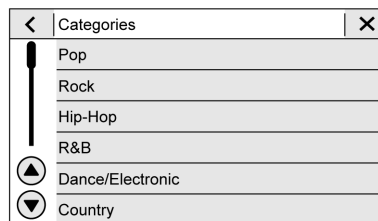
The keypad will gray out entries that do not contribute to a valid frequency and will automatically place a decimal point within the frequency number.

Touch (X) to delete one number at a time. Touch and hold (X) to delete all numbers.

A valid AM, FM, DAB station will automatically tune to the new frequency but not close the Direct Tune display. Touch the Back icon on the infotainment display or touch X to exit out of Direct Tune.

The tune arrows on the right side of the Direct Tune display will tune through the complete station or channel list one station step at a time per touch. A touch and hold advances through stations quickly.

## FM Categories



From the FM display, touch Categories at the top of the Browse menu to access the categories list. The list contains names associated with the FM stations. Touch a category name to display a list of stations for that category. Touching a station from the list will tune the radio to that station.

## Storing Radio Station Presets

Favorites show in the area at the top of the display.

**AM or FM :** Press and hold a preset to store the current station as a favorite. Touch a saved favorite to recall a favorite station.

Favorites can also be stored by touching ☆ in a station list. This will highlight indicating that it is now saved as a favorite.

The number of favorites displayed is automatically adjusted by default, but can be manually adjusted in Settings in the System tab under Favorites and then Set Number of Audio Favorites. It can also be adjusted in Settings in the Apps tab under Audio and then Set Number of Audio Favorites.

## Radio Data System (RDS)

RDS relies on receiving specific RDS information from radio stations and only works when the information is available. It is possible that a radio station could broadcast information that causes the radio to work improperly.

## 130 Infotainment System

In addition, RDS features are region and country of sale specific. This means specific RDS content may not be available in your listening area or in the country you operate the vehicle.

To turn RDS features on or off, select Settings > Apps> Audio> RDS> Select ON or OFF.

The following core and region specific RDS features may be supported by radio broadcasters in your listening area:

### Core RDS features

- Display radio station call letters
- Display messages from radio stations
- Provide radio station category information (when available)

### Region Specific RDS features

- Support Traffic Program (TP) Alerts
- Support Alternate Frequency (AF) Switching
- Support Region Switching

## Radio Reception

Unplug electronic devices from the accessory power outlets if there is interference or static in the radio.

### FM

FM signals only reach about 16 to 65 km (10 to 40 mi). Although the radio has a built-in electronic circuit that automatically works to reduce interference, some static can occur, especially around tall buildings or hills, causing the sound to fade in and out.

### AM

The range for most AM stations is greater than for FM, especially at night. The longer range can cause station frequencies to interfere with each other. Static can also occur when things like storms and power lines interfere with radio reception. When this happens, try reducing the treble on the radio.

### Digital Audio Broadcasting (DAB)

If equipped, Digital Audio Broadcasting (DAB) is a universal broadcast system that indicates stations by the radio program name on the infotainment display. The DAB signal produces a constant volume and is not affected by interference from nearby frequencies. The reception quality of DAB improves if the signal is reflected by natural obstacles or buildings. If the DAB signal is unclear, reception is interrupted completely.

### Mobile Phone Usage

Mobile phone usage, such as making or receiving phone calls, charging, or just having the phone on may cause static interference in the radio. Unplug the phone or turn it off if this happens.

### Multi-Band Antenna

The multi-band roof antenna may be used for radio, navigation, and other communication systems, depending on the equipped options. To ensure clear reception, keep the antenna clear of obstructions, such as snow and ice. If the vehicle has a sunroof, and it is open, or a roof loaded with cargo, reception may be affected.

## Audio Players

### Avoiding Untrusted Media Devices

When using media devices such as USB and mobile devices, consider the source. Untrusted media devices could contain files that affect system operation or performance and should be avoided.

## USB Port

Audio stored on a USB device may be listened to.

Depending on your vehicle, it may be equipped with two USB ports in the center console under the armrest and another two on the center stack. These ports are for data and charging. There may also be two USB ports at the rear of the center console and a USB port on each side of the third row seats for charging only.

### Caution

To avoid vehicle damage, unplug all accessories and disconnect all accessory cables from the vehicle when not in use. Accessory cables left plugged into the vehicle, unconnected to a device, could be damaged or cause an electrical short if the unconnected end comes in contact with liquids or another power source such as the accessory power outlet.

## Playing from a USB

A USB mass storage device can be connected to the USB port.

Audio extensions supported by the USB may include:

- MP3
- AAC
- OGG
- 3GP

## My Media Library

MyMedia is only available when more than one indexed device is connected. It allows access to content from all indexed media sources. MyMedia will show as an available source in the Source page.

## USB MP3 Player and USB Devices

The USB MP3 players and USB devices connected must comply with the USB Mass Storage Class specification (USB MSC).

To play a USB device:

1. Connect the USB.
2. Touch Audio from the Home Page.
3. Select USB device.

Use the following when playing an active USB source:

▶ : Touch to play the current media source.

⏸ : Touch to pause playback of the current media source.

⏮ :

- Touch to seek the beginning of the current or previous track.
- Touch and hold to reverse quickly through playback. Release to return to playing speed. Elapsed time displays.

⏭ :

- Touch to seek the next track.
- Touch and hold to advance quickly through playback. Release to return to playing speed. Elapsed time displays.

**Shuffle** : Touch the shuffle icon to play music in random order.

## USB Sound Menu

See “Infotainment System Sound Menu” under *AM-FM Radio* ⇨ 128.

## USB Browse Menu

When a list of songs, albums, artists, or other types of media displays, the up and down arrows and A-Z appear on the left side. Select A-Z to view a display that will show all letters of the alphabet and select the letter to go to.

Touch the up and down arrows to move the list up and down.

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Touch Browse and the following may display:

### Playlists:

1. Touch to view the playlists stored on the USB.
2. Touch a playlist to view the list of all songs in that playlist.
3. Touch a song from the list to begin playback.

Supported playlist extensions are m3u and pls.

### Artists:

1. Touch to view the list of artists stored on the USB.
2. Touch an artist name to view a list of all albums by the artist.
3. To select a song, touch All Songs or touch an album and then touch a song from the list.

### Songs:

1. Touch to display a list of all songs on the USB.
2. To begin playback, touch a song from the list.

### Albums:

1. Touch to view the albums on the USB.

2. Touch the album to view a list of all songs on the album.

3. Touch a song from the list to begin playback.

### Genres:

1. Touch to view the genres on the USB.
2. Touch a genre to view a list of artists.
3. Touch an artist to view albums by that artist.
4. Touch an album to view songs on the album.
5. Touch a song to start playback.

### Composers:

1. Touch to view the composers on the USB.
2. Touch a Composer to view a list of albums by that composer.
3. Touch an album or All Songs to view a list of songs.
4. Touch a song from the list to begin playback.

### Folders:

1. Touch to view the directories on the USB.
2. Touch a folder to view a list of all files.

3. Touch a file from the list to begin playback.

**Podcasts :** Touch to view the podcasts on the connected Apple device and get a list of podcast episodes.

### Audiobooks:

1. Touch to view the audiobooks stored on the Apple device.
2. Touch an audiobook to get a list of chapters.
3. Touch the chapter from the list to begin playback.

### File System and Naming

File systems supported by the USB may include:

- FAT32
- NTFS
- HFS+

The songs, artists, albums, and genres are taken from the file's song information and are only displayed if present. The radio displays the file name as the track name if the song information is not available.

### Storing and Recalling Media Favorites

To store media favorites, touch Browse to display a list of media types.

Touch one of the following Browse options to save a favorite:

**Playlists** : Touch ☆ next to any playlist to store the playlist as a favorite. Touch a saved favorite to recall a favorite playlist. The first song in the playlist begins to play.

**Artists** : Touch ☆ next to any artist to store the artist as a favorite. Touch a saved favorite to recall a favorite artist. The first song in the artist list begins to play.

**Songs** : Touch ☆ next to any song to store the song as a favorite. Touch a saved favorite to recall a favorite song.

**Albums** : Touch ☆ next to any album to store the album as a favorite. Touch a saved favorite to recall a favorite album. The first song in the album list begins to play.

**Genres** : Touch ☆ next to any genre to store the genre as a favorite. Touch a saved favorite to recall a favorite genre. The first song of the genre begins to play.

**Podcasts** : Touch ☆ next to any podcast to store the podcast as a favorite. Touch a saved favorite to recall a favorite podcast. The podcast begins to play.

**Audiobooks** : Touch ☆ next to any audiobook to store the audiobook as a favorite. Touch a saved favorite to recall a favorite audiobook. The first chapter in the audiobook begins to play.

### Media Playback and Mute

USB playback will be paused if the system is muted. If the steering wheel mute control is pressed again, playback will resume.

If the source is changed while in mute, playback resumes and audio will unmute.

### Bluetooth Audio

Music may be played from a paired Bluetooth device. See *Bluetooth (Pairing and Using a Phone)* ⇨ 151 or *Bluetooth (Overview)* ⇨ 150 for help pairing a device.

Volume and song selection may be controlled by using the infotainment controls or the mobile device. If Bluetooth is selected and no volume is present, check the volume setting on the infotainment system.

Music can be launched by touching Bluetooth from the recent sources list on the left of the display or by touching the More option and then touching the Bluetooth device.

To play music via Bluetooth:

1. Power on the device, and pair to connect the device.
2. Once paired, touch Audio from the Home Page, then touch Bluetooth from the recent sources list on the left of the display.

### Bluetooth Sound Menu

See “Infotainment System Sound Menu” under *AM-FM Radio* ⇨ 128.


### Manage Bluetooth Devices

From the Home Page:

1. Touch Audio.
2. Touch Devices to add or delete devices.

When touching Bluetooth, the radio may not be able to launch the audio player on the connected device to start playing. When the vehicle is not moving, use the mobile device to begin playback.

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All devices launch audio differently. When selecting Bluetooth as a source, the radio may show as paused on the display. Press play on the device or touch  on the vehicle display to begin playback.

Browse functionality will be provided where supported by the Bluetooth device. This media content will not be part of the MyMedia source mode.

Some smartphones support sending Bluetooth music information to display on the radio. When the radio receives this information, it will check to see if any is available and display it. For more information about supported Bluetooth features, see your dealer.

## Navigation

### Using the Navigation System

If equipped, launch the Nav application by touching the Nav icon on the Home Page or on the shortcut tray near the bottom of the infotainment display.

When the Nav application is launched for the first time, a product walkthrough is available. Use of the feature requires the Terms and Conditions and the Privacy


statement to be confirmed. If available and signed into a profile, it is also suggested to enable and confirm Predictive Navigation.

#### Predictive Navigation (If Equipped)

If Predictive Navigation is available and confirmed, this feature learns preferences by remembering where the vehicle has been. It uses the locations and navigation history to personalize routes and results.



Predictive Navigation may learn elements such as:

- Personalized routes based on preferred streets.
- Search results that provide best matches at the top of the list.
- Predictive traffic.
- Local map content updating.


Predictive Navigation can also be enabled or disabled at a later time by touching  (Options). While in Options, touch Settings, then Map and Navigation Settings, and then Predictive Navigation.

#### Navigation Map View

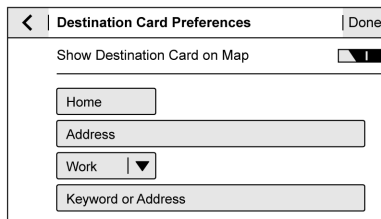


After opening the Nav application for the first time, the application will always open in full map view displaying the vehicle's current location. When the vehicle is stopped, the search bar will appear along the top of the navigation map view. Manually close the search bar by touching . When the vehicle is moving, the  (Search) icon will replace the search bar to maximize the full map view.

#### Destination Card Preferences


From the Nav application, set up Home and Work addresses to enable one-touch navigation. To set up Home and Work addresses, touch  and select Settings, then Map and Navigation Settings, and then Destination Card Preferences. Show My

Places on Map should be on by default. Select and enter Home and/or Work address and save.



If the vehicle's system is not signed into a customized profile, the current location icon uses a generic symbol. Once signed into a customized profile, the current location symbol will show a customized icon. See *Navigation Symbols* ➔ 137.

### Map and Navigation Settings

Touch  while in the map view to display options. The following may display:

- 3D Heading Up, 2D Heading Up, 2D North
- Show on Map
- Traffic Events (available with Connected Navigation)
- Settings
- Edit Destination (if a route has been set)

- Avoid on Route (if a route has been set)
- Touch Settings to view Map and Navigation Settings. The following may display:
- Destination Card Preferences
  - Map Preferences
  - Route Preferences
  - Navigation Voice Control
  - Traffic Preferences
  - Alert Preferences
  - Fuel Grade Preferences
  - Manage History
  - Predictive Navigation: See “Predictive Navigation (If Equipped)” previously in this section.
  - About

To exit a list, touch **X** in the top right corner to return to the main map view.

Make sure to set up preferences before setting a destination and starting active guidance.

### Map Preferences

Touch to choose between basic map feature configurations:

### Map Colors

- Auto – Touch to automatically change modes based on lighting conditions.
- Day (Light)
- Night (Dark)

**3D Landmark (Default is On)** : Touch On or Off. When turned on, the system will display all 3D Landmarks on the map depending on the zoom level.

**3D Building (Default is Off)** : Touch On or Off. When turned on, the system will display all of the possible 3D building shapes on the map depending on the zoom level.

**Show Terrain in 3D (Default is Off)** : If equipped, touch On or Off. When turned on, the system will display terrain information on the map in 3D view.

**Auto-Zoom (Default is On)** : Touch On or Off. When turned on, the system will automatically adjust the zoom level when the vehicle is approaching a turn. After the turn is completed, the system automatically brings the zoom back to the originally set level. If the vehicle is approaching a turn with the next turn occurring shortly after, the Auto-Zoom will remain on until both turns are completed.

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### Route Preferences

Touch to access the Route Preferences. The choices are:

- Preferred Route – Choose from two different route options: Fastest or Eco-Friendly.
  - Fastest would be the route with the shortest drive time.
  - Eco-Friendly would be the most fuel-efficient route.
- Avoid on Current Route – Choose any of the road features to avoid while on route:
  - Highways
  - Unpaved Roads
  - Ferries
  - Carpool Lanes
  - Toll Roads
  - Tunnels
  - Country Borders

### Navigation Voice Control


Touch to access the voice control setting display.

- Navigation Volume – To adjust the volume level, touch the up and down arrows. If the voice guidance prompt is


being heard, volume can also be adjusted using the knob on the center stack or the volume switch on the steering wheel.

- Navigation Voice Prompt Level during a Call. Options available are:
  - Full Prompt (Selected by default)
  - Tone Only
  - None

### Traffic Events (If Equipped)

This feature provides a list of events that are on the route or nearby. Touch  and then select Traffic Events. A connected Navigation service plan is required.

### Traffic Preferences (If Equipped)

While in Map View, touch , then Settings and then Map and Navigation Settings to access Traffic Preferences. When Show Traffic on Map is turned on, the feature provides an overview of the traffic flow using different coded colors. The following options are available for rerouting:

- Auto Reroute to Better Route – The system will automatically reroute if the system detects there is a traffic issue ahead.

- Ask Before Rerouting (Default) – If the system detects there is a traffic issue ahead, it will display a pop-up with details about the issue. Choose to reroute or cancel the alert.
- Never Search for Better Route – The system will not check for a better route until one of the above options is selected.



### Alert Preferences

Set alerts on or off during both inactive and active guidance views. The following alerts may be available:

- Road Safety Alerts – Touch to display upcoming School Zones.
- Traffic Camera Alerts

### Manage History

Touch Manage History to access the History options:

- Clear Recent Destinations – Touch  to clear the recent destinations.
- Clear Search History – Touch  to clear the search history.

### About

Touch to display software information, such as:

- Telenav Terms and Conditions

- Telenav Privacy Statement
- Navigation Version

## Maps

The Navigation application requires a map database to run. It is stored on an SD card that is connected to the infotainment system. If the map database is not available, a missing SD card error message will be displayed.

### SD Card Error Messages

The SD card only works for one unique vehicle. The SD card must pass authentication verification to be used for that specific vehicle. If the SD card has a switch that can be set to read-only mode, ensure that it is in the upward position and not in read-only.

Potential error scenarios and messages include:

- The SD card has initialized for the first time: "Once initialized, this SD card can only be used for navigation in this vehicle."
- The SD card is not working properly: "SD card is not functioning properly. (Error Code)."

See your dealer if this message appears.

- The SD card is not paired with the existing system: "This SD card is not valid in this vehicle for navigation. See Owner's Manual for more detail or visit your dealer. (Error Code)."
- The SD card has been removed from the slot: "SD card has been removed. (Error Code)."

Make sure the SD card is in the slot. If it was removed and inserted and you still receive an error code, see your dealer.

Touch Confirm to resume after the initialization error message. For the other messages, touch OK to return to the Home Page.

## Navigation Symbols

Following are the most common symbols that may appear in the Nav application.



This indicates the vehicle's current location and direction on the map.



This is the vehicle's current location icon during inactive guidance mode. Once a user profile is created, the current location icon can be customized.

This icon indicates the vehicle's current location and direction on the map.



The destination pin marks the location of the final destination. Touch the pin to view the destination address or to add it or remove it from the Favorites list. Hide the information by touching the pin one more time. It will automatically time out if no action is taken.

## 138 Infotainment System



If equipped, smart Points of Interest (POIs) are places of interest for parking and gas stations.



The progress bar provides an overview of the route progress and may show traffic and incidents along the way. As the route proceeds, the vehicle icon moves up the bar.

Touch the icon to zoom out on the map and view the entire route. Touch it again to return to the previous view.

View the drive time by touching the estimated time of arrival (ETA).

### Current Location

When the vehicle is parked and not in a Navigation session, the user icon is centered on the map view, highlighting the current location.

### Destination


#### Receiving Destination Directions from Different Sources

Destinations can be received or transferred from different sources to the Nav application for route guidance. If equipped, some of these sources may include:

- Navigation from search results.
- An address from the Contacts list.
- An application on the smartphone that can send destinations to the vehicle.

### Waypoints

Add up to five waypoints, which are additional destinations, along the route. To add an additional stop or waypoint:

1. From active guidance, touch .
2. Search for the destination using One-Box, Voice search, or the Quick Category icons.

3. Choose search results Along Route, Nearby, or Near Destination.
4. Choose the desired waypoint and touch Add to Trip or replace the current destination by touching New Destination.

Route options are not available for waypoints.


### Arriving at a Waypoint

When approaching a waypoint, the system will display a Destination Arrival view. To continue on to the next destination touch the Drive to message on the infotainment display.


If the vehicle passes the waypoint or gets out of the current route, the system will automatically reroute back to this waypoint. At the same time, it will show a Drive to icon along with the next waypoint address so the current waypoint can be skipped and guidance can resume to the next waypoint or destination.

### Editing a Waypoint

When waypoints are added during active guidance, the system allows a stop to be deleted or the order to be changed. To edit a waypoint:

1. Touch .

## 2. Touch Edit Destinations.

- Modify destination order by touching and holding the arrow until it is highlighted. Drag to move the waypoint up or down the list.
- Delete a waypoint by touching . A pop-up will appear to confirm waypoint removal. Once the request is confirmed, the system will remove the address from the destinations list. Touch **X** on the top right corner so the system can recalculate the route. If there is only one address in the destinations list, the system will disable the move and delete functions. The system will not allow the final destination to be deleted.

## Map Information

Road network attributes are contained in the map database for map information. Attributes include information such as street names, street addresses, and turn restrictions. A detailed area includes all major highways, service roads, and residential roads. The detailed areas include Places of Interest (POIs) such as restaurants,

airports, banks, hospitals, police stations, gas stations, tourist attractions, and historical monuments.

If the vehicle does not have an applicable service plan, the map database may not include data for newly constructed areas or map database corrections that are completed after production. The navigation system provides full route guidance in the detailed map areas.

## Zoom Control

The zoom control display is shown on the map view. A few ways to zoom in or out are:

- Touch + or – to zoom in or out on the map.
- Double tap with one finger to zoom in or single tap with two fingers to zoom out on the map.
- Use the index finger and thumb to zoom out by pinching and then zoom in by spreading those two fingers on the map.

## Map Gestures and Map Scale

Use the following gestures on the infotainment display to adjust the map scale and display options.

- Pinch to zoom in or out.

- Pan the map.
- Use two fingers to tilt down and change from 2D to 3D. Tilt up to change back to 2D.
- Rotate the map.

See *Using the System* ⇨ 125.


## Mute

When in active guidance, the audio prompts while using navigation can be muted. Touch the speaker icon on the right side of the upper bar. A slash will appear on the speaker to indicate voice guidance is muted.

## Active Guidance View

When a destination is chosen and a navigation session is active, the navigation system enters into an Active Guidance View (AGV).

## Map Orientation

Touch  on the map to access map orientation settings. Map orientation is 3D Heading Up by default.

Available settings are:

- 3D Heading Up (Default): 3D map with the vehicle pointing up. In this mode, the current location icon will always head up and the map will rotate around it.

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- **2D Heading Up:** 2D map with the vehicle pointing up. In this mode, the current location icon will always head up and the map will rotate around it.
- **2D North Up:** 2D map with North pointing up. In this mode, the current location icon will shift as the vehicle turns left and right.

Touch the icon to change the map type. The icon and label will also update accordingly.

Depending on the zoom level of the 2D Heading Up and 3D Heading Up maps, the system may automatically switch to the 2D North Up map.

When in AGV, the entire route can be viewed in 2D North Up by touching the traffic bar. The map will zoom out and readjust to display the full route. When in 2D North Up Route View, the Recenter icon will appear in the middle of the display. Touch either the Recenter icon or the traffic bar again to return to the previous view, either 2D or 3D.

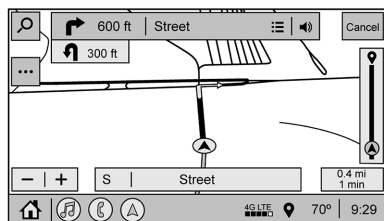
### Lane Guidance

The map will display the lane information for the upcoming maneuver if it is available.

### Junction View


When a vehicle is on the highway and approaching the exit, an image displays the lane that the vehicle must stay in to complete the next maneuver.

### Quick-Turn View



When the vehicle is approaching a turn with the next turn following in quick succession, a quick-turn list appears below the primary turn indicator. An audio prompt will announce the quick turn.

### Auto-Zoom

When approaching a maneuver, the map will automatically zoom in to show both the vehicle icon and the upcoming maneuver to give a better view of the maneuver. Once the maneuver is complete, the system will zoom back to the previous zoom level. Touch  on the map to access Settings,



then touch Map Preferences to access Auto-Zoom. This feature can be enabled or disabled.

### Directions

Touch the menu option next to the next turn street name to display Directions.

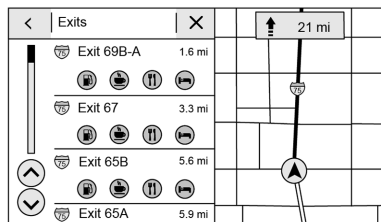
Directions displays the turns and directions from the current location to the final destination.


### Editing Directions

Directions can be edited by choosing , which expands the list to fill the display and enters the Edit Mode. While in Edit Mode, an unwanted route segment can be removed from the route by touching  next to the segment. A pop-up appears to confirm segment removal.

When the route segment has been removed, all segments are replaced by an activity indicator while the new route is recalculated. When the recalculation is complete, the activity indicator is replaced with the new route segments.

### Highway Exits List



Touch  to open the Exit list. This icon displays next to the current street name near the bottom of the display. The icon only appears when on a highway with defined exits.

While traveling on roads with designated exits, an Exit list may be available. The Exit list displays the exit number, distance to the exit from the current vehicle position, and convenience stops that may be available, such as gas, coffee, food, and lodging.

### Next Maneuver Menu

When in Active Guidance, the Next Maneuver Turn Arrow, Street Name, and Maneuver Distance are shown in the Next Maneuver at the top of the display overlaying the map. ETA, Distance to

Destination, and Traffic Indicator are displayed in a panel pinned on the right of the display.

### Navigation Next Turn Maneuver Alert

If the Navigation application is not open when a near maneuver prompt is given, it is shown as an alert. Touch the alert to go to the main navigation view or touch **X** to dismiss the alert.

### Repeat Voice Guidance



This symbol indicates the next guidance maneuver. Touch it to repeat the last spoken guidance instruction.

### Incident Alert (If Equipped)

During active guidance, if the system determines that there is an incident ahead but there is not a better route, the system will play a tone and show a Quick Notice. This will only show once per incident.

### Incident Reports (If Equipped)

Incident report icons, along with traffic flow data, display on the map during both active and inactive guidance.

### End Route

Touch Cancel at the top right corner to end active guidance and return to inactive guidance. If active guidance is canceled before the destination has been reached, a pop-up option to Resume Trip will appear.

### Resume Trip

The trip can be resumed if it was canceled by touching the Resume Trip pop-up option.

If the system has determined that the destination has been reached, either because the arrival view displayed or the destination has been passed, the Resume Trip option will not appear.

### Favorites

The navigation favorites can have contacts, addresses, or POIs that have been saved through the favorite icon on the details view.

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### Accessing Favorites

In the Nav application, view the Favorites list by touching ☆ in the search bar along the top of the Nav map view. If the search bar is closed, touch 📍 and select ☆.

### Saving Favorites

Favorites can be added from a number of the system's applications. Touch the favorites icon to save content as a favorite.

### Renaming Navigation Favorites

1. Touch the Settings icon on the Home Page and touch the System tab.
2. Touch Favorites to access the Manage Favorites option.
3. Touch a saved Navigation favorite to access the edit icon. Touch the edit icon to rename the favorite.
4. Touch Save to store the renamed favorite.

### Recents

Touch 🕒 to access a list of recent destinations.

### Recenter Position Icon

Touch the Recenter Position arrow in the middle of the map view to reset the map to the current location.

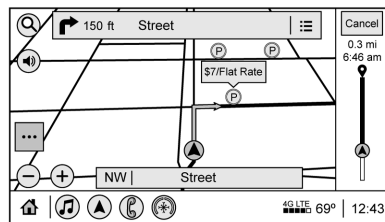
### Last Parked Location

The Last Parked Location is the last location the vehicle engine was turned off. That location is displayed in the first row of the Recents list. Touching the last Parked Location shows the Address Details view to either save the address or drive to it. The Last Parked Location can be deleted by entering the Edit display. Once the Last Parked Location is deleted, it no longer appears in the Recents list, unless the vehicle is started at that location again.

### Show POI Icons

To see the POI categories, touch Options, then touch Show on Map. Up to eight categories of icons can be selected.

### Smart POI Icons on Map (If Equipped)



The smart POI icons such as fuel stations and parking may appear based on time, location, driver search behavior, driving conditions, and vehicle conditions.

Touch a smart POI icon to open the corresponding details:

- Left side: Name and address of the POI.
- Right side: 🚗 + ETE (Estimated Time Enroute.)

### Smart Fuel Station Icons

Fuel station prices are shown if available for nearby stations when the vehicle is low on fuel.

### Smart Parking Icons

When reaching a densely populated destination and the system determines that parking may be limited, the system will

attempt to display nearby parking destinations with pricing information, if available.

### **Report an Issue Using POI Details (If Equipped)**

In the POI details page, a POI issue can be reported if the data is not accurate or the address is incorrect. Touch Report an Issue near the bottom of the display to access the issue selection page. Touch one of the predefined issues on the selection page, then touch Send. The system will send the information for analysis.

### **Search**

Touch Search on the infotainment display to open the search display. It has a search field entry box, quick category icon shortcuts, recents icon, favorites icon, and keyboard.

### **Auto Complete**

Enter a partial location in the field entry box on the search display. Auto complete will attempt to complete the destination based on what is being entered. Touch the suggested item to search.

### **Search While in Motion with No Front Seat Passenger Present**

The search display will not allow changes or text input with the keyboard when the vehicle is in motion. As a result, a display showing three rows of the most commonly used categories appears. Touching the search box will activate speech recognition.

### **Search While in Motion with Front Seat Passenger Present**

If the system detects that the front seat passenger is present with both driver and passenger seat belts buckled, touching the search icon will display an alert message that allows the passenger to search for a destination as if the vehicle were stopped.

### **Connected Navigation**

Connected Navigation is a subscription service that enables certain capabilities within the navigation system, such as Traffic, Smart Search/Routing, and Predictive Navigation capabilities. The system will show an alert when the subscription is expiring and will ask to renew the plan.

## **Global Positioning System (GPS)**

If equipped, the position of the vehicle is determined by using satellite signals, various vehicle signals, and map data.

At times, other interference such as the satellite condition, road configuration, condition of the vehicle, and/or other circumstances can affect the navigation system's ability to determine the accurate position of the vehicle.

The GPS shows the current position of the vehicle using signals sent by GPS satellites. When the vehicle is not receiving signals from the satellites, a symbol appears in the status bar.

This system might not be available or interference can occur if any of the following are true:

- Signals are obstructed by tall buildings, trees, large trucks, or a tunnel.
- Satellites are being repaired or improved.

For more information if the GPS is not functioning properly, see *Problems with Route Guidance* ⇨ 144 and *If the System Needs Service* ⇨ 144.

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### Vehicle Positioning

At times, the position of the vehicle on the map could be inaccurate due to one or more of the following reasons:

- The road system has changed.
- The vehicle is driving on slippery road surfaces such as sand, gravel, or snow.
- The vehicle is traveling on winding roads or long, straight roads.
- The vehicle is approaching a tall building or a large vehicle.
- The surface streets run parallel to a freeway.
- The vehicle has been transferred by a vehicle carrier or a ferry.
- The current position calibration is set incorrectly.
- The vehicle is traveling at high speed.
- The vehicle changes directions more than once, or the vehicle is turning on a turn table in a parking lot.
- The vehicle is entering and/or exiting a parking lot, garage, or a lot with a roof.
- The GPS signal is not received.
- A roof carrier is installed on the vehicle.
- Tire chains are installed on the vehicle.
- The tires are replaced or worn.

- The tire pressure for the tires is incorrect.
- This is the first navigation use after the map data is updated.
- The 12-volt battery has been disconnected for several days.
- The vehicle is driving in heavy traffic where driving is at low speeds, and the vehicle is stopped and started repeatedly.

### Problems with Route Guidance

Inappropriate route guidance can occur under one or more of the following conditions:

- The turn was not made on the road indicated.
- Route guidance might not be available when using automatic rerouting for the next right or left turn.
- The route might not be changed when using automatic rerouting.
- There is no route guidance when turning at an intersection.
- Plural names of places might be announced occasionally.
- It could take a long time to operate automatic rerouting during high-speed driving.

- Automatic rerouting might display a route returning to the set waypoint if heading for a destination without passing through a set waypoint.
- The route prohibits the entry of a vehicle due to a regulation by time or season or any other regulation which may be given.
- Some routes might not be searched.
- The route to the destination might not be shown if there are new roads, if roads have recently changed, or if certain roads are not listed in the map data. See *Maps* ⇨ 137.

To recalibrate the vehicle's position on the map, park with the vehicle running for two to five minutes, until the vehicle position updates. Make sure the vehicle is parked in a location that is safe and has a clear view of the sky and away from large obstructions.

### If the System Needs Service

If the navigation system needs service, see your dealer.

### Map Data Updates

The map data in the vehicle is the most up-to-date information available when the vehicle was produced. The map data is

updated periodically, provided that the map information has changed and the vehicle has a relevant service plan.



See your dealer for details on ordering, purchasing, and installing a new or replacement SD card. Features are subject to change.

If the vehicle is equipped with Connected Navigation, which is a subscription service that enables certain features of the navigation system, such as Traffic, Smart Search/Routing, and Predictive Navigation, then the system will download the latest map data from the cloud.

### Database Coverage Explanations

Coverage areas vary with respect to the level of map detail available for any given area. Some areas feature greater levels of detail than others. If this happens, it does not mean there is a problem with the system. As the map data is updated, more detail can become available for areas that previously had limited detail. See *Map Data Updates* ⇨ 144.

## Voice Recognition

If equipped, voice recognition allows for hands-free operation within the navigation, audio, and mobile device applications. This feature can be started by pressing  on the steering wheel or by touching  on the infotainment display with the navigation application.

However, not all features within these areas are supported by voice commands. Generally, only complex tasks that require multiple manual interactions to complete are supported by voice commands.

For example, tasks that take more than one or two touches, such as a song or artist to play from a media device, would be supported by voice commands. Other tasks, like adjusting the volume or seeking up or down, are audio features that are easily performed by touching one or two options, and are not supported by voice commands.


In general there are flexible ways to speak commands for completing the tasks.


Try stating a One-Shot command, such as “Directions to address <number, street, city, country>.” Another example of a One-Shot Destination Entry command is, “Directions to


Place of Interest at <hotel>.” If these commands do not work, try saying, “Take me to Place of Interest” or “Find address” and the system will walk you through by asking additional questions.

### Using Voice Recognition

Voice recognition becomes available once the system has been initialized. This begins when the ignition is turned on. Initialization may take a few moments.

1. Press  on the steering wheel controls to activate voice recognition.
2. The audio system mutes and the system plays a prompt.
3. Clearly speak one of the commands described in this section.

A voice recognition system prompt can be interrupted while it is playing by pressing  again.

For example, if the prompt seems to be taking too long to finish, to speak the command without waiting for the prompt to complete and press  again.

Once voice recognition is started, both the infotainment display and instrument cluster show the selections and visual dialog

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content. These displays can be turned on or off in the Tutorial Mode under *Settings* ⇒ 155.

There are three voice prompt modes supported:

- **Informative verbal prompts:** This type of prompt will provide more information regarding the supported actions.
- **Short prompts:** This type of prompt will provide simple instructions about what can be stated.
- **Auto informative prompts:** This type of prompt plays during the first few speech sessions, then automatically switches to the short prompt after some experience has been gained through using the system.

If a command is not spoken, the voice recognition system says a help prompt.


### Prompts and Infotainment Displays

While a voice recognition session is active, there may be corresponding options showing on the displays. A selection can be made by manually touching the option, or by speaking the number for the option to select. Manual interaction in the voice recognition session is permitted. Interaction during a voice session may be completed

entirely using voice commands while some manual commands may expedite a task. If a selection is made using a manual control, the voice recognition dialog will progress in the same way as if the selection were made using a voice command. Once the system completes the task, or the session is terminated, the voice recognition dialog stops.

An example of this type of manual intervention is touching an entry of a displayed number list instead of speaking the number associated with the entry desired.

### Canceling Voice Recognition

- Touch or say “Cancel” or “Exit” to terminate the voice recognition session and show the display where voice recognition was initiated.
- Press  on the steering wheel controls to terminate the voice recognition session and show the display where voice recognition was initiated.

### Natural Language Commands

Most languages do not support natural language commands in sentence form. For those languages, use direct commands like the examples shown on the display.

### Helpful Hints for Speaking Commands

Voice recognition can understand commands that are naturally stated in sentence form or direct commands that state the application and the task.

For best results:

- Listen for the prompt before saying a command or reply.
- Speak the command naturally, not too fast, not too slow.
- Use direct commands without a lot of extra words. For example, “Call <name> at work,” “Play” followed by the artist or song name, or “Tune” followed by the radio station number.
- Navigation destinations can be made in a single command using keywords. A few examples are: “I want directions to an address,” “I need to find a Place of Interest or (POI),” or “Find contact.”

The system responds by requesting more details. For other POIs, say the name of a category like “Restaurants,” “Shopping Malls,” or “Hospitals.”

- Navigating to a destination outside of the current country takes more than one command. The first command is to tell the system where the navigation will take

place, such as an Address, Intersection, POI, or Contact. If Address or Intersection is selected, the second command is to say, "Change Country." Once the system responds, say the country before saying the rest of the address and/or intersection.

If POI is asked for, say "Change Location," then "Change Country."

Direct commands might be more clearly understood by the system. An example of a direct command would be "Call <number>." Examples of these direct commands are displayed on most of the screens while a voice session is active. If "Phone" or "Phone Commands" is spoken, the system understands that a phone call is requested and will respond with questions until enough details are gathered to make a call.

If a cell phone number has been saved with a name and a place, the direct command should include both, for example "Call <name> at work."

### Using Voice Recognition for List Options

When a list is displayed, a voice prompt will ask to confirm or select an option from that list.

When a display contains a list, there may be options that are available but not displayed. The list on a voice recognition screen functions the same as a list on other displays. Scrolling or flinging can be used to help display other entries from the list.

Manually scrolling or paging the list on a display during a voice recognition session suspends the current voice recognition event and plays the prompt "Please select manually or touch the Back icon on the infotainment display to try again."

If manual selection takes more than 15 seconds, the session terminates and prompts that it has timed out. The display returns to the display where voice recognition was initiated.


### The Back Command

Say "Back" or touch the Back icon on the infotainment display to go to the previous display.

If in voice recognition, and "Back" is spoken all the way back to the starting display, and then "Back" is spoken one more time, the voice recognition session will cancel.

### Help

Say "Help" on any voice recognition display and the help prompt for the display is played.

Touching  while the help prompt is playing will terminate the prompt. Doing this will stop the help prompt so that a voice command can be used.

### Voice Recognition for the Radio

If browsing the audio sources when voice is touched, the voice recognition commands for AM, FM, and DAB (if equipped) are available.

**"Switch to AM"** : Switch bands to AM and tune to the last AM radio station.

**"Switch to FM"** : Switch bands to FM and tune to the last FM radio station.

**"Switch to DAB"** : Switch bands to DAB and tune to the last DAB radio station.

**"Tune to <AM frequency> AM"** : Tune to the radio station whose frequency is identified in the command (like "nine fifty").

**"Tune to <FM frequency> FM"** : Tune to the radio station whose frequency is identified in the command (like "one oh one point one").

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**“Tune to <DAB station name> DAB”** : Tune to the radio station name.

### Voice Recognition for Audio MyMedia

The available voice recognition commands for [browsing] MyMedia are:

**“Play Artist”** : Begin a dialog to enter a specific artist name.

**“Play Artist <artist name>”** : Begin playback of a specific artist.

**“Play Album”** : Begin a dialog to enter a specific album name.

**“Play Album <album name>”** : Begin playback of a specific album.

**“Play Song”** : Begin a dialog to enter a specific song name.

**“Play Song <song name>”** : Begin playback of a specific song, if available.

**“Play Genre”** : Begin a dialog to enter a specific genre.

**“Play Genre <genre name>”** : Begin playback of a specific genre.

**“Play Playlist”** : Begin a dialog to enter a specific playlist name.

**“Play Playlist <playlist name>”** : Begin playback of a specific playlist.

**“Play <device name>”** : Play music from a specific device identified by name. The device name is the name displayed when the device is first selected as an audio source.

**“Play Chapter”** : Begin a dialog to enter a specific name.

**“Play Chapter <chapter name>”** : Begin playback of a specific chapter.

**“Play Audiobook”** : Begin a dialog to enter a specific audiobook.

**“Play Audiobook <audiobook name>”** : Begin playback of a specific audiobook.

**“Play Episode”** : Begin a dialog to enter a specific name.

**“Play Episode <episode name>”** : Begin playback of a specific episode.

**“Play Podcast”** : Begin a dialog to enter a specific podcast.

**“Play Podcast <podcast name>”** : Begin playback of a specific podcast.

**“My Media”** : Begin a dialog to enter the desired media content.

### Handling Large Amounts of Media Content

It is expected that large amounts of media content will be brought into the vehicle. It may be necessary to handle large amounts of media content in a different way than smaller amounts of media. The system may limit the options of voice recognition by not allowing selection of files by voice at the highest level if the number of files exceeds the maximum limit.

Changes to voice commands due to media content limits are:

- Files including other individual files of all media types such as songs, audiobook chapters, podcast episodes, and videos.
- Album type folders including types such as albums and audiobooks.

There are no restrictions if the number of files and albums is fewer than 12,000. When the number of files connected to the system is between 12,000 and 24,000, the content cannot be accessed directly with one command like “Play <song name>.”

The restriction is that the command “Play Song” must be spoken first; the system will then ask for the song name. The reply command would be to say the name of the song to play.

Similar limits exist for album content. If there are more than 12,000 albums, but fewer than 24,000, the content cannot be accessed directly with one command like, "Play <album name>." The command "Play Album" must first be spoken; the system will then ask for the album name. The reply would be to say the name of the album to play.

Once the number of files has exceeded approximately 24,000, there is no support for accessing the songs directly through voice commands. There will still be access to the media content by using commands for playlists, artists, and genres.

The access commands for playlists, artists, and genres are prohibited after the number of this type of media exceeds 12,000.

The system will provide feedback the first time voice recognition is initiated if it has become apparent that any of these limits are reached during a device initializing process.

Voice recognition performance will degrade to some extent based on many factors when adding large amounts of data to recognize. If so, accessing songs through playlists or artist name may work better.

### Voice Recognition for Navigation (If Equipped)

**"Navigation"** : Begin a dialog to enter specific destination information.

**"Navigation Commands"** : Begin a dialog to enter specific destination information.

**"Address"** : Begin a dialog to enter a specific destination address, which includes the entire address consisting of the house number, street name, city, and country.

**"Place of Interest"** : Begin a dialog to enter a destination Place of Interest category or major brand name.

The name must be precisely spoken. Nicknames or short names for the businesses will not likely be found. Lesser known businesses might have to be located by category, such as fast food, hotels, or banks.

**"Navigate to Contact"** : Begin a dialog to enter a specific destination contact name.

**"Cancel Route"** : End route guidance.

**"Take Me Home"** : Create a route to a stored home location.

### Voice Recognition for the Phone

**"Call <contact name>"** : Initiate a call to a stored contact. The command may include location if the contact has location numbers stored.

**"Call <contact> At Home," "At Work," "On Mobile," or "On Other"** : Initiate a call to a stored contact and location at home, at work, on mobile device, or on another phone.

**"Call <cell phone number>"** : Initiate a call to a cell phone number of seven digits, 10 digits, or three digit emergency numbers.

**"Pair Phone"** : Begin the Bluetooth pairing process. Follow the instructions on the infotainment display.

**"Redial"** : Initiate a call to the last dialed number.


**"Switch Phone"** : Select a different connected cell phone for outgoing calls.

**"Voice Keypad"** : Begin a dialog to enter special numbers like international numbers. The numbers can be entered in groups of digits with each group of digits being repeated back by the system. If the group of digits is not correct, the command "Delete" will remove the last group of digits

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and allow them to be re-entered. Once the entire number has been entered, the command “Call” will start dialing the number.

### Phone Assistant Voice Recognition

Press and hold  on the steering wheel controls to pass through and launch Google phone assistant or Siri.

For the low radio, whether connected by Bluetooth or phone projection, the only available voice recognition is either Siri (iPhone) or the Google Assistant (Android).

## Phone

### Bluetooth (Overview)

The Bluetooth-capable system can interact with many mobile devices, allowing:

- Placement and receipt of calls in a hands-free mode.
- Sharing of the device’s address book or contact list with the vehicle.

To minimize driver distraction, before driving, and with the vehicle parked:

- Become familiar with the features of the mobile device. Organize the phone book and contact lists clearly and delete

duplicate or rarely used entries.

If possible, program speed dial or other shortcuts.


- Review the controls and operation of the infotainment system.
- Pair mobile device(s) to the vehicle. The system may not work with all mobile devices. See “Pairing” later in this section.


Vehicles with a Bluetooth system can use a Bluetooth-capable mobile device with a Hands-Free Profile to make and receive phone calls. The infotainment system and voice recognition are used to control the system. The system can be used while the ignition is on or in accessory mode. The range of the Bluetooth system can be up to 9.1 m (30 ft). Not all mobile devices support all functions and not all mobile devices work with the Bluetooth system. See your dealer for more information about compatible mobile devices.

### Controls

Use the controls on the center stack and the steering wheel to operate the Bluetooth system.

### Steering Wheel Controls

 : Press to answer incoming calls and start voice recognition on your connected Bluetooth mobile device.

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

### Infotainment System Controls

For information about how to navigate the menu system using the infotainment controls, see *Overview* ⇨ 123.

### Audio System

When using the Bluetooth mobile device system, sound comes through the vehicle's front audio system speakers and overrides the audio system. The volume level while on a mobile device call can be adjusted by pressing the steering wheel controls or the volume control on the center stack. The adjusted volume level remains in memory for later calls. The volume cannot be lowered beyond a certain level.

## **Bluetooth (Pairing and Using a Phone)**

### **Pairing**

A Bluetooth-enabled mobile device must be paired to the Bluetooth system and then connected to the vehicle before it can be used. See the mobile device manufacturer's user guide for Bluetooth functions before pairing the device.

### **Pairing Information**

- If no mobile device has been connected, the Phone main page on the infotainment display will show the Connect Phone option. Touch this option to connect. Another way to connect is to touch the Phones tab at the top right of the display and then touch Add Phone.
- A Bluetooth smartphone with music capability can be paired to the vehicle as a smartphone and a music player at the same time.
- Up to 10 devices can be paired to the Bluetooth system.
- The pairing process is disabled when the vehicle is moving.

- Pairing only needs to be completed once, unless the pairing information on the cell phone changes or the cell phone is deleted from the system.
- If multiple paired cell phones are within range of the system, the system connects to the paired cell phone that is set to First to Connect. If there is no cell phone set to First to Connect, it will link to the cell phone which was used last. To link to a different paired cell phone, see "Linking to a Different Phone" later in this section.

### **Pairing a Phone**

1. Make sure Bluetooth has been enabled on the cell phone before the pairing process is started.
2. Touch the Phone icon on the Home Page or the phone icon on the shortcut tray near the bottom of the display.
3. Touch Phones at the top of the infotainment display. There is also a Connect Phones option in the middle of the Phone display which will shortcut to the Phone List menu.
4. Touch Add Phone.
5. Select the vehicle name shown on the infotainment display from your cell phone's Bluetooth Settings list.

6. Follow the instructions on the cell phone to confirm the six-digit code showing on the infotainment display and touch Pair. The code on the cell phone and infotainment display will need to be acknowledged for a successful pair.
7. Start the pairing process on the cell phone to be paired to the vehicle. See the cell phone manufacturer's user guide for information on this process. Once the cell phone is paired, it will show under Connected.
8. If the vehicle name does not appear on your cell phone, there are a few ways to start the pairing process over:
  - Turn the cell phone off and then back on.
  - Go back to the beginning of the Phone menus on the infotainment display and restart the pairing process.
  - Reset the cell phone, but this step should be done as a last effort.
9. If the cell phone prompts to accept connection or allow phone book download, touch Always Accept and Allow. The phone book may not be available if not accepted.

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10. Repeat Steps 1–8 to pair additional cell phones.

### First to Connect Paired Phones

If multiple paired cell phones are within range of the system, the system connects to the paired cell phone that is set as First to Connect. To enable a paired cell phone as the First to Connect phone:

1. Make sure the cell phone is turned on.
2. Touch Settings, then touch System.
3. Touch Phones to access all paired and all connected cell phones and mobile devices.
4. Touch the information icon or pencil icon to the right of the cell phone to open the cell phone's settings menu.
5. Touch the First to Connect option, to enable the setting for that device.

Cell phones and mobile devices can be added, removed, connected, and disconnected. A sub-menu will display whenever a request is made to add or manage cell phones and mobile devices.

### Listing All Paired and Connected Phones

1. Touch the Phone icon on the Home Page or the phone icon on the shortcut tray near the bottom of the display.

2. Touch Phones.

### Disconnecting a Connected Phone

1. Touch the Phone icon on the Home Page.
2. Touch Phones.
3. Touch the information icon or the pencil icon next to the connected cell phone or mobile device to show the cell phone's or mobile device's information display.
4. Touch Disconnect.

### Deleting a Paired Phone

1. Touch the Phone icon on the Home Page or the phone icon on the shortcut tray near the bottom of the display.
2. Touch Phones.
3. Touch the information icon or the pencil icon next to the connected cell phone to display the cell phone's or mobile device's information display.
4. Touch Forget Device.

### Linking to a Different Phone

To link to a different cell phone, the new cell phone must be in the vehicle and paired to the Bluetooth system.

1. Touch the Phone icon on the Home Page or the phone icon on the shortcut tray near the bottom of the display.

2. Touch Phones.

3. Touch the new cell phone to link to from the not connected phone list. See "First to Connect Paired Phones" previously in this section.

### Switching to Handset or Handsfree Mode

To switch between handset or handsfree mode:

- While the active call is hands-free, touch the Handset option to switch to the handset mode.  
The mute icon will not be available or functional while Handset mode is active.
- While the active call is on the handset, touch the Handset option to switch to the hands-free mode.

### Making a Call Using Contacts and Recent Calls

Calls can be made through the Bluetooth system using personal cell phone contact information for all cell phones that support the Phone Book feature. Become familiar with the cell phone settings and operation. Verify the cell phone supports this feature.

The Contacts menu accesses the phone book stored in the cell phone.

The Recents menu accesses the recents call list from your cell phone.

To make a call using the Contacts menu:


1. Touch the Phone icon on the Home Page.
2. Touch Contacts.
3. The Contacts list can be searched by using the first character. Touch A-Z on the infotainment display to scroll through the list of names.  
Touch the name to call.
4. Touch the desired contact number to call.

To make a call using the Recents menu:

1. Touch Phone on the Home Page.
2. Touch Recents.
3. Touch the name or number to call.

### **Making a Call Using the Keypad**

To make a call by dialing the numbers:

1. Touch the Phone icon on the Home Page.
2. Touch Keypad and enter a phone number.
3. Touch  on the infotainment display to start dialing the number.

### **Searching Contacts Using the Keypad**

To search for contacts using the keypad:


1. Touch the Phone icon on the Home Page.
2. Touch Keypad and enter partial phone numbers or contact names using the digits on the keypad to search.  
Results will show on the right side of the display. Touch one to place a call.

### **Accepting or Declining a Call**

When an incoming call is received, the infotainment system mutes and a ring tone is heard in the vehicle.


#### **Accepting a Call**

There are two ways to accept a call:

- Press  on the steering wheel controls.
- Touch Answer on the infotainment display.

#### **Declining a Call**


There are two ways to decline a call:

- Press  on the steering wheel controls.
- Touch Ignore on the infotainment display.


### **Call Waiting**

Call waiting must be supported on the Bluetooth cell phone and enabled by the wireless service carrier to work.

#### **Accepting a Call**

Press  to answer, then touch Switch on the infotainment display.

#### **Declining a Call**

Press  to decline, then touch Ignore on the infotainment display

#### **Switching Between Calls (Call Waiting Calls Only)**

To switch between calls, touch Phone on the Home Page to display Call View. While in Call View, touch the call information of the call on hold to change calls.

### **Three-Way Calling**

Three-way calling must be supported on the Bluetooth cell phone and enabled by the wireless service carrier to work.



To start a three-way call while in a current call:

1. In the Call View, touch Add Call to add another call.

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2. Initiate the second call by selecting from Recents, Contacts, or Keypad.
3. When the second call is active, touch the merge icon to conference the three-way call together.

### Ending a Call

- Press  on the steering wheel controls.
- Touch  on the infotainment display, next to a call, to end only that call.

### Dual Tone Multi-Frequency (DTMF) Tones

The in-vehicle Bluetooth system can send numbers during a call. This is used when calling a menu-driven phone system. Use the Keypad to enter the number.

### Apple CarPlay and Android Auto


If equipped, Android Auto and/or Apple CarPlay capability may be available through a compatible smartphone. If available, the Android Auto and Apple CarPlay icons will change from gray to color on the Home Page of the infotainment display.

To use Android Auto and/or Apple CarPlay:

#### For Wired Phone Projection

1. Download the Android Auto app to your smartphone from the Google Play store. There is no app required for Apple CarPlay.
2. Connect your Android phone or Apple iPhone by using the factory-provided phone USB cable and plugging into a USB data port. For best performance, it is highly recommended to use the device's factory-provided USB cable, which should be replaced after significant wear to maintain connection quality. Aftermarket or third-party cables may not work.
3. When the phone is first connected to activate Apple CarPlay or Android Auto, accept the terms and conditions on both the infotainment system and the phone.
4. Follow the instructions on the phone.

The Android Auto and Apple CarPlay icons on the Home Page will illuminate depending on the smartphone. Android Auto and/or Apple CarPlay may automatically launch upon USB connection. If not, touch the Android Auto or Apple CarPlay icon on the Home Page to launch.

Press  on the center stack to return to the Home Page.

#### For Wireless Phone Projection (If Equipped)

If available for your region, verify your phone is wireless compatible by visiting the Android Auto or Apple CarPlay support page.


1. Download the Android Auto app to your smartphone from the Google Play store. There is no app required for Apple CarPlay.
2. For first time connection, there are two ways to set up wireless projection:
  - Connect your Android phone or Apple iPhone by using the factory-provided phone USB cable and plugging into a USB data port. For best performance, it is highly recommended to use the device's factory-provided USB cable, which should be replaced after significant wear to maintain connection quality. Aftermarket or third-party cables may not work.
  - Connecting the phone over Bluetooth. See *Bluetooth (Pairing and Using a Phone)* ⇨ 151 or *Bluetooth (Overview)* ⇨ 150.
3. Make sure wireless is turned on the phone for wireless projection to work.


4. When the phone is first connected to activate Apple CarPlay or Android Auto, agree to the terms and conditions on both the infotainment system and the phone.
5. Follow the instructions on the phone.

The Android Auto and Apple CarPlay icons on the Home Page will illuminate depending on the smartphone. Android Auto and/or Apple CarPlay may automatically launch upon wireless connection. If not, touch the Android Auto or Apple CarPlay icon on the Home Page to launch.

Wireless Carplay and/or Wireless Android Auto may experience occasional service disruption due to outside Wi-Fi interference.



To disconnect the phones wireless projection:

1. Select Settings from the Home Page.
2. Select Phones
3. Touch  or the pencil icon next to the phone to be disconnected.
4. Turn off Apple CarPlay or Android Auto.

Press  on the center stack to return to the Home Page.

Features are subject to change. For further information on how to set up Android Auto and Apple CarPlay in the vehicle, see your dealer.

Android Auto is provided by Google and is subject to Google's terms and privacy policy. Apple CarPlay is provided by Apple and is subject to Apple's terms and privacy policy. Data plan rates apply. For Android Auto support and to see if your phone is compatible, see <https://support.google.com/androidauto>. For Apple CarPlay support and to see if your phone is compatible, see [www.apple.com/ios/carplay/](http://www.apple.com/ios/carplay/). Apple or Google may change or suspend availability at any time. Android Auto, Android, Google, Google Play, and other marks are trademarks of Google Inc.; Apple CarPlay is a trademark of Apple Inc.

Press  on the center stack to exit Android Auto or Apple CarPlay. To enter back into Android Auto or Apple CarPlay, press and hold  on the center stack.

Apple CarPlay and Android Auto can be disabled from the infotainment system. To do this, touch Home, Settings, and then touch the Apps tab along the top of the display. Use the On/Off toggled to turn off Apple CarPlay or Android Auto.

## Settings

Certain settings can be managed in the Owner Center sites when an account is established, and may be modified if other users have accessed the vehicle or created accounts. This may result in changes to the security or functionality of the infotainment system. Some settings may also be transferred to a new vehicle, if equipped.

Refer to the User Terms and Privacy Statement for important details. To view, touch the Settings icon on the Home Page of the infotainment display.

The settings menu may be organized into four categories. Select the desired category by touching System, Apps, Vehicle, or Personal.

To access the personalization menus:

1. Touch Settings on the Home Page on the infotainment display.
2. Touch the desired category to display a list of available options.
3. Touch to select the desired feature setting.
4. Touch the options on the infotainment display to disable or enable a feature.

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5. Touch **X** to go to the top level of the Settings menu.

### System

The menu may contain the following:

#### Time / Date

Allows setting of the clock.

#### Language

Sets the display language used on the infotainment display. It may also use the selected language for voice recognition and audio feedback.

#### Phones

Allows connecting to a different cell phone or mobile device source, disconnect a cell phone or media device, or delete a cell phone or media device.

#### Wi-Fi Networks

Shows connected and available Wi-Fi networks.

If a 4G LTE data package is not active on the vehicle, the infotainment system can be connected to an external protected Wi-Fi network, such as a mobile device or home hotspot, to utilize connected services.

### Wi-Fi Hotspot

Allows adjustment of different Wi-Fi features.

#### Privacy

Allows adjustment of the infotainment privacy settings.

#### Display

Allows adjustment of the infotainment display.

#### Sounds

Allows adjustment of the infotainment system sounds.

#### Voice

Allows adjustment of the infotainment voice recognition features.

#### Favorites

Allows adjustment of the infotainment favorite settings.

#### Updates

If equipped, the vehicle can download and install select software updates over a wireless connection. The system will prompt for certain updates to be downloaded and installed. There is also an option to check for updates manually.

To manually check for updates, touch Settings on the Home Page and select the System tab. Go to the Vehicle Software section and touch Updates. Follow the on-screen prompts. The steps to check for, download, and install updates may vary by vehicle.

The vehicle can be used normally during the software download. Once the download is complete, there may be a prompt to accept the installation of the update upon the next ignition cycle or the next time the vehicle is shifted into P (Park). For most updates, the vehicle will be disabled and cannot be driven during the installation. The system will deliver messages indicating success or error during and after the download and installation processes.

Downloading Over-the-Air vehicle software updates requires Internet connectivity, which can be accessed through the vehicle's built-in 4G LTE connection, if equipped and active. If required, data plans are provided by a third party. Optionally, a secure Wi-Fi hotspot such as a compatible mobile device hotspot, home hotspot, or public hotspot can be used. Applicable data rates may apply.

To connect the infotainment system to a secured mobile device hotspot, home hotspot, or public hotspot, touch Settings on the Home Page, select the System tab, followed by Wi-Fi Networks. Select the appropriate Wi-Fi network, and follow the on-screen prompts. Download speeds may vary.

On most compatible mobile devices, activation of the Wi-Fi hotspot is in the Settings menu under Mobile Network Sharing, Personal Hotspot, Mobile Hotspot, or similar.

Availability of Over-the-Air software updates varies by vehicle and country. Features are subject to change. For more information on this feature, see your dealer.

### **Preferences**

Allows the infotainment system to disable or enable the download of new updates in the background.

### **About**

Shows the infotainment system software information.

### **Running Applications**

Shows a complete list of applications that are currently running on the infotainment system.

### **Return to Factory Settings**

Allows resetting the infotainment system settings in the vehicle.

### **Apps**

The menu may contain the following:

#### **Android Auto**

Allows interacting directly with a mobile device on the infotainment display. See *Apple CarPlay and Android Auto* ⇨ 154.

#### **Apple CarPlay**

This feature allows you to interact directly with your mobile device on the infotainment display. See *Apple CarPlay and Android Auto* ⇨ 154.

### **Apps**

Shows app settings and information.

### **Audio**

Adjusts different audio settings.

### **Climate**

Adjusts different climate settings.

### **Navigation**

Adjusts different navigation settings.

See *Using the Navigation System* ⇨ 134.

### **Phone**

Adjusts different phone settings.

### **Vehicle**

The menu may contain the following:

#### **Rear Seat Reminder**

Allows for a chime and a message when the rear door has been opened before or during operation of the vehicle.

#### **Climate and Air Quality**

Adjusts different climate settings.

#### **Collision/Detection Systems**

Adjusts different driver assistance system settings.

#### **Comfort and Convenience**

Adjusts different comfort and convenience settings.

#### **Lighting**

Adjusts different lighting settings.

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### Power Door Locks

Adjusts different door lock settings.

### Remote Lock, Unlock, and Start

Adjusts different remote lock settings.

### Seating Position

Adjusts different seat settings.

### Valet Mode

This will lock the infotainment system and steering wheel controls. It may also limit access to vehicle storage locations, if equipped.

To enable valet mode:

1. Enter a four-digit code on the keypad.
2. Select Enter to go to the confirmation screen.
3. Re-enter the four-digit code.

Touch Lock or Unlock to lock or unlock the system. Touch Back to go back to the previous menu.

### Personal

If equipped, this menu allows adjustment of different user profile settings. See “Users” in *Using the System* ⇨ 125 for information on setting up user profiles.

The menu may contain the following:

#### Name

Touch to edit your user name that will be displayed in the vehicle.

#### Vehicle Account Information

Touch to view the vehicle account information and to change the account password.

An “unverified user account” pop-up will display until the account information verification process has been completed on the Internet. Check your registered e-mail account for an activation e-mail to complete the verification process.

#### Profile Picture

Touch to choose or change your profile picture.

#### Profile Identifiers

Touch to have the vehicle recognize the identifier you choose.

Touch Vehicle Key 1 and/or Vehicle Key 2.

If the remote key is lost or stolen, see your dealer.

### Security

Touch to have your profile secured with a PIN.

Touch No or Yes.

#### Vehicle Name

Touch to edit your vehicle name.

#### Vehicle Account

Touch to view the vehicle account information and to change the account password.

#### Delete Profile

Touch to remove the profile from the vehicle.

Touch Remove or Cancel.

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## 164 Climate Controls

### Climate Controls

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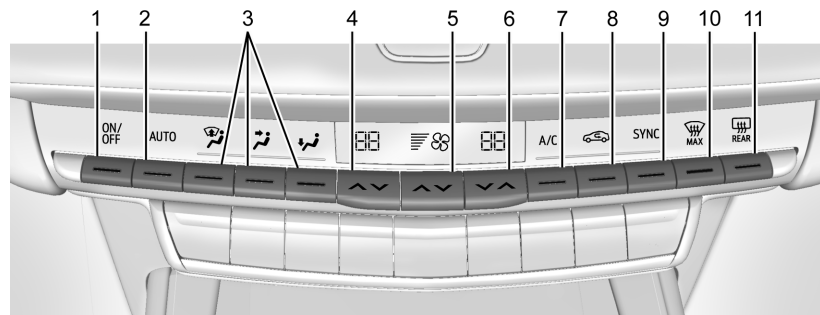
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### Climate Control Systems

#### Dual Automatic Climate Control System

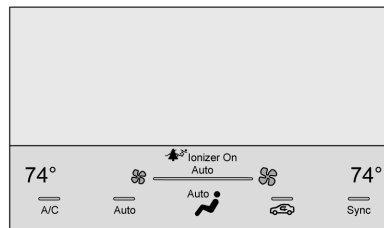
The climate control buttons on the center stack and on the climate control display are used to adjust the heating, cooling, and ventilation.



- |                               |                                    |
|-------------------------------|------------------------------------|
| 1. ON/OFF                     | 6. Passenger Temperature Control   |
| 2. AUTO (Automatic Operation) | 7. A/C (Air Conditioning)          |
| 3. Air Delivery Mode Controls | 8. Recirculation                   |
| 4. Driver Temperature Control | 9. SYNC (Synchronized Temperature) |
| 5. Fan Control                | 10. Max Defrost                    |
|                               | 11. Rear Window Defogger           |

1. Driver and Passenger Temperature Displays
2. Fan Control
3. Driver and Passenger Temperature Controls
4. Sync (Synchronized Temperature)
5. Recirculation
6. Air Delivery Mode Control
7. Auto (Automatic Operation)
8. A/C (Air Conditioning)
9. On/Off (Power)

### Climate Control Status Display



The climate control status display appears briefly when the climate controls are adjusted.

### Automatic Operation


The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.

When AUTO is pressed, all four functions operate automatically. Each function can also be manually set and the selected setting is displayed. Functions not manually set will continue to be automatically controlled, even if the AUTO indicator is not lit.

For automatic operation:

1. Press AUTO.
2. Set the temperature. Allow the system time to stabilize. Adjust the temperature as needed for best comfort.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather.



The recirculation light will not come on when automatically controlled. See  under “Manual Operation” for more details.

During hands free calling the blower level may automatically reduce. The blower level can be manually adjusted if desired.

## 166 Climate Controls




### Manual Operation

**ON/OFF** : Press to turn the system off or on. When off is selected, the system will prevent outside air from entering the vehicle. If any climate control buttons are pressed, the system will turn on and operate at the current setting.

**▲**  or **▼**  : Lift or press to increase or decrease the fan speed. The fan speed setting appears on the main display. Lifting or pressing either button cancels automatic fan control and the fan is controlled manually. Press AUTO to return to automatic operation.


**▲ / ▼** : The temperature can be adjusted separately for the driver and the passenger. Lift or press to increase or decrease the temperature.


**SYNC** : Press to link the passenger temperature settings to the driver setting. The SYNC indicator light will turn on. When the passenger settings are adjusted, the SYNC indicator light turns off.


**Air Delivery Mode Controls** : Press , , or  to change the direction of the airflow. The indicator light in the button will turn on. Any combination of the three


buttons can be selected. The current mode appears in the climate control display. Pressing any of the three buttons cancels automatic air delivery control and the direction of the airflow is controlled manually. Press AUTO to return to automatic operation.

To change the current mode, select one or more of the following:

 : Clears the windows of fog or moisture. Air is directed to the windshield.

 : Air is directed to the instrument panel outlets.


 : Air is directed to the floor outlets.

 **MAX** : Air is directed to the windshield and the fan runs at a higher speed. Fog or frost is cleared from the windshield more quickly. When the button is pressed again, the system returns to the previous mode setting.

For best results, clear all snow and ice from the windshield before defrosting.

**A/C** : Press to turn the air conditioning system on or off. If the climate control system is turned off or the outside temperature falls below freezing, the air conditioner will not run.

Pressing this button cancels automatic air conditioning and turns off the air conditioner. Press AUTO to return to automatic operation and the air conditioner runs automatically 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.


 : Press to turn on recirculation. An indicator light comes on. Air is recirculated to quickly cool the inside of the vehicle or to reduce the 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. The fan speed may slightly increase to help prevent fogging. If the climate control system does not detect possible window fogging, it returns to normal operation. To turn Auto

Defog off or on, select Settings > Climate and Air Quality > Auto Defog > Select ON or OFF.

**Ionizer** : If equipped with an ionizer, this feature helps to clean the air inside the vehicle and remove contaminants such as pollen, odors, and dust. If the climate control system is on and the ionizer is enabled, the ionizer status indicator will be lit on the climate control display. To turn the ionizer off or on, select Settings > Climate and Air Quality > Ionizer > Select ON or OFF.

### Rear Window Defogger

 **REAR** : Press to turn the rear window defogger on or off. An indicator light on the button comes on to show that the rear window defogger is on.

The defogger can be turned off by turning the vehicle off or to accessory mode.

To turn Auto Rear Defog off or on, select Settings > Climate and Air Quality > Auto Rear Defog > Select ON or OFF. 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 7 °C (44 °F) and below. The auto rear defogger turns off automatically.

If equipped, the heated outside mirrors turn on when the rear window defogger button is on and help to clear fog or frost from the surface of the mirror. See *Heated Mirrors* ⇨ 26.

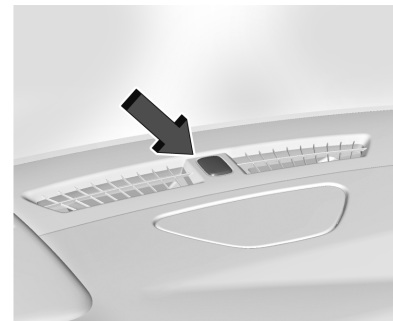
#### Caution

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.

#### Remote Start Climate Control Operation :

If equipped with remote start, the climate control system may run when the vehicle is started remotely. If equipped with heated or ventilated seats or a heated steering wheel, these features may come on during a remote start. See *Remote Vehicle Start* ⇨ 12, *Heated and Ventilated Front Seats* ⇨ 40, and *Heated Steering Wheel* ⇨ 85.

### Sensor



The solar sensor, on top of the instrument panel near the windshield, monitors the solar intensity.

The climate control system uses the sensor information to adjust the temperature, fan speed, recirculation, and air delivery mode for best comfort.

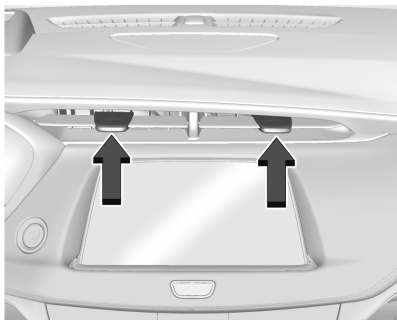
If the sensor is covered, the automatic climate control system may not work properly.

## 168 Climate Controls

### Afterblow Feature

If equipped, under certain conditions, the fan may stay on or may turn on and off several times after you turn off and lock the vehicle. This is normal.

### Air Vents



Adjustable air vents are in the center and on the sides of the instrument panel, and on the rear of the center console storage.

Move the slider knobs to change the direction of or to close off the airflow.

### Operation Tips

- Clear away any ice, snow, or leaves from air inlets at the base of the windshield that could block the flow of air into the vehicle.
- Clear snow off the hood to improve visibility and help decrease moisture drawn into the vehicle.
- Keep the path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.
- Use of non-GM approved hood deflectors can adversely affect the performance of the system. Check with your dealer before adding equipment to the outside of the vehicle.
- Do not attach any devices to the air vent slats. This restricts airflow and may cause damage to the air vents.

### Maintenance

#### Passenger Compartment Air Filter

The filter reduces 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* ⇨ 291.

See your dealer regarding replacement of the filter.

### Service

All vehicles have a label underhood that identifies the refrigerant used in the vehicle. The refrigerant system should only be serviced by trained and certified technicians. The air conditioning evaporator should never be repaired or replaced by one from a salvage vehicle. It should only be replaced by a new evaporator to ensure proper and safe operation.

During service, all refrigerants should be reclaimed with proper equipment. Venting refrigerants directly to the atmosphere is harmful to the environment and may also create unsafe conditions based on inhalation, combustion, frostbite, or other health-based concerns.

The air conditioning system requires periodic maintenance. See *Maintenance Schedule* ⇨ 291.

## **Driving and Operating**

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## 170 Driving and Operating

### Driving Information

#### Driving for Better Fuel Economy

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

- Set the climate controls to the desired temperature after the engine is started, or turn them off when not required.
- On AWD vehicles, use Tour Mode when conditions permit.
- 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.

### Distracted Driving

Distraction comes in many forms and can take your focus from the task of driving. Exercise good judgment and do not let other activities divert your attention away from the road. Many local governments have enacted laws regarding driver distraction. Become familiar with the local laws in your area.

To avoid distracted driving, keep your eyes on the road, keep your hands on the steering wheel, and focus your attention on driving.

- Do not use a phone in demanding driving situations. Use a hands-free method to place or receive necessary phone calls.
- Watch the road. Do not read, take notes, or look up information on phones or other electronic devices.
- Designate a front seat passenger to handle potential distractions.
- Become familiar with vehicle features before driving, such as programming favorite radio stations and adjusting climate control and seat settings. Program all trip information into any navigation device prior to driving.

- Wait until the vehicle is parked to retrieve items that have fallen to the floor.
- Stop or park the vehicle to tend to children.
- Keep pets in an appropriate carrier or restraint.
- Avoid stressful conversations while driving, whether with a passenger or on a cell phone.

#### Warning

Taking your eyes off the road too long or too often could cause a crash resulting in injury or death. Focus your attention on driving.

Refer to the infotainment section for more information on using that system and the navigation system, if equipped, including pairing and using a cell phone.

### Defensive Driving

Defensive driving means “always expect the unexpected.” The first step in driving defensively is to wear the seat belt. See *Seat Belts* ⇨ 43.

- Assume that other road users (pedestrians, bicyclists, and other drivers) are going to be careless and make mistakes. Anticipate what they may do and be ready.
- Allow enough following distance between you and the driver in front of you.
- Focus on the task of driving.

## 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.

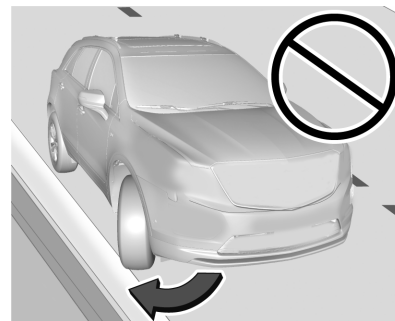
- Keep pace with traffic.

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

#### Caution

To avoid damage to the steering system, do not drive over curbs, parking barriers, or similar objects at speeds greater than 3 km/h (1 mph). Use care when driving over other objects such as lane dividers and speed bumps. Damage caused by misuse of the vehicle is not covered by the vehicle warranty.



### Electric Power Steering

The vehicle is equipped with an electric power steering system, which reduces the amount of effort needed to steer the vehicle. It does not have power steering fluid. Regular maintenance is not required.

If the vehicle experiences a system malfunction and loses power steering, greater steering effort may be required. Power steering assist also may be reduced if you turn the steering wheel as far as it can turn and hold it there with force for an extended period of time.

See your dealer if there is a problem.

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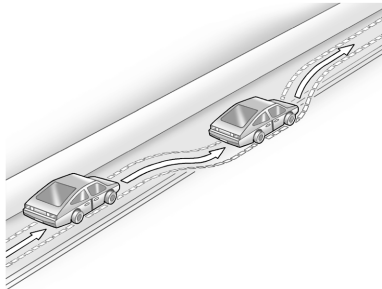
### Curve Tips

- 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.

If the vehicle starts to slide, follow these suggestions:

- Ease your foot off the accelerator pedal and steer the way you want the vehicle to go. The vehicle may straighten out. Be ready for a second skid if it occurs.
- Slow down and adjust your driving according to weather conditions. Stopping distance can be longer and vehicle control can be affected when traction is reduced by water, snow, ice, gravel, or other material on the road. Learn to recognize

warning clues — such as enough water, ice, or packed snow on the road to make a mirrored surface — and slow down when you have any doubt.

- Try to avoid sudden steering, acceleration, or braking, including reducing vehicle speed by shifting to a lower gear. Any sudden changes could cause the tires to slide.

Remember: Antilock brakes help avoid only the braking skid.

## Off-Road Driving

All-Wheel Drive (AWD) vehicles can be used for off-road driving. Vehicles without AWD and vehicles not equipped with All Terrain (AT) or On-Off Road (OOR) tires must not be driven off-road except on a level, solid surface. To contact the tire manufacturer for more information about the original equipment tires, see the warranty manual.

Controlling the vehicle is the key to successful off-road driving. One of the best ways to control the vehicle is to control the speed.

### Warning

When driving off-road, bouncing and quick changes in direction can easily throw you out of position. This could cause you to lose control and crash. You and your passengers should always wear seat belts.

### Before Driving Off-Road

- Have all necessary maintenance and service work completed.
- Fuel the vehicle, fill fluid levels, and check inflation pressure in all tires, including the spare, if equipped.
- Read all the information about AWD vehicles in this manual.
- Make sure all underbody shields, if equipped, are properly attached.
- Know the local laws that apply to off-road driving.

To gain more ground clearance if needed, it may be necessary to remove the front fascia lower air dam. However, driving without the air dam reduces fuel economy.

### Caution

Operating the vehicle for extended periods without the front fascia lower air dam installed can cause improper airflow to the engine. Reattach the front fascia air dam after off-road driving.

### Loading the Vehicle for Off-Road Driving

#### Warning

- Unsecured cargo on the load floor can be tossed about when driving over rough terrain. You or your passengers can be struck by flying objects. Secure the cargo properly.
- Keep cargo in the cargo area as far forward and as low as possible. The heaviest things should be on the floor, forward of the rear axle.
- Heavy loads on the roof raise the vehicle's center of gravity, making it more likely to roll over. You can be seriously or fatally injured if the vehicle rolls over. Put heavy loads inside the cargo area, not on the roof.

For more information about loading the vehicle, see *Vehicle Load Limits* ⇨ 179.

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### Environmental Concerns

- Always use established trails, roads, and areas that have been set aside for public off-road recreational driving and obey all posted regulations.
- Do not damage shrubs, flowers, trees, or grasses or disturb wildlife.
- Do not park over things that burn. See *Parking over Things That Burn* ⇨ 187.

### Driving on Hills

Driving safely on hills requires good judgment and an understanding of what the vehicle can and cannot do.

#### Warning

Many hills are simply too steep for any vehicle. Driving up hills can cause the vehicle to stall. Driving down hills can cause loss of control. Driving across hills can cause a rollover. You could be injured or killed. Do not drive on steep hills.

Before driving on a hill, assess the steepness, traction, and obstructions. If the terrain ahead cannot be seen, get out of the vehicle and walk the hill before driving further.

When driving on hills:

- Use a low gear and keep a firm grip on the steering wheel.
- Maintain a slow speed.
- When possible, drive straight up or down the hill.
- Slow down when approaching the top of the hill.

#### Warning

Driving to the top of a hill at high speed can cause a crash. There could be a drop-off, embankment, cliff, or even another vehicle. You could be seriously injured or killed. As you near the top of a hill, slow down and stay alert.

- Use headlamps even during the day to make the vehicle more visible.
- Never go downhill forward or backward with the transmission in N (Neutral). The brakes could overheat and you could lose control.
- When driving down a hill, keep the vehicle headed straight down. Use a low gear because the engine will work with the brakes to slow the vehicle and help keep the vehicle under control.

#### Warning

Heavy braking when going down a hill can cause your brakes to overheat and fade. This could cause loss of control and you or others could be injured or killed. Apply the brakes lightly when descending a hill and use a low gear to keep vehicle speed under control.

- Avoid turns that take the vehicle across the incline of the hill. Driving across an incline puts more weight on the downhill wheels, which could cause a downhill slide or a rollover.
- Loose gravel, muddy spots, or even wet grass can cause the tires to slip sideways, downhill. If the vehicle slips sideways, it can hit something and potentially roll over.
- Hidden obstacles can make the steepness of the incline more severe. If a rock is driven across with the uphill wheels, or if the downhill wheels drop into a rut or depression, the vehicle can tilt even more.
- If an incline must be driven across and the vehicle starts to slide, turn downhill. This should help straighten out the vehicle and prevent side slipping.

If the vehicle stalls on a hill:

1. Apply the brakes to stop the vehicle, and then apply the parking brake.
2. Shift into P (Park) and then restart the engine.
  - If driving uphill when the vehicle stalls, shift to R (Reverse), release the parking brake, and back straight down.
  - Never try to turn the vehicle around. If the hill is steep enough to stall the vehicle, it is steep enough to cause it to roll over.
  - If you cannot make it up the hill, back straight down the hill.
  - Never back down a hill in N (Neutral) using only the brake.
  - The vehicle can roll backward quickly and you could lose control.
  - If driving downhill when the vehicle stalls, shift to a lower gear, release the parking brake, and drive straight down the hill.
3. If the vehicle cannot be restarted after stalling, set the parking brake, shift into P (Park), and turn the vehicle off.
  - 3.1. Leave the vehicle and seek help.

- 3.2. Stay clear of the path the vehicle would take if it rolled downhill.

#### Warning

Getting out of the vehicle on the downhill side when stopped across an incline is dangerous. If the vehicle rolls over, you could be crushed or killed. Always get out on the uphill side of the vehicle and stay well clear of the rollover path.

#### Driving in Mud, Sand, Snow, or Ice

Use a low gear when driving in mud — the deeper the mud, the lower the gear. Keep the vehicle moving to avoid getting stuck.

Traction changes when driving on sand. On loose sand, such as on beaches or sand dunes, the tires tend to sink into the sand. This affects steering, accelerating, and braking. Drive at a reduced speed and avoid sharp turns or abrupt maneuvers.

Traction is reduced on hard packed snow and ice and it is easy to lose control. Reduce vehicle speed when driving on hard packed snow and ice.

#### Warning

Driving on frozen lakes, ponds, or rivers can be dangerous. Ice conditions vary greatly and the vehicle could fall through the ice; you and your passengers could drown. Drive your vehicle on safe surfaces only.

#### Driving in Water

#### Warning

Driving through rushing water can be dangerous. Deep water can sweep your vehicle downstream and you and your passengers could drown. If it is only shallow water, it can still wash away the ground from under your tires. Traction could be lost, and the vehicle could roll over. Do not drive through rushing water.

#### Caution

Do not drive through standing water if it is deep enough to cover the wheel hubs, axles, or exhaust pipe. Deep water can damage the axle and other vehicle parts.

## 176 Driving and Operating

If the standing water is not too deep, drive through it slowly. At faster speeds, water can get into the engine and cause it to stall. Stalling can occur if the exhaust pipe is under water. Do not turn off the ignition when driving through water. If the exhaust pipe is under water, the engine will not start. When going through water, the brakes get wet, and it might take longer to stop. See *Driving on Wet Roads* ⇨ 176.

### After Off-Road Driving

Remove any brush or debris that has collected on the underbody or chassis, or under the hood. These accumulations can be a fire hazard.

After operation in mud or sand, have the brake linings cleaned and checked. These substances can cause glazing and uneven braking. Check the body structure, steering, suspension, wheels, tires, and exhaust system for damage and check the fuel lines and cooling system for any leakage.

More frequent maintenance service is required. See *Maintenance Schedule* ⇨ 291.

## Driving on Wet Roads

Rain and wet roads can reduce vehicle traction and affect your ability to stop and accelerate. Always drive slower in these types of driving conditions and avoid driving through large puddles and deep-standing or flowing water.

### Warning

Wet brakes can cause crashes. They might not work as well in a quick stop and could cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car/vehicle wash, lightly apply the brake pedal until the brakes work normally.

Flowing or rushing water creates strong forces. Driving through flowing water could cause the vehicle to be carried away. If this happens, you and other vehicle occupants could drown. Do not ignore police warnings and be very cautious about trying to drive through flowing water.

## Hydroplaning

Hydroplaning is dangerous. Water can build up under the vehicle's tires so they actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When the vehicle is hydroplaning, it has little or no contact with the road.

There is no hard and fast rule about hydroplaning. The best advice is to slow down when the road is wet.

### Other Rainy Weather Tips

Besides slowing down, other wet weather driving tips include:

- Allow extra following distance.
- Pass with caution.
- Keep windshield wiping equipment in good shape.
- Keep the windshield washer fluid reservoir filled.
- Have good tires with proper tread depth. See *Tires* ⇨ 260.
- Turn off cruise control.
- Activate All-Wheel Drive (AWD) mode. See *Driver Mode Control* ⇨ 197.

## Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, tires, cooling system, and transmission.
- Shift to a lower gear when going down steep or long hills.

### Warning

Using the brakes to slow the vehicle on a long downhill slope can cause brake overheating, can reduce brake performance, and could result in a loss of braking. Shift the transmission to a lower gear to let the engine assist the brakes on a steep downhill slope.

### Warning

Coasting downhill in N (Neutral) or with the ignition off is dangerous. This can cause overheating of the brakes and loss of steering assist. Always have the engine running and the vehicle in gear.

- Drive at speeds that keep the vehicle in its own lane. Do not swing wide or cross the center line.
- Be alert on top of hills; something could be in your lane (e.g., stalled car, crash).
- Pay attention to special road signs (e.g., falling rocks area, winding roads, long grades, passing or no-passing zones) and take appropriate action.
- Select All-Wheel Drive (AWD) Mode. See *Driver Mode Control* ⇨ 197 and *All-Wheel Drive* ⇨ 193.

## Winter Driving

### Driving on Snow or Ice

#### Caution

To avoid damage to the wheels and brake components, always clear snow and ice from inside the wheels and underneath the vehicle before driving.

Snow or ice between the tires and the road creates less traction or grip, so drive carefully. Wet ice can occur at about 0 °C (32 °F) when freezing rain begins to fall. Avoid driving on wet ice or in freezing rain until roads can be treated.

### For Slippery Road Driving:

- Accelerate gently. Accelerating too quickly causes the wheels to spin and makes the surface under the tires slick.
- Turn on Traction Control. See *Traction Control/Electronic Stability Control* ⇨ 196.
- The Antilock Brake System (ABS) improves vehicle stability during hard stops, but the brakes should be applied sooner than when on dry pavement. See *Antilock Brake System (ABS)* ⇨ 193.
- Allow greater following distance and watch for slippery spots. Icy patches can occur on otherwise clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering maneuvers and braking while on ice.
- Turn off cruise control.
- Select All-Wheel Drive (AWD) Mode for vehicles equipped with AWD. Select Snow/Ice Mode for FWD only vehicles. See *Driver Mode Control* ⇨ 197 and *All-Wheel Drive* ⇨ 193.

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### Cold Weather Mode

In very low temperatures, a cold weather message may display on the Driver Information Center (DIC). The engine speed, transmission shift patterns, and cabin fan speed may operate differently to enable the vehicle to warm up quicker. You can manually override the cabin fan speed in cold weather mode.

### Blizzard Conditions

Stop the vehicle in a safe place and signal for help. Stay with the vehicle unless there is help nearby. To get help and keep everyone in the vehicle safe:

- Turn on the hazard warning flashers.
- Tie a red cloth to an outside mirror.

#### Warning

Snow can trap engine exhaust under the vehicle. This may cause exhaust gases to get inside. Engine exhaust contains carbon monoxide (CO), which cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle is stuck in snow:

(Continued)

#### Warning (Continued)

- Clear snow from the base of the vehicle, especially any blocking the exhaust pipe.
- Open a window about 5 cm (2 in) on the vehicle side that is away from the wind, to bring in fresh air.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to circulate the air inside the vehicle and set the fan speed to the highest setting. See “Climate Control Systems.”

For more information about CO, see *Engine Exhaust* ⇨ 187.

To save fuel, run the engine for short periods to warm the vehicle and then shut the engine off and partially close the window. Moving about to keep warm also helps.

If it takes time for help to arrive, when running the engine, push the accelerator pedal slightly so the engine runs faster than the idle speed. This keeps the battery

charged to restart the vehicle and to signal for help with the headlamps. Do this as little as possible, to save fuel.

### If the Vehicle Is Stuck

Slowly and cautiously spin the wheels to free the vehicle when stuck in sand, mud, ice, or snow.

If stuck too severely for the traction system to free the vehicle, turn the traction system off and use the rocking method. See *Traction Control/Electronic Stability Control* ⇨ 196.

#### 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).

For All-Wheel Drive (AWD), select Off-Road or AWD mode. See *Driver Mode Control* ⇨ 197 and *All-Wheel Drive* ⇨ 193.

### 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 *Transporting a Disabled Vehicle* ⇨ 280.

### Vehicle Load Limits

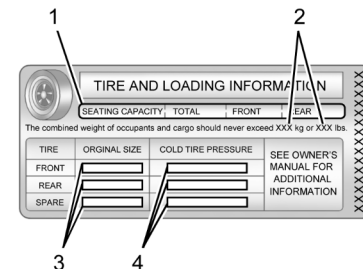
It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all nonfactory-installed options. Two labels on the vehicle may show how much

weight it may properly carry, the Tire and Loading Information label and the Certification/Tire label.

#### Warning

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also reduce stopping performance, damage the tires, and shorten the life of the vehicle.

### Tire and Loading Information Label



#### Example Label

A vehicle-specific Tire and Loading Information label is attached to the center pillar (B-pillar). The Tire and Loading Information label shows the number of occupant seating positions (1), and the maximum vehicle capacity weight (2) in kilograms and pounds.

The Tire and Loading Information label also shows the size of the original equipment tires (3) and the recommended cold tire inflation

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pressures (4). For more information on tires and inflation see *Tires* ⇨ 260 and *Tire Pressure* ⇨ 261.

There is also important loading information on the vehicle Certification/Tire label. It may show the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle. See "Certification/Tire Label" later in this section.

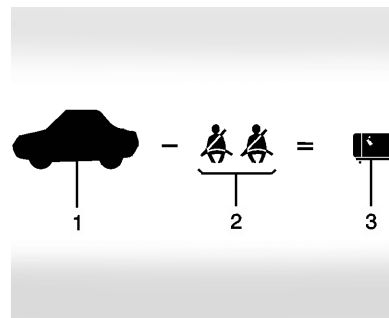
### "Steps for Determining Correct Load Limit–

1. Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs." on your vehicle's placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example,

if the "XXX" amount equals 1400 lbs. and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.)

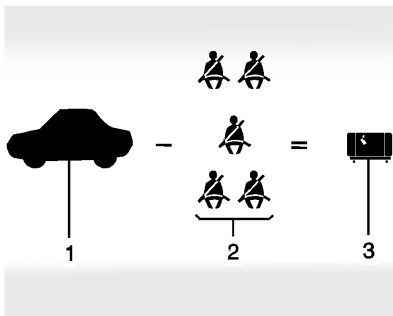
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle."

This vehicle is neither designed nor intended to tow a trailer.



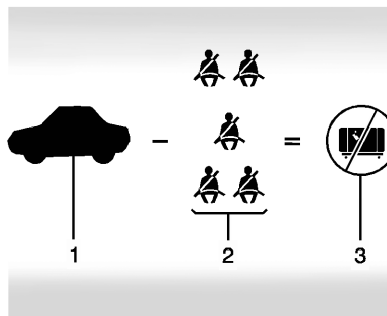
Example 1

1. Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 68 kg (150 lbs) × 2 = 136 kg (300 lbs).
3. Available Occupant and Cargo Weight = 317 kg (700 lbs).



Example 2

1. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 68 kg (150 lbs)  $\times$  5 = 340 kg (750 lbs).
3. Available Cargo Weight = 113 kg (250 lbs).

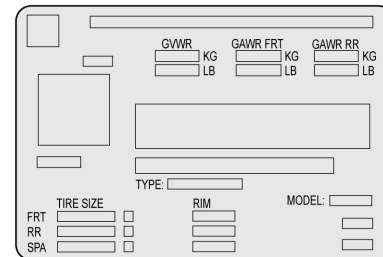


Example 3

1. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs).
2. Subtract Occupant Weight @ 91 kg (200 lbs)  $\times$  5 = 453 kg (1,000 lbs).
3. Available Cargo Weight = 0 kg (0 lbs).

Refer to your vehicle's Tire and Loading Information label for specific information about your vehicle's capacity weight and seating positions. The combined weight of the driver, passengers, and cargo should never exceed your vehicle's capacity weight.

### Certification/Tire Label



### Label Example

A vehicle-specific Certification/Tire label is attached to the center pillar (B-pillar).

The label may show the size of the vehicle's original tires and the inflation pressures needed to obtain the gross weight capacity of the vehicle. The label shows the gross weight capacity of the vehicle. This is called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo.

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The Certification/Tire label may also show the maximum weights for the front and rear axles, called the Gross Axle Weight Rating (GAWR). To find out the actual loads on the front and rear axles, weigh the vehicle at a weigh station. Your dealer can help with this. Be sure to spread the load equally on both sides of the centerline.

### Caution

Overloading the vehicle may cause damage. Repairs would not be covered by the vehicle warranty. Do not overload the vehicle.

### Warning

Things you put inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. Try to spread the weight evenly.

(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.
- When you carry something inside the vehicle, secure it whenever you can.
- Do not leave a seat folded down unless you need to.

## 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:

(Continued)

### Caution (Continued)

- Do not drive at any one constant speed, fast or slow, for the first 800 km (500 mi). Do not make full-throttle starts. Avoid downshifting to brake or slow the vehicle.
- Avoid making hard stops for the first 300 km (200 mi) or so. During this time the new brake linings are not yet broken in. Hard stops with new linings can mean premature wear and earlier replacement. Follow this breaking-in guideline every time you get new brake linings.

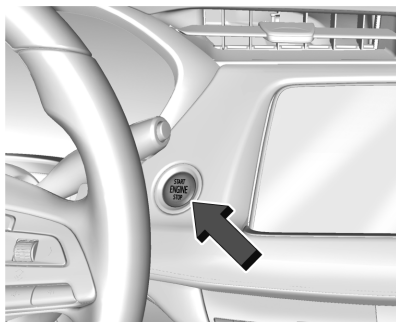
Following break-in, engine speed and load can be gradually increased.

On new vehicles, the various mechanical and electrical systems experience a “break-in” period during the first 6,400 km (4,000 miles) of routine driving. As the vehicle is driven, the mechanical systems adjust to provide optimal fuel economy and transmission shift performance.

Electrical systems will adapt and calibrate during the break-in period. A one-time occurrence of clicks and similar vehicle noises is normal during this process.

Normal driving charges the vehicle's battery to achieve the best operation of the vehicle, including fuel economy and the Stop/Start System. See *Stop/Start System* ⇨ 185.

## Ignition Positions



The vehicle has an electronic keyless ignition with pushbutton start.

If the pushbutton start is not working, the vehicle may be near a strong radio antenna signal causing interference to the Keyless Access system. See *Remote Key Operation* ⇨ 7.

To shift out of P (Park), the vehicle must be turned on and the brake pedal must be applied.

**Stopping the Engine/OFF (No Indicator Light) :** When the vehicle is stopped, press ENGINE START/STOP once to turn the engine off.

If the vehicle is in P (Park), the ignition will turn off, and Retained Accessory Power (RAP) will remain active. See *Retained Accessory Power (RAP)* ⇨ 185.

If the vehicle is in R (Reverse), D (Drive) or M (Manual Mode), the vehicle will shift to P (Park), the ignition will turn off, and RAP will remain active.

If the vehicle is in N (Neutral), the ignition will return to accessory mode and display the message SHIFT TO PARK in the Driver Information Center (DIC).

When the vehicle is shifted into P (Park), the ignition will turn off.

### 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 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 and shift to P (Park).
4. Set the parking brake. See *Electric Parking Brake* ⇨ 194. Press ENGINE START/STOP to turn the vehicle off.

If the vehicle cannot be pulled over and must be shut off while driving, press and hold ENGINE START/STOP for longer than two seconds, or press twice in five seconds.

### **Accessory Mode (Amber Indicator Light) :**

This mode allows you to use some electrical accessories when the engine is off.

With the ignition off, pressing ENGINE START/STOP once without the brake pedal applied will place the ignition system in accessory mode.

The ignition will switch from accessory mode to OFF after 10 minutes to prevent battery rundown.

## 184 Driving and Operating

**ON/RUN/START (Green Indicator Light)** : This mode is for driving and starting. With the ignition off and the brake pedal applied, pressing ENGINE START/STOP once will place the ignition system in ON/RUN/START. Once engine cranking begins, release the button. Engine cranking will continue until the engine starts. The ignition will then remain on. See *Starting the Engine* ⇨ 184.

### Service Mode

This mode is available to verify the proper operation of the malfunction indicator lamp as may be required for emissions inspection purposes and for service and diagnostics. See *Automatic Transmission* ⇨ 188.

With the vehicle off, and the brake pedal not applied, pressing and holding ENGINE START/STOP for more than five seconds will place the vehicle in Service Mode. The instruments and audio systems will operate as they do in ON/RUN, but the vehicle will not be able to be driven. The engine will not start in Service Mode. Press ENGINE START/STOP again to turn the vehicle off.

## Starting the Engine

Place the transmission in the proper gear, P (Park) or N (Neutral). To restart the engine when the vehicle is already moving, use N (Neutral).

### 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* ⇨ 230.

To start the vehicle:

1. With the Keyless Access system, the remote key must be in the vehicle. Press ENGINE START/STOP with the brake pedal applied. When the engine begins cranking, let go of the button. The idle speed will go down as the engine warms up. Do not race the engine immediately after starting it.

If the remote key is not in the vehicle, if there is interference, or if the remote key battery is low, a Driver Information Center (DIC) message will display. See *Remote Key Operation* ⇨ 7.

### Caution

Cranking the engine for long periods of time, by pressing ENGINE START/STOP immediately after cranking has ended, can overheat and damage the cranking motor, and drain the battery. Wait at least 15 seconds between each try, to let the cranking motor cool down.

2. If the engine does not start after five to 10 seconds, especially in very cold weather (below -18 °C or 0 °F), it could be flooded with too much gasoline. Try pushing the accelerator pedal all the way to the floor and hold it there, then press ENGINE START/STOP for up to a maximum of 15 seconds. Wait at least 15 seconds between each try, to allow the cranking motor to cool down. When the engine starts, let go of the button and the accelerator. If the vehicle starts briefly but then stops again, do the same thing. This clears the extra gasoline from the engine. Do not race the engine

immediately after starting it. Operate the engine and transmission gently until the oil warms up and lubricates all moving parts.

## Stop/Start System

The Stop/Start system will shut off the engine to help conserve fuel. It has components designed for the increased number of starts.

### Warning

The automatic engine Stop/Start feature causes the engine to shut off while the vehicle is still on. Do not exit the vehicle before shifting to P (Park). The vehicle may restart and move unexpectedly. Always shift to P (Park), and then turn the ignition off before exiting the vehicle.

### Auto Engine Stop/Start

When the brakes are applied and the vehicle is at a complete stop, the engine may turn off. When stopped, the tachometer displays AUTO STOP. See *Tachometer* ⇨ 96. When the brake pedal is released or the accelerator pedal is pressed, the engine will restart.

To maintain vehicle performance, other conditions may cause the engine to automatically restart before the brake pedal is released.


Auto Stops may not occur and/or Auto Starts may occur because:


- The climate control settings require the engine to be running to cool or heat the vehicle interior.
- The vehicle battery needs to charge.
- The vehicle battery has recently been disconnected.
- Minimum vehicle speed has not been reached since the last Auto Stop.
- The accelerator pedal is pressed.
- The engine or transmission is not at the required operating temperature.
- The outside temperature is not in the required operating range.
- The vehicle transmission is shifted out of D (Drive) to any gear other than P (Park).
- Certain driver modes have been selected. See *Driver Mode Control* ⇨ 197.
- The vehicle is on a steep hill or grade.
- The driver door has been opened or the driver seat belt has been unbuckled.
- The hood has been opened.

- The Auto Stop has reached the maximum allowed time.

### Auto Stop Disable Switch



The automatic engine Stop/Start feature can be disabled and enabled by pressing . Auto Stop/Start is enabled each time you start the vehicle.

When the  indicator is illuminated, the system is enabled.

### Retained Accessory Power (RAP)

When the vehicle is turned from on to off, the following features (if equipped) will continue to function for up to 10 minutes,

## 186 Driving and Operating

or until the driver door is opened. These features will also work when the vehicle is on or in accessory mode:

- Infotainment System
- Power Windows (during RAP this functionality will be lost when any door is opened)
- Sunroof (during RAP this functionality will be lost when any door is opened)
- Auxiliary Power Outlet
- Audio System
- OnStar System

### Shifting Into Park

To shift into P (Park):

1. Hold the brake pedal down and set the Electric Parking Brake (EPB). See *Electric Parking Brake* ⇨ 194.
2. Press the button on top of the shift lever to shift into P (Park). See *Automatic Transmission* ⇨ 188.
3. The P indicator on the shift lever will turn red when the vehicle is in P (Park).

If the vehicle is shifted into P (Park) on a hill, the EPB may apply automatically. You may not be able to release the EPB

using the EPB switch. It should automatically release when the vehicle is shifted out of P (Park).

### Leaving the Vehicle with the Engine Running

#### Warning

It can be dangerous to leave the vehicle with the engine running. It could overheat and catch fire.

It is dangerous to get out of the vehicle if the vehicle is not 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 shift to P (Park).

If you have to leave the vehicle with the engine running, be sure the vehicle is in P (Park) and the EPB is set before you leave it.

### Shifting out of Park

This vehicle is equipped with an electronic transmission. The shift lock release button is designed to prevent inadvertent shifting out of P (Park).

To shift out of P (Park):

1. Ensure the engine is running.
2. Apply the brake pedal.
3. Press and hold the shift lock release button.
4. Move the shift lever to the desired position.
5. The P indicator will turn white and the gear indicator on the shift lever will turn red when the vehicle is no longer in P (Park).
6. After releasing the shift lever, it will return to the center position.

If the vehicle cannot shift from P (Park), a Driver Information Center (DIC) message may be displayed. Check that the ignition is on, the engine is running, the brake pedal is applied, and the shift lock release button is pressed when you are attempting to shift out of P (Park). If all of these are met but the vehicle will not shift out of P (Park), see your dealer for service.

## Parking over Things That Burn



### Warning

Things that can burn could touch hot exhaust parts under the vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

## Active Fuel Management

This vehicle's engine may be equipped with Active Fuel Management, which allows the engine to operate on either all of its cylinders, or in reduced cylinder operation mode, depending on the driving conditions.

When less power is required, such as cruising at a constant vehicle speed, the system will operate in reduced cylinder operation mode, allowing the vehicle to achieve better fuel economy. When greater power demands are required, such as accelerating from a stop, passing, or merging onto a freeway, the system will maintain full-cylinder operation.

If the vehicle has an Active Fuel Management indicator, see Driver Information Center (DIC) for more information on using this display.

## Extended Parking

It is best not to park with the vehicle running. If the vehicle is left running, be sure it will not move and there is adequate ventilation.

See *Shifting Into Park* ⇨ 186 and *Engine Exhaust* ⇨ 187.

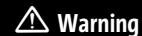
If the vehicle is left parked and running with the remote key outside the vehicle, it will continue to run for up to 15 minutes.

If the vehicle is left parked and running with the remote key inside the vehicle, it will continue to run for up to 30 minutes.

The vehicle could turn off sooner if it is parked on a hill, due to lack of available fuel.

The timer will reset if the vehicle is taken out of P (Park) while it is running.

## Engine Exhaust



### Warning

Engine exhaust contains carbon monoxide (CO), which cannot be seen or smelled. Exposure to CO can cause unconsciousness and even death.

Exhaust may enter the vehicle if:

- The vehicle idles in areas with poor ventilation (parking garages, tunnels, deep snow that may block underbody airflow or tail pipes).
- The exhaust smells or sounds strange or different.
- The exhaust system leaks due to corrosion or damage.
- The vehicle exhaust system has been modified, damaged, or improperly repaired.
- There are holes or openings in the vehicle body from damage or aftermarket modifications that are not completely sealed.

(Continued)

## 188 Driving and Operating

### Warning (Continued)

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*

⇨ 186 and

*Engine Exhaust* ⇨ 187.

### Automatic Transmission



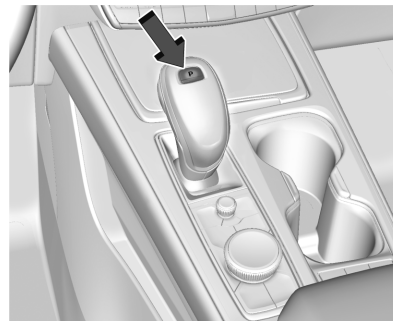
The shift pattern is displayed in the top of the shift lever. The selected gear position will illuminate red on the shift lever, while all others will be displayed in white. If the shift is not immediate, as in very cold conditions, the indicator on the shift lever may flash until it is fully engaged.

The shift lever always starts from a center position, represented by an up/down arrow on the shift pattern. After releasing the shift lever, it will return to the center position.

The transmission does not operate when the vehicle is off.

If the vehicle is in accessory mode, the transmission can be shifted into P (Park).

If the vehicle is turned off while at a relatively high vehicle speed, the transmission will automatically shift to N (Neutral). Once the vehicle is stopped, P (Park) is automatically selected.

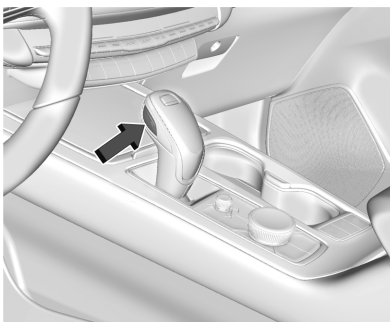


**P** : This position locks the drive wheels. Use P (Park) when starting the engine to prevent the vehicle from moving easily.

 **Warning**

It is dangerous to get out of the vehicle if the transmission is not in P (Park) with the parking brake set. The vehicle can roll.

Do not leave the vehicle when the engine is running. If the engine has been left running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when on fairly level ground, always set the parking brake and place the transmission into P (Park). See *Shifting Into Park* ⇨ 186 and *Electric Parking Brake* ⇨ 194.



This vehicle is equipped with an electronically controlled transmission. The shift lock release button is designed to prevent inadvertent shifting out of P (Park) unless the ignition is on, the brake pedal is applied, and the shift lock release button is pressed.

When the vehicle is stopped, press ENGINE START/STOP to turn off the vehicle. The transmission will shift to P (Park) automatically unless the vehicle is in N (Neutral). See “Car Wash Mode” following.

The vehicle will not shift into P (Park) if it is moving too fast. Stop the vehicle and shift into P (Park).

To shift in and out of P (Park), see *Shifting Into Park* ⇨ 186 and *Shifting out of Park* ⇨ 186.

**Service Shift Lever Message**

If the message SERVICE SHIFTER SEE OWNER’S MANUAL appears in the Driver Information Center (DIC), the shift lever needs service. Have the vehicle serviced as soon as possible. If the vehicle is automatically shifting into P (Park), check to see if the P (Park) button on top of the shift lever is stuck. To operate the vehicle, hold the shift lever in the desired gear, R (Reverse) or D (Drive), until vehicle speed exceeds 15 km/h (10 mph), then release the shift lever.

**R** : Use this gear to back up.

If the vehicle is shifted from either R (Reverse) to D (Drive) or M (Manual Mode), or M (Manual Mode) or D (Drive) to R (Reverse) while the speed is too high, the vehicle will shift to N (Neutral). Reduce the vehicle speed and try the shift again.

To shift into R (Reverse):

1. Bring the vehicle to a complete stop.
2. Press and hold shift lock release button on the side of the shift lever.

## 190 Driving and Operating

3. From the center position, move the shift lever forward through the first detent to the end of travel. R is illuminated in red.
4. After releasing the shift lever, it will return to the center position.

To shift out of R (Reverse):

1. Bring the vehicle to a complete stop.
2. Shift to the desired gear.
3. After releasing the shift lever, it will return to the center position.

At low vehicle speeds, R (Reverse) can be used 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* ⇨ 178.

**N** : In this position, the engine does not connect with the wheels. To restart the engine when the vehicle is already moving, use N (Neutral) only.

### Warning

Shifting into a drive gear while the engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, the vehicle could move very rapidly. You could lose control and

(Continued)

### Warning (Continued)

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.

The vehicle is not designed to stay in N (Neutral) for more than five minutes. It may automatically shift into P (Park). N (Neutral) is not intended for towing. If the vehicle needs to be towed, see *Transporting a Disabled Vehicle* ⇨ 280.

To shift into N (Neutral):

1. Move the shift lever forward to the first detent from the center position.
  - If the vehicle is in P (Park), apply the brake pedal and press the shift lock release button while moving the shift lever forward.

- N will illuminate in red.

2. After releasing the shift lever, it will return to the center position.

To shift out of N (Neutral):

1. Bring the vehicle to a complete stop.
2. Shift to the desired gear. If shifting from N (Neutral) to R (Reverse), press the shift lock release button.
3. After releasing the shift lever, it will return to the center position.

### Car Wash Mode

This vehicle includes a Car Wash Mode that allows the vehicle to remain in N (Neutral) for use in automatic car washes.

### Car Wash Mode (Engine Off – Driver in Vehicle)

To place the vehicle in N (Neutral) with the engine off and the vehicle occupied:

1. Drive to the entrance of the car wash.
2. Apply the brake pedal.
3. Shift to N (Neutral).
4. Turn off the engine and release the brake pedal.
5. The indicator should continue to show N. If it does not, repeat Steps 2–4.

6. The vehicle is now ready for the car wash.

**Car Wash Mode (Engine Off – Driver out of Vehicle)**

To place the vehicle in N (Neutral) with the engine off and the vehicle unoccupied:

1. Drive to the entrance of the car wash.
2. Apply the brake pedal.
3. Open the door.
4. Shift to N (Neutral).
5. Turn off the engine and release the brake pedal.
6. The indicator should continue to show N. If it does not, repeat Steps 2–5.
7. Exit the vehicle and close the door. The vehicle is now ready for the car wash.
8. The vehicle may automatically shift to P (Park) upon re-entry.

**Car Wash Mode (Engine On – Driver in Vehicle)**

To place the vehicle in N (Neutral) with the engine on and the vehicle occupied:

1. Drive to the entrance of the car wash.
2. Apply the brake pedal.
3. Shift to N (Neutral).

4. Release the brake pedal. The vehicle is now ready for the car wash.

**Car Wash Mode (Engine On – Driver out of Vehicle)**

To place the vehicle in N (Neutral) with the engine on and the vehicle unoccupied:

1. Drive to the entrance of the car wash.
2. Apply the brake pedal.
3. Open the door.
4. Shift to N (Neutral), then release the brake pedal.
5. The indicator should continue to show N. If it does not, repeat Steps 2–4.
6. Exit the vehicle and close the door. The vehicle is now ready for the car wash.
7. The vehicle may automatically shift to P (Park) upon re-entry.

**Caution**

A transmission hot message may display if the automatic transmission fluid is too hot. Driving under this condition can damage the vehicle. Stop and idle the engine to cool the automatic

(Continued)

**Caution (Continued)**

transmission fluid. This message clears when the transmission fluid has cooled sufficiently.

**D** : This position is for normal driving. If more power is needed for passing, press the accelerator pedal down.

To shift into D (Drive):

1. Bring the vehicle to a complete stop.
2. From the center position, move the shift lever back.
  - If the vehicle is in P (Park), press the shift lock release button while pulling the shift lever back.
  - D will illuminate in red.
  - After releasing the shift lever, it will return to the center position.

To shift out of D (Drive):

1. Bring the vehicle to a complete stop.
2. Shift to the desired gear.
3. After releasing the shift lever, it will return to the center position.

Downshifting the transmission in slippery road conditions could result in skidding. See “Skidding” under *Loss of Control* ⇨ 172.

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### Caution

Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If the vehicle is stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.

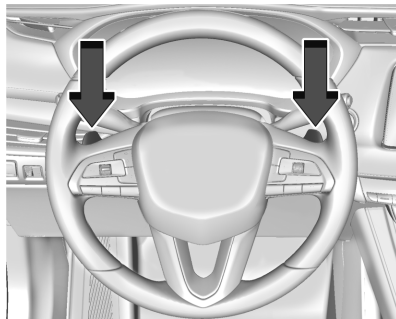
Engine speeds may be increased while driving at highway speeds while the engine is still warming up.

## Manual Mode

### Tap Shift

### Caution

Driving with the engine at a high rpm without upshifting while using Tap Shift, could damage the vehicle. Always upshift when necessary while using Tap Shift.



If equipped, vehicles with Tap Shift have controls on the back of the steering wheel to manually shift the automatic transmission.

### Permanent Tap Shift Mode

To enter Permanent Tap Shift Mode:

1. With the vehicle in D (Drive), pull back on the shift lever to activate M (Manual Mode). The M in the shift pattern will illuminate in red, and the D will switch to white.
2. After releasing the shift lever, it will return to the center position.

3. Pull the control toward you to shift. Pull the left control to downshift, and the right control to upshift. To shift to the lowest available gear, pull and hold the left control.

To exit Permanent Tap Shift Mode:

1. To exit M (Manual Mode) and return to D (Drive), pull back on the shift lever. The D in the shift pattern will illuminate in red, and the M will switch to white.
2. After releasing the shift lever, it will return to the center position.

M (Manual Mode) can be exited to return to D (Drive) at any speed by pulling the lever rearward from the center position. It is not necessary to stop the vehicle or shift to N (Neutral) or P (Park) prior to shifting back to D (Drive).

### Temporary Tap Manual Shift Mode

To enter Temporary Tap Shift Mode:

1. With the transmission in D (Drive) and not in Permanent Tap Shift Mode, the Tap Shift controls will activate a temporary tap manual shift mode, allowing the transmission to be manually shifted.

2. To deactivate, hold the right control briefly. Automatic shifts return after no manual shifts have been done for seven to 10 seconds.

While using Tap Shift, the vehicle will have firmer, quicker shifting. This can be used for sport driving or when climbing or descending hills, to stay in gear longer, or to downshift for more power or engine braking.

The transmission will only allow shifting into gears appropriate for the vehicle speed and engine revolutions per minute (rpm). If shifting is prevented for any reason, the M or D will flash in the instrument cluster. The transmission will not automatically shift to the next higher gear if the engine rpm is too high. It will only automatically shift to the next lower gear if the engine rpm is much too low.

## Drive Systems

### All-Wheel Drive

Vehicles with this feature can operate in All-Wheel Drive (AWD) Mode. When the AWD feature is active, the system transfers engine power, if required, to all four wheels. The system is fully automatic and adjusts to

road conditions for improved traction and control. In FWD Mode engine power is transferred to the front wheels only, and the AWD feature is off.

The AWD feature is automatically activated when certain modes are selected using the Driver Mode Control switch. When an AWD mode change is requested the light will flash briefly while the system is engaging and the AWD light will be displayed when the system is active. When a non-AWD Mode is selected, the light will flash briefly while the system disengages and a 2WD light will be displayed when the AWD system is off. See *Driver Mode Control* ⇨ 197.

When a compact spare tire is installed on an AWD vehicle, the system will automatically detect the compact spare and reduce AWD performance to protect the system. 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* ⇨ 277.

## Brakes

### Electric Brake Boost

Vehicles equipped with electric brake boost have hydraulic brake circuits that are electronically controlled when the brake pedal is applied during normal operation. The system performs routine tests and turns off within a few minutes after the vehicle is turned off. Noise may be heard during this time. If the brake pedal is pressed during the tests or when the electric brake boost system is off, a noticeable change in pedal force and travel may be felt. This is normal.

### Antilock Brake System (ABS)

The Antilock Brake System (ABS) helps prevent a braking skid and maintain steering while braking hard.



If there is a problem with ABS, this warning light stays on. See *Antilock Brake System (ABS) Warning Light* ⇨ 101.

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ABS does not change the time needed to get a foot on the brake pedal and does not always decrease stopping distance. If you get too close to the vehicle ahead, there will not be enough time to apply the brakes if that vehicle suddenly slows or stops. Always leave enough room ahead to stop, even with ABS.

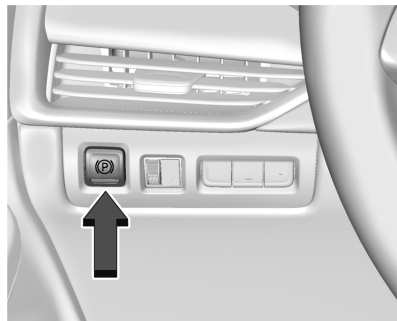
### Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly. Hearing and feeling ABS operate is normal.

### Braking in Emergencies

ABS allows steering and braking at the same time. In many emergencies, steering can help even more than braking.

## Electric Parking Brake



The Electric Parking Brake (EPB) can always be applied, even if the vehicle is off. In case of insufficient electrical power, the EPB cannot be applied or released. To prevent draining the battery, avoid unnecessary repeated cycles of the EPB.

The system has a red parking brake status light and an amber service parking brake warning light. See *Electric Parking Brake Light* ⇨ 101 and *Service Electric Parking Brake Light* ⇨ 101. There are also parking brake-related Driver Information Center (DIC) messages.

Before leaving the vehicle, check the red parking brake status light to ensure that the parking brake is applied.

### EPB Apply

To apply the EPB:

1. Be sure the vehicle is at a complete stop.
2. Press the EPB switch momentarily.

The red parking brake status light will flash and then stay on once the EPB is fully applied. If the red parking brake status light flashes continuously, then the EPB is only partially applied or there is a problem with the EPB. A DIC message will display. Release the EPB and try to apply it again. If the light does not come on, or keeps flashing, have the vehicle serviced. Do not drive the vehicle if the red parking brake status light is flashing. See your dealer.

If the amber service parking brake warning light is on, press the EPB switch. Continue to hold the switch until the red parking brake status light remains on. If the amber service parking brake warning light is on, see your dealer.

If the EPB is applied while the vehicle is moving, the vehicle will decelerate as long as the switch is pressed. If the switch is pressed until the vehicle comes to a stop, the EPB will remain applied.

The vehicle may automatically apply the EPB in some situations when the vehicle is not moving. This is normal, and is done to periodically check the correct operation of the EPB system, or at the request of other safety functions that utilize the EPB.

If the EPB fails to apply, block the rear wheels to prevent vehicle movement.

### EPB Release

To release the EPB:

1. Turn the ignition on or to ACC/ACCESSORY.
2. Apply and hold the brake pedal.
3. Press the EPB switch momentarily.

The EPB is released when the red parking brake status light is off.

If the amber service parking brake warning light is on, release the EPB by pressing and holding the EPB switch. Continue to hold the switch until the red parking brake status light is off. If either light stays on after release is attempted, see your dealer.

### Caution

Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Make sure that the parking brake is fully released and the brake warning light is off before driving.

### Automatic EPB Release

The EPB will automatically release if the vehicle is running, placed into gear, and an attempt is made to drive away. Avoid rapid acceleration when the EPB is applied, to preserve parking brake lining life.

### Brake Assist

Brake Assist detects rapid brake pedal applications due to emergency braking situations and provides additional braking to activate the Antilock Brake System (ABS) if the brake pedal is not pushed hard enough to activate ABS normally. Minor noise, brake pedal pulsation, and/or pedal movement during this time may occur. Continue to apply the brake pedal as the driving situation dictates. Brake Assist disengages when the brake pedal is released.

## Hill Start Assist (HSA)

### Warning

Do not rely on the HSA feature. HSA does not replace the need to pay attention and drive safely. You may not hear or feel alerts or warnings provided by this system. Failure to use proper care when driving may result in injury, death, or vehicle damage. See *Defensive Driving* ⇨ 170.

When the vehicle is stopped on a grade, Hill Start Assist (HSA) prevents the vehicle from rolling in an unintended direction during the transition from brake pedal release to accelerator pedal apply. The brakes release when the accelerator pedal is applied. If the accelerator pedal is not applied within a few minutes, the Electric Parking Brake will apply. The brakes may also release under other conditions. Do not rely on HSA to hold the vehicle.

HSA is available when the vehicle is facing uphill in a forward gear, or when facing downhill in R (Reverse). The vehicle must come to a complete stop on a grade for HSA to activate.

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### Ride Control Systems

#### Traction Control/Electronic Stability Control

##### System Operation

The vehicle has a Traction Control System (TCS) and StabiliTrak/Electronic Stability Control (ESC). These systems help limit wheel spin 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. On an All-Wheel Drive (AWD) vehicle in AWD or Sport Mode, the system will operate if it senses that any of the 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/ESC activates when the system senses a discrepancy between the intended path and the direction the vehicle is actually traveling. StabiliTrak/ESC selectively applies braking pressure at any one of the vehicle's brakes to help steer the vehicle in the direction which you are steering.

If cruise control is being used and traction control or StabiliTrak/ESC begins to limit wheel spin, cruise control will disengage. Cruise control may be turned back on when road conditions allow. TCS and StabiliTrak/ESC will automatically turn on when cruise control is set.


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* ⇨ 178 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/ESC is activated.
- Turn on and stay on when either system is not working.

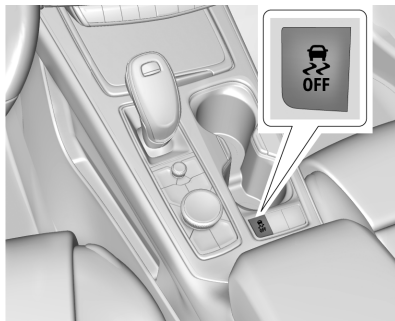
If either system fails to turn on or to activate, a message may display in the Driver Information Center (DIC), and  comes on and stays on to indicate that the system is inactive and is not assisting the driver in maintaining control. The vehicle is safe to drive, but driving should be adjusted accordingly.

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







#### Caution




Do not repeatedly brake or accelerate heavily when TCS is off. The vehicle driveline could be damaged.

To turn off only TCS, press and release . The Traction Off light  displays in the instrument cluster and a DIC message may display.

To turn TCS on again, press and release . The Traction Off light  displayed in the instrument cluster will turn off and a DIC message may display.

If TCS is limiting wheel spin when  is pressed, the system will not turn off until the wheels stop spinning.

To turn off both TCS and StabiliTrak/ESC, press and hold  until the Traction Off light  and StabiliTrak/ESC Off light  come on and stay on in the instrument cluster. A DIC message may display.

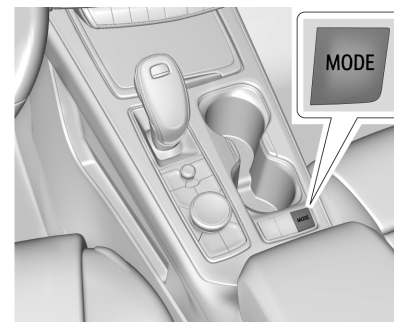
To turn TCS and StabiliTrak/ESC on again, press and release . The Traction Off light  and StabiliTrak/ESC Off light  in the instrument cluster turn off and a DIC message may display.

Adding accessories can affect vehicle performance. See *Accessories and Modifications* ⇨ 232.

### Driver Mode Control

Driver Mode Control (DMC) allows the driver to adjust the overall driving experience to better suit driver preference by adjusting vehicle systems. Drive mode availability and affected vehicle systems are dependent on vehicle trim level, region, and optional features.

If the vehicle is in Tour or AWD Mode, it will stay in that mode through future ignition cycles. If the vehicle is in any other mode, it will return to Tour Mode when the vehicle is restarted. When a mode is selected, an indicator will come on in the instrument cluster and stay on.



#### Driver Mode Control Switch

To activate each mode, press the MODE button on the center console.

**Tour Mode** : Use for normal city and highway driving to provide a smooth ride. This setting provides balance between comfort and handling. This is the standard/

## 198 Driving and Operating

default mode. There is no persistent indicator in the instrument cluster for this mode.

**AWD Mode** : AWD Mode provides torque to all four wheels. Select AWD to improve traction and control on slippery road surfaces, such as gravel, sand, wet pavement, snow, and ice. For more information on AWD Mode, see *All-Wheel Drive* ⇨ 193.

**Sport Mode** : Use where road conditions or personal preference demand a more controlled response. Sport Mode improves vehicle handling and acceleration on dry pavement. When active, Sport Mode modifies steering efforts, transmission shifting, and AWD torque, if equipped.

The Performance Algorithm Liftfoot (PAL) feature is enabled in Sport Mode. PAL allows the transmission to hold the current gear after a quick release of a heavily applied accelerator pedal. This provides greater engine braking and enhanced vehicle control.

When PAL is activated, there may be an additional gear symbol that appears in the instrument cluster display. See *Performance Shifting Light* ⇨ 102.

**Off-Road Mode** : Use this mode for off-road recreational driving. When active, Off-Road Mode should be used to improve driving at moderate speeds, on grass, gravel, dirt, unpaved roads, or snow-covered roads. The accelerator pedal is tuned for off-road use. This mode modifies pedal mapping, AWD, ESC, and TCS Performance.

**Snow/Ice Mode** : Snow/Ice Mode improves vehicle acceleration on snow and ice covered roads. When active, Snow/Ice Mode will adjust acceleration to optimize traction on slippery surfaces. This can compromise the acceleration on dry asphalt. This feature is not intended for use when the vehicle is stuck in sand, mud, ice, snow, or gravel. If the vehicle becomes stuck, see *If the Vehicle Is Stuck* ⇨ 178.

### Cruise Control



#### Warning

Cruise control can be dangerous where you cannot drive safely at a steady speed. Do not use cruise control on winding roads or in heavy traffic.

(Continued)

#### Warning (Continued)

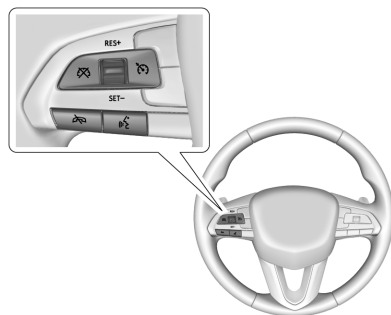
Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

With cruise control, a speed of about 40 km/h (25 mph) or more can be maintained without keeping your foot on the accelerator. Cruise control does not work at speeds below about 40 km/h (25 mph).

If the Traction Control System (TCS) or StabiliTrak/Electronic Stability Control (ESC) begins to limit wheel spin while using cruise control, the cruise control automatically disengages. See *Traction Control/Electronic Stability Control* ⇨ 196. If a collision alert occurs when cruise control is activated, cruise control is disengaged. See *Forward Collision Alert (FCA) System* ⇨ 218. When road conditions allow cruise control to be safely used, it can be turned back on.

Cruise control will disengage if either TCS or StabiliTrak/ESC is turned off.

If the brakes are applied, cruise control disengages.



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

**RES+** : If there is a set speed in memory, move the thumbwheel up briefly to resume that speed or press and hold to accelerate. If the cruise control is already active, use to increase vehicle speed. To increase speed by 1 km/h (1 mph), press the thumbwheel up to the first detent toward RES+. To increase speed to the next 5 km/h (5 mph) mark on the speedometer, press the thumbwheel up to the second detent.

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

by 1 km/h (1 mph), move the thumbwheel down toward SET-. To decrease speed to the next 5 km/h (5 mph) mark on the speedometer, move the thumbwheel down toward SET- to the second detent.

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

### Setting Cruise Control

If is on when not in use, SET- or RES+ could get pressed and go into cruise when not desired. Keep off when cruise is not being used.

1. Press .
2. Get up to the desired speed.
3. Move the thumbwheel down to SET-. The desired set speed briefly appears in the instrument cluster.
4. Remove your foot from the accelerator.

When the cruise control has been set to the desired speed, a green cruise control indicator appears on the instrument cluster and a cruise set speed message appears on the Head-Up Display (HUD), if equipped.

### Resuming a Set Speed

If the cruise control is set at a desired speed and then the brakes are applied or is pressed, the cruise control is disengaged without erasing the set speed from memory.

Once the vehicle speed reaches about 40 km/h (25 mph) or more, move the thumbwheel up toward RES+ briefly. The vehicle returns to the previous set speed.

### Increasing Speed While Using Cruise Control

If the cruise control system is already activated:

- Move the thumbwheel up toward RES+ 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 km/h (1 mph) faster.
- To increase vehicle speed in larger increments, move the thumbwheel up toward RES+ to the second detent. For each press, the vehicle speed increases to the next 5 km/h (5 mph) mark on the speedometer.

## 200 Driving and Operating

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇨ 93. 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 down toward SET– until the desired lower speed is reached, then release it.
- To decrease the vehicle speed in small increments, move the thumbwheel down toward SET– briefly. For each press, the vehicle goes about 1 km/h (1 mph) slower.
- To decrease the vehicle speed in larger increments, move the thumbwheel down toward SET– to the second detent. For each press, the vehicle speed decreases to the next 5 km/h (5 mph) mark on the speedometer.

The cruise control system may automatically brake to slow the vehicle down.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇨ 93. The increment value used depends on the units displayed.

### Passing Another Vehicle While Using Cruise Control

Use the accelerator pedal to increase the vehicle speed. When you take your foot off the pedal, the vehicle will slow down to the previous set cruise speed.


While pressing the accelerator pedal or shortly following the release to override cruise, briefly moving the thumbwheel down toward SET– will result in cruise set to the current vehicle speed.


### Using Cruise Control on Hills

How well the cruise control will work on hills depends upon the vehicle speed, load, and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain your speed. When going downhill, the cruise control system may automatically brake to slow the vehicle down. Also, you may have to brake or shift to a lower gear to keep your speed down. If the brake pedal is applied, cruise control disengages.


### Ending Cruise Control

There are four ways to end cruise control:

- Step lightly on the brake pedal.
- Press .

- Shift the transmission to N (Neutral).
- Press .

### Erasing Speed Memory

The cruise control set speed is erased from memory if  is pressed or if the ignition is turned off.

## Adaptive Cruise Control (Advanced)

If equipped with Adaptive Cruise Control (ACC), it allows the driver to select the cruise control set speed and following gap. Read this entire section before using this system. The following gap is the following time between your vehicle and a vehicle detected directly ahead in your path, moving in the same direction. If no vehicle is detected in your path, ACC works like regular cruise control. ACC uses camera and radar sensors.

If a vehicle is detected in your path, ACC can apply acceleration or limited, moderate braking to maintain the selected following gap. To disengage ACC, apply the brake. If ACC is controlling your vehicle speed when the Traction Control System (TCS) or StabiliTrak/Electronic Stability Control (ESC) system activates, the ACC may automatically

disengage. See *Traction Control/Electronic Stability Control* ⇨ 196. When road conditions allow ACC to be safely used, the ACC can be turned back on.

Disabling the TCS or StabiliTrak/ESC system will disengage and prevent engagement of ACC.

ACC can reduce the need for you to frequently brake and accelerate, especially when used on expressways, freeways, and interstate highways. When used on other roads, you may need to take over the control of braking or acceleration more often.

ACC automatically slows the vehicle down while navigating the curve and may increase speed out of the curve, but will not exceed the set speed.

### Warning

ACC has limited braking ability and may not have time to slow the vehicle down enough to avoid a collision with another vehicle you are following. This can occur when vehicles suddenly slow or stop ahead, or enter your lane. Also see “Alerting the Driver” in this section.

(Continued)

### Warning (Continued)

Complete attention is always required while driving and you should be ready to take action and apply the brakes. See *Defensive Driving* ⇨ 170.


### Warning

ACC will not detect or brake for children, pedestrians, animals, or other objects.

Do not use ACC when:

- On winding and hilly roads or when the sensors are blocked by snow, ice, or dirt. The system may not detect a vehicle ahead. Keep the entire front of the vehicle clean.
- Visibility is low, such as in fog, rain, or snow conditions. ACC performance is limited under these conditions.
- On slippery roads where fast changes in tire traction can cause excessive wheel slip.
- When towing a trailer.





 : Press to turn the system on or off. The indicator turns white on the instrument cluster when ACC is turned on.

**RES+** : Press briefly to resume the previous set speed or to increase vehicle speed if ACC is already activated. To increase speed by 1 km/h (1 mph), press RES+ to the first detent. To increase speed to the next 5 km/h (5 mph) mark on the speedometer, press RES+ to the second detent.


**SET-** : Press briefly to set the speed and activate ACC or to decrease vehicle speed if ACC is already activated. To decrease speed by 1 km/h (1 mph), press SET- to the first detent. To decrease speed to the next 5 km/h (5 mph) mark on the speedometer, press SET- to the second detent.

## 202 Driving and Operating

 : Press to disengage ACC without erasing the selected set speed.

 : Press to select a following gap time (or distance) setting for ACC of Far, Medium, or Near.

### Switching Between ACC and Regular Cruise Control



To switch between ACC and regular cruise control, press and hold . A Driver Information Display (DIC) message displays. See *Vehicle Messages* ➔ 111.



ACC Indicator



Regular Cruise Control Indicator

When ACC is engaged, a green  indicator will be lit on the instrument cluster and the following gap will be displayed. When the regular cruise control is engaged, a green  indicator will be lit on the instrument cluster; the following gap will not display.



It is recommended to switch from ACC to regular cruise control only, when there are no vehicles ahead of your vehicle.

When the vehicle is turned on, the cruise control mode will be set to the last mode used before the vehicle was turned off.

### Warning

Always check the cruise control indicator on the instrument cluster to determine which mode cruise control is in before using the feature. If ACC is not active, the vehicle will not automatically brake for other vehicles, which could cause a crash if the brakes are not applied manually. You and others could be seriously injured or killed.


### Setting Adaptive Cruise Control

If  is on when not in use, it could get pressed and go into cruise when not desired. Keep  off when cruise is not being used.

Select the set speed desired for cruise. This is the vehicle speed when no vehicle is detected in its path.

ACC will not set at a speed less than 25 km/h (15 mph), although it can be resumed when driving at lower speeds. The minimum allowable set speed is 25 km/h (15 mph).

To set ACC while moving:

1. Press .
2. Get up to the desired speed.
3. Press and release SET-.
4. Remove your foot from the accelerator.

After ACC is set, it may immediately apply the brakes if a vehicle ahead is detected closer than the selected following gap.



ACC can also be set while the vehicle is stopped if ACC is on and the brake pedal is applied.

The ACC indicator displays on the instrument cluster and Head-Up Display (HUD), if equipped. When ACC is turned on, the indicator will be lit white. When ACC is engaged, the indicator will turn green.

Be mindful of speed limits, surrounding traffic speeds, and weather conditions when selecting the set speed.

#### Resuming a Set Speed

If the ACC is set at a desired speed and then the brakes are applied, ACC is disengaged without erasing the set speed from memory.

To begin using ACC again, press RES+ up briefly.

- If the vehicle is moving more than 5 km/h (3 mph), it returns to the previous set speed.
- If the vehicle is stopped with the brake pedal applied, press RES+ and release the brake pedal. ACC will hold the vehicle until RES+ or the accelerator pedal is pressed.

A green ACC indicator and the set speed display on the instrument cluster. The vehicle ahead indicator may be flashing if a vehicle ahead was present and moved. See "Approaching and Following a Vehicle" later in this section.

Once ACC has resumed, if there is no vehicle ahead, if the vehicle ahead is beyond the selected following gap, or if the vehicle has exited a sharp curve, then the vehicle speed will increase to the set speed.

#### Increasing Speed While ACC is at a Set Speed

If ACC is already activated, do one of the following:

- Use the accelerator to get to the higher speed. Briefly press and release SET- and release the accelerator pedal. The vehicle will now cruise at the higher speed. When the accelerator pedal is pressed, ACC will not brake because it is overridden. While overridden, the ACC indicator will turn blue on the instrument cluster and heads up display, if equipped.
- Press and hold RES+ until the desired set speed is displayed, then release it.
- To increase speed in small increments, press RES+ to the first detent. For each press, the vehicle goes 1 km/h (1 mph) faster.
- To increase speed in larger increments, press RES+ to the second detent. For each press, the vehicle speed increases to the next 5 km/h (5 mph) mark on the speedometer.

The set speed can also be increased while the vehicle is stopped.

- If stopped with the brake applied, press RES+ until the desired set speed is displayed.

- If ACC is holding the vehicle at a stop and there is another vehicle directly ahead, pressing RES+ will increase the set speed.
- Pressing RES+ when there is no longer a vehicle ahead or the vehicle ahead is pulling away and the brake is not applied will cause the ACC to resume.

When it is determined that there is no vehicle ahead or the vehicle ahead is beyond the selected following gap, then the vehicle speed will increase to the set speed.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇨ 93. The increment value used depends on the units displayed.

#### Reducing Speed While ACC is at a Set Speed

If ACC is already activated, do one of the following:

- Use the brake to get to the desired lower speed. Release the brake and press SET- . The vehicle will now cruise at the lower speed.
- Press and hold SET- until the desired lower speed is reached, then release it.
- To decrease speed in smaller increments, press SET- to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) slower.

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- To decrease speed in larger increments, press SET- to the second detent. For each press, the vehicle speed decreases to the next 5 km/h (5 mph) mark on the speedometer.

The set speed can also be decreased while the vehicle is stopped.

- If stopped with the brake applied, press or hold SET- until the desired set speed is displayed.

### Selecting the Follow Distance Gap

When a slower moving vehicle is detected ahead within the selected following gap, ACC will adjust the vehicle's speed and attempt to maintain the follow distance gap selected.

Press  on the steering wheel to adjust the following gap. Each press cycles the gap button through three settings: Far, Medium, or Near.

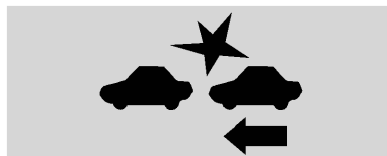
When pressed, the current gap setting displays briefly on the instrument cluster and HUD, if equipped. The gap setting will be maintained until it is changed.

Since each gap setting corresponds to a following time (Far, Medium, or Near), the following distance will vary based on vehicle

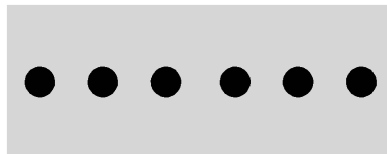
speed. The faster the vehicle speed, the further back your vehicle will follow a vehicle detected ahead. Consider traffic and weather conditions when selecting the following gap. The range of selectable gaps may not be appropriate for all drivers and driving conditions.

Changing the gap setting automatically changes the alert timing sensitivity (Far, Medium, or Near) for the Forward Collision Alert (FCA) feature. See *Forward Collision Alert (FCA) System* ⇨ 218.

### Alerting the Driver



With Head-Up Display



Without Head-Up Display

If ACC is engaged, driver action may be required when ACC cannot apply sufficient braking because of approaching a vehicle too rapidly.

When this condition occurs, the collision alert symbol will flash on the windshield. Either eight beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. Touch the Settings icon on the infotainment home page. Select "Vehicle" to display the list of available options and select "Collision/Detection Systems".

See *Defensive Driving* ⇨ 170.

### Approaching and Following a Vehicle



The vehicle ahead indicator is in the instrument cluster and HUD display, if equipped.

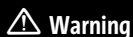
The vehicle ahead indicator only displays when a vehicle is detected in your vehicle's path moving in the same direction.

If this symbol is not displaying, ACC will not respond to or brake for vehicles ahead.

ACC automatically slows the vehicle down and adjusts vehicle speed to follow the vehicle in front at the selected follow gap. The vehicle speed increases or decreases to follow the vehicle in front of you, but will not exceed the set speed. It may apply limited braking, if necessary. When braking is active, the brake lamps will come on. The automatic braking may feel or sound different than if the brakes were applied manually. This is normal.

#### Passing a Vehicle While Using ACC

If the set speed is high enough, and the left turn signal is used to pass a vehicle ahead in the selected following gap, ACC may assist by gradually accelerating the vehicle prior to the lane change.



#### Warning

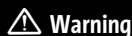
When using ACC to pass a vehicle or perform a lane change, the following distance to the vehicle being passed may be reduced. ACC may not apply sufficient acceleration or braking when passing a vehicle or performing a lane change.

(Continued)

#### Warning (Continued)

Always be ready to manually accelerate or brake to complete the pass or lane change.

#### Stationary or Very Slow-Moving Objects



#### Warning

ACC may not detect and react to stopped or slow-moving vehicles ahead of you. For example, the system may not brake for a vehicle it has never detected moving. This can occur in stop-and-go traffic or when a vehicle suddenly appears due to a vehicle ahead changing lanes. Your vehicle may not stop and could cause a crash. Use caution when using ACC. Your complete attention is always required while driving and you should be ready to take action and apply the brakes.

#### Irregular Objects Affecting ACC

ACC may have difficulty detecting the following objects:

- Vehicles with cargo extending from the back end.

- Non-standard shaped vehicles, such as vehicle transport, vehicles with a side car fitted, or horse carriages.
- Objects that are close to the front of your vehicle.

#### ACC Automatically Disengages

ACC may automatically disengage and the driver will need to manually apply the brakes to slow the vehicle when:

- The sensors are blocked.
- The Traction Control System (TCS) or StabiliTrak/ESC system has activated or been disabled.
- There is a fault in the system.
- The radar falsely reports blockage when driving in a desert or remote area with no other vehicles or roadside objects. A DIC message may display to indicate that ACC is temporarily unavailable.

The ACC indicator will turn white when ACC is no longer active.

In some cases, when ACC is temporarily unavailable, regular cruise control may be used. See “Switching Between ACC and Regular Cruise Control” in this section. Always consider driving conditions before using either cruise control system.

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### Notification to Resume ACC

ACC will maintain a follow gap behind a detected vehicle and slow your vehicle to a stop behind that vehicle.

If the stopped vehicle ahead has driven away and ACC has not resumed, the vehicle ahead indicator will flash as a reminder to check traffic ahead before proceeding. In addition, the left and right sides of the Safety Alert Seat will pulse three times, or three beeps will sound. Touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Alert Type” and “Adaptive Cruise Go Notifier” in “Collision/ Detection Systems”.

When the vehicle ahead drives away, ACC resumes automatically if the stop was brief. If necessary, press RES+ or the accelerator pedal to resume ACC. If stopped for more than two minutes or if the driver door is opened and the driver seat belt is unbuckled, the ACC automatically applies the Electric Parking Brake (EPB) to hold the vehicle. The EPB status light will turn on. See *Electric Parking Brake* ⇨ 194. To release the EPB, press the accelerator pedal.

A DIC warning message may display indicating to shift to P (Park) before exiting the vehicle. See *Vehicle Messages* ⇨ 111.

#### Warning

If ACC has stopped the vehicle, and if ACC is disengaged, turned off, or canceled, the vehicle will no longer be held at a stop. The vehicle can move. When ACC is holding the vehicle at a stop, always be prepared to manually apply the brakes.

#### Warning

Leaving the vehicle without placing it in P (Park) can be dangerous. Do not leave the vehicle while it is being held at a stop by ACC. Always place the vehicle in P (Park) and turn off the ignition before leaving the vehicle.

### ACC Override

If using the accelerator pedal while ACC is active, the ACC indicator turns blue on the instrument cluster and in the HUD (if equipped) to indicate that automatic braking

will not occur. ACC will resume operation when the accelerator pedal is not being pressed.

#### Warning

The ACC will not automatically apply the brakes if your foot is resting on the accelerator pedal. You could crash into a vehicle ahead of you.

### Curves in the Road

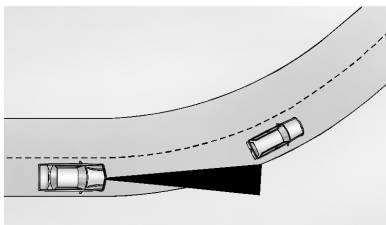
#### Warning

On curves, ACC may not detect a vehicle ahead in your lane. You could be startled if the vehicle accelerates up to the set speed, especially when following a vehicle exiting or entering exit ramps. You could lose control of the vehicle or crash. Do not use ACC while driving on an entrance or exit ramp. Always be ready to use the brakes if necessary.

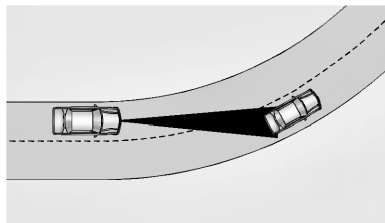
 **Warning**

On curves, ACC may respond to a vehicle in another lane, or may not have time to react to a vehicle in your lane. You could crash into a vehicle ahead of you, or lose control of your vehicle. Give extra attention in curves and be ready to use the brakes if necessary. Select an appropriate speed while driving in curves.

ACC may operate differently in a sharp curve. It may reduce the vehicle speed if the curve is too sharp.



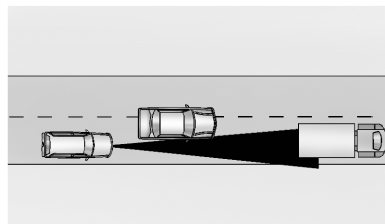
When following a vehicle and entering a curve, ACC may not detect the vehicle ahead and may accelerate to the set speed. When this happens, the vehicle ahead indicator will not appear.



ACC may detect a vehicle that is not in your lane and apply the brakes.

ACC may occasionally provide an alert and/or braking that is considered unnecessary. It could respond to vehicles in different lanes, signs, guardrails, and other stationary objects when entering or exiting a curve. This is normal operation. The vehicle does not need service.

**Other Vehicle Lane Changes**



ACC will not detect a vehicle ahead until it is completely in the lane. The brakes may need to be manually applied.

**Objects Not Directly in Front of Your Vehicle**

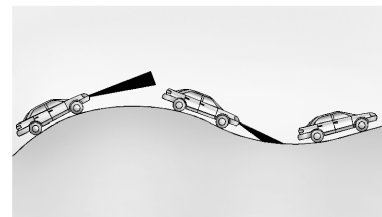
The detection of objects in front of the vehicle may not be possible if:

- The vehicle or object ahead is not within your lane.
- The vehicle ahead is shifted, not centered, or is shifted to one side of the lane.

**Driving in Narrow Lanes**

Vehicles in adjacent traffic lanes or roadside objects may be incorrectly detected when located along the roadway.

**Do Not Use ACC on Hills**



Do not use ACC when driving on steep hills as ACC may not detect a vehicle ahead.



## 208 Driving and Operating

### Do Not Use ACC When Towing a Trailer


ACC should not be used when towing a trailer.

### Disengaging ACC

There are three ways to disengage ACC:

- Step lightly on the brake pedal.
- Press .
- Press .

### Erasing Speed Memory

The cruise control set speed is erased from memory if  is pressed or if the ignition is turned off.

### Weather Conditions Affecting ACC

System operation may be limited under snow, heavy rain, or road spray conditions.

#### Warning

Camera visibility may be limited and the ACC system may not work properly if the windshield is not clear. Do not use ACC if moisture is present on the inside of the windshield or the windshield washer is used in cold weather. Turn on the front defroster and make sure the windshield is  
(Continued)

#### Warning (Continued)

clear before using ACC. Before driving, check that the windshield wipers are in good condition and replace them if worn.

### Accessory Installations and Vehicle Modifications

Do not install or place any object around the front camera windshield area that would obstruct the front camera view.

Do not install objects on top of the vehicle that overhang and obstruct the front camera, such as a canoe, kayak, or other items that can be transported on a roof rack system. See *Roof Rack System* ⇨ 82.

Do not modify the hood, headlamps, or fog lamps, as this may limit the camera's ability to detect an object.

### Cleaning the Sensing System

The camera sensor on the windshield behind the rearview mirror and the radar sensors on the front of the vehicle can become blocked by snow, ice, dirt, or mud. These areas need to be cleaned for ACC to operate properly.

If ACC will not operate, regular cruise control may be available. See "Switching Between ACC and Regular Cruise Control" in this section. Always consider driving conditions before using either cruise control system.

For cleaning instructions, see "Washing the Vehicle" under *Exterior Care* ⇨ 281.

## Driver Assistance Systems

This vehicle may have features that work together to help avoid crashes or reduce crash damage while driving, backing, and parking. Read this entire section before using these systems.

#### Warning

Do not rely on the Driver Assistance Systems. These systems do not replace the need for paying attention and driving safely. You may not hear or feel alerts or warnings provided by these systems. Failure to use proper care when driving may result in injury, death, or vehicle damage. See *Defensive Driving* ⇨ 170.

Under many conditions, these systems will not:

(Continued)

### Warning (Continued)

- Detect children, pedestrians, bicyclists, or animals.
- Detect vehicles or objects outside the area monitored by the system.
- Work at all driving speeds.
- Warn you or provide you with enough time to avoid a crash.
- Work under poor visibility or bad weather conditions.
- Work if the detection sensor is not cleaned or is covered by ice, snow, mud, or dirt.
- Work if the detection sensor is covered up, such as with a sticker, magnet, or metal plate.
- Work if the detection sensor viewing zone is interrupted by an installed accessory, such as a bike rack, or hitch mounted cargo carrier.
- Work if the area surrounding the detection sensor is damaged or not properly repaired.

(Continued)

### Warning (Continued)

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

### Audible or Safety Alert Seat

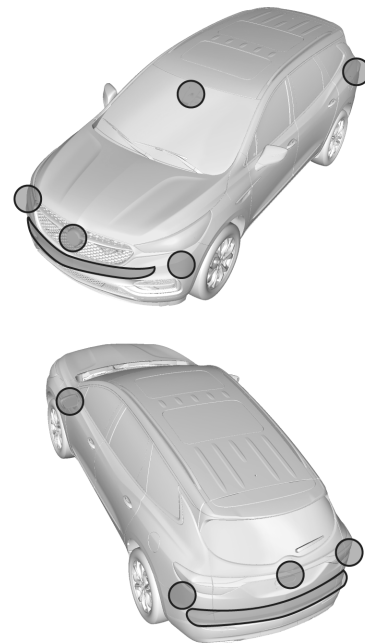
Some driver assistance features alert the driver of obstacles by beeping. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Comfort and Convenience”.

If equipped with the Safety Alert Seat, the driver seat cushion may provide a vibrating pulse alert instead of beeping. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Collision/ Detection Systems”.

### Cleaning

Depending on vehicle options, keep these areas of the vehicle clean to ensure the best driver assistance feature performance. Driver

Information Center (DIC) messages may display when the systems are unavailable or blocked.



## 210 Driving and Operating

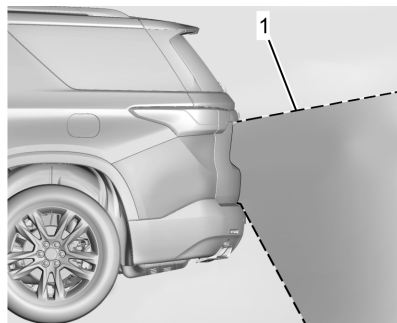
- Front and rear bumpers and the area below the bumpers
- Front grille and headlamps
- Front camera lens in the front grille or near the front emblem
- Front side and rear side panels
- Outside of the windshield in front of the rearview mirror
- Side camera lens on the bottom of the outside mirrors
- Rear side corner bumpers
- Rear Vision Camera above the license plate

### Assistance Systems for Parking or Backing

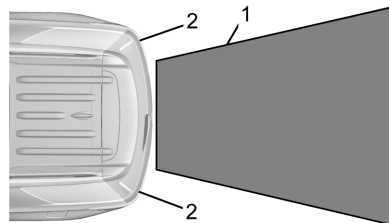
If equipped, the Rear Vision Camera (RVC), Surround Vision, Rear Park Assist (RPA), Front and Rear Park Assist (FRPA), Enhanced Automatic Parking Assist (APA), Backing Warning and Reverse Automatic Braking (RAB) System, and Rear Cross Traffic Alert (RCTA) may help the driver park or avoid objects. Always check around the vehicle when parking or backing.

### Rear Vision Camera (RVC)

When the vehicle is shifted into R (Reverse), the Rear Vision Camera (RVC) displays an image of the area behind the vehicle in the infotainment display. The previous screen displays when the vehicle is shifted out of R (Reverse) after a short delay. To return to the previous screen sooner, press Home or Back on the infotainment system, shift into P (Park), or reach a vehicle speed of approximately 12 km/h (8 mph) while in D (Drive).



1. View Displayed by the Camera



1. View Displayed by the Camera
2. Corners of the Rear Bumper

Displayed images may be farther or closer than they appear. The area displayed is limited and objects that are close to either corner of the bumper or under the bumper do not display.

A warning triangle may appear on the infotainment display to show that Rear Park Assist (RPA) or Rear Cross Traffic Alert (RCTA) has detected an object. This triangle changes from amber to red and increases in size the closer the object.

#### Warning

The camera(s) do not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object outside of

(Continued)

### Warning (Continued)

the cameras' field of view, below the bumper, or under the vehicle. Shown distances may be different from actual distances. Do not drive or park the vehicle using only these camera(s). Always check behind and around the vehicle before driving. Failure to use proper care may result in injury, death, or vehicle damage.

## Surround Vision System

If equipped, Surround Vision shows an image of the area surrounding the vehicle, along with the front or rear camera views on the infotainment display. The front camera is in the grille or near the front emblem, the side cameras are on the bottom of the outside mirrors, and the rear camera is above the license plate.

The Surround Vision system can be accessed by selecting CAMERA in the infotainment display or when the vehicle is shifted into R (Reverse). To return to the previous screen sooner, when not in R (Reverse) press Home or Back on the infotainment system, shift

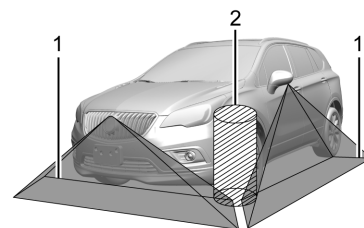
into P (Park), or reach a vehicle speed of approximately 12 km/h (8 mph) while in D (Drive).

### Warning

The Surround Vision cameras have blind spots and will not display all objects near the corners of the vehicle. Folding outside mirrors that are out of position may not display surround view correctly. Always check around the vehicle when parking or backing.



1. Views Displayed by the Surround Vision Cameras
2. Area Not Shown



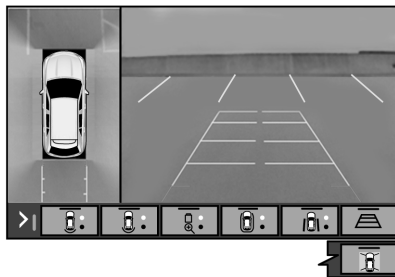
1. Views Displayed by the Surround Vision Cameras
2. Area Not Shown

### Warning

The camera(s) do not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object outside of the cameras' field of view, below the bumper, or under the vehicle. Shown distances may be different from actual distances. Do not drive or park the vehicle using only these camera(s). Always check behind and around the vehicle before driving. Failure to use proper care may result in injury, death, or vehicle damage.

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### Camera Views



Touch the camera view buttons along the bottom of the infotainment display.

**Front/Rear Standard View** : Displays an image of the area in front or behind the vehicle. Touch Front/Rear Standard View on the infotainment display when a camera view is active. Touching the button multiple times will toggle between front and rear camera views.

If equipped, the front view camera also displays when the Park Assist system detects an object within 30 cm (12 in).

**Front/Rear Overhead View** : Displays a front or rear overhead view of the vehicle. Touching the button will toggle between the two views.

**Side Forward/Rearward View** : Displays a view that shows objects next to the front or rear sides of the vehicle. Touch Side Forward/Rearward View on the infotainment display when a camera view is active. Touching the button multiple times will toggle between forward and rearward views. Park Assist and RCTA overlays are not available when Side Forward/Rearward view is active.

**Guidance Lines** : Displays available guidelines. The horizontal markings represent distance from the vehicle.

**Top Down View** : Displays an image of the area surrounding the vehicle, along with other views in the infotainment display. Top Down can be enabled or disabled by touching the Top Down View button multiple times.

### Park Assist

The vehicle may be equipped with Front and Rear Park Assist (FRPA). Under certain conditions, the Park Assist system can assist the driver during backing and parking

maneuvers when the vehicle is driven at no more than 9 km/h (6 mph). An illuminated indicator in the Park Assist button indicates the system is ready.

Sensors located in the bumpers measure the distance between the vehicle and objects using sonar technology. These sensors are designed to detect certain objects up to 1.5 m (5 ft) behind and 1.2 m (4 ft) in front of your vehicle that are taller than 25 cm (10 in).

Different environmental conditions may affect whether and how far the Park Assist system can detect objects. Keep the sensors clean of mud, dirt, snow, ice, and slush; and clean sensors after a car wash in freezing temperatures. Sensors that are not clean may not detect objects or may cause the system to alert when not required.

### Warning

The Park Assist System is no substitute for careful and attentive driving. The Park 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  
(Continued)

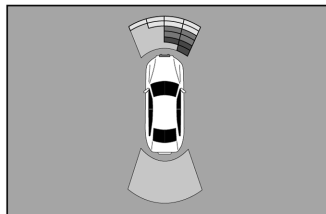
### Warning (Continued)

available at speeds greater than 9 km/h (6 mph). To prevent injury, death, or vehicle damage, even with Park Assist, always check the area around the vehicle and check all mirrors before moving forward or backing.

### How the System Works

The vehicle may have a Park Assist amphitheatre-like display on the cluster with bars that represent the estimated location of a detected object and the vehicle's distance from the object. As a detected object becomes closer, more bars light up and change color from yellow to amber to red.

When an object is first detected in the rear, one beep will be heard from the rear, or the driver's seat will pulse two times, if equipped with Safety Alert Seat. When an object is very close, five beeps will sound from the front or rear (depending on the object's location), or the driver's seat will pulse five times. Beeps for front are higher pitched than the rear.



### Turning the System On and Off

The Park Assist System can be turned on or off using the infotainment system. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select "Vehicle" to display the list of available options and select "Collision/Detection Systems".

The **P** button is used to turn on or off the Park Assist, which also turns on or off the Backing Warning and Reverse Automatic Braking (RAB) at the same time. When the system is turned off, a system off message is shown on the display. This message disappears after a short period of time.

Turn off Park Assist when towing a trailer to prevent unwanted beeps and when a bike rack is attached to ensure proper operation.

### When the System Does Not Seem to Work Properly

If a service message displays, check the following conditions:

- The sensors may not be clean. Keep the vehicle's front and rear bumpers free of mud, dirt, snow, ice, and slush. For cleaning instructions, see *Exterior Care* ⇨ 281.
- The Park Assist sensors may be 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.

If a service message displays and the above conditions do not exist, take the vehicle to your dealer for repairs.

If the Park Assist System does not activate due to a temporary condition, a system off message is shown on the display. This can occur under the following conditions:

- The driver has disabled the system.

## 214 Driving and Operating

- An object is currently blocking the rear sensors (for example, bike rack, tailgate, trailer hitch, etc.). Once the object is removed, Park Assist will return to normal operation.
- The bumper is damaged. Take the vehicle to your dealer for repairs.
- Other conditions, such as vibrations from a jackhammer or the compression of air brakes on a very large truck, are affecting system performance.

### Automatic Parking Assist (APA)

#### Automatic Parking Assist (APA) with Braking


If equipped, under certain conditions APA with Braking can use sensors based on sonar technology along the vehicle's front, rear and sides to detect a parking spot, and automatically park the vehicle with some driver assistance. The vehicle will automatically maneuver into a detected spot moving at or near idle speed. It does this by automatically steering and braking while the driver is responsible for acceleration and gear shifting as needed. The driver must always be prepared to apply braking or


additional acceleration, as needed. A display and audible beeps help to guide the parking maneuvers.

#### Warning

APA may not always detect objects in the parking space, objects that are not rigid (e.g. shrubs and chain-link fences), objects below the bumper, objects high off the ground (e.g. flatbed trucks), hanging objects, objects below ground level (e.g. large potholes), or moving objects (e.g. pedestrians, cyclists, vehicles). Always verify that the parking space is appropriate for parking a vehicle. APA may not respond to changes in the parking space, such as movement of an adjacent vehicle, or a person or object entering the parking space. APA does not detect or avoid traffic that is behind or alongside of the vehicle. Always be prepared to stop the vehicle during the parking maneuver.

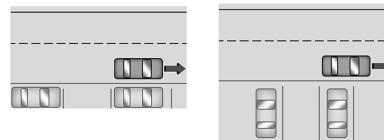
#### How to Activate Automatic Parking

To activate APA, press the soft-touch button or hard switch  for the system to begin searching for a parking space while driving

forward at no greater than 30 km/h (18 mph). By default, APA searches for parallel parking spaces to the right of the vehicle up to the sensors' range of 1.5 m (5 ft). To search for a parking space to the left, turn on the left turn signal or, if available, change the side selection in the infotainment display. To switch the parking mode between parallel and perpendicular press and hold  while searching for a valid parking spot or, if available, change the parking mode in the infotainment display.

APA cannot park in all empty parking spots. The parking spot must:

- Be sufficiently large to fit the vehicle comfortably.
- Have an adjacent vehicle, wall, or pillar for the system to align to.



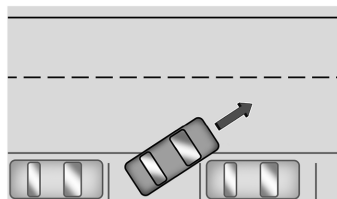
After completely passing an eligible parking spot, a beep sounds and a red stop symbol is displayed in the driver information center. Generally, APA selects the nearest empty parking spot behind the vehicle, but under some conditions may select a space that is further back. Slow down and bring the vehicle to a complete stop to begin.

Follow the displayed instructions. When instructed to drive in reverse, shift to R (Reverse) while holding the brakes. The steering wheel will vibrate briefly as a reminder to remove hands from the steering wheel. After the vibration stops, check your surroundings and release the brakes to begin automatic parking. As the vehicle automatically steers, and brakes into the parking spot, check surroundings and continue to apply acceleration if necessary and shift gears as needed. Be prepared to stop to avoid vehicles, pedestrians, or objects.

A progress arrow displays the status of the parking maneuver. Once automatic parking is finished and the vehicle has come to a full stop, APA will beep and display a message indicating parking is complete. Shift the vehicle to P (Park) and apply the parking brake




Automatic Parking



Automatic Unparking

#### How to Cancel Automatic Parking

To cancel automatic parking or automatic unparking at any time, press **P** . Be prepared to resume full control of the vehicle. APA holds the vehicle until the parking brake or brake is applied, or the

vehicle is shifted into P (Park). To start driving away, press the brakes and shift into D (Drive).

Certain vehicle conditions and driver interferences may also cancel automatic parking:

- The driver manually steers the vehicle.
- The maximum allowed speed is exceeded.
- There is a failure with the APA system.
- Electronic stability control or antilock brakes are activated.
- The parking brake is applied.
- Driver unbuckles the seat belt and opens the door.

#### System Limitations

Automatic Parking Assist has certain limitations. The system cannot:

- Continue to operate if the maneuver speed exceeds 5 km/h (3 mph).
- Detect whether a parking space is legal or restricted.
- Detect pavement markings or lines.
- Park the vehicle closely lined up with the vehicle next to it, particularly if the spot is approached at an angle or if the parking space is angled.
- Park exactly centered in a very large spot.

## 216 Driving and Operating

- Always detect short curbs.
- Operate while towing any trailer.
- Function the vehicle is raised or lowered by air suspension, if equipped.

### When the System Does Not Seem to Work Properly

If the vehicle does not reverse into the expected parking space, the system could be maneuvering the vehicle into a previously detected space.

## Reverse Automatic Braking (RAB)

### Backing Warning and Reverse Automatic Braking (RAB)

If equipped, vehicles with Adaptive Cruise Control (ACC) have the Backing Warning System and Reverse Automatic Braking (RAB) system. When in R (Reverse), Backing Warning alerts of rear objects at vehicle speeds greater than 8 km/h (5 mph), and RAB may automatically brake hard at speeds between 1–32 km/h (0.5–20 mph).

The Backing Warning System will beep once from the rear when an object is first detected, or pulse twice on both sides of the Safety Alert Seat. When the system detects a potential crash, beeps will be heard from the rear, or five pulses will be felt on both

sides of the Safety Alert Seat. There may also be a brief, sharp application of the brakes.

### Warning

The Backing Warning System only operates at speeds greater than 8 km/h (5 mph). It does not detect children, pedestrians, bicyclists, animals, or objects below the bumper or that are too close or too far from the vehicle. In some situations, such as at higher backing speeds, there may not be enough time for the short, sharp application of the vehicle brake system to occur. To prevent injury, death, or vehicle damage, even with the Backing Warning System, always check the area around the vehicle and check all mirrors before backing.

When the vehicle is in R (Reverse), if the system detects the vehicle is backing too fast to avoid a crash with a detected object behind your vehicle in your path, it may automatically brake hard to a stop to help avoid or reduce the harm caused by a backing crash.

### Warning

RAB may not avoid many types of backing crashes. Do not wait for the automatic braking to apply. This system is not designed to replace driver braking and only works in R (Reverse) when an object is detected directly behind the vehicle. It may not brake or stop in time to avoid a crash. It will not brake for objects when the vehicle is moving at very low speeds. It does not detect children, pedestrians, bicyclists, animals, or objects below the bumper or that are too close or too far from the vehicle. To prevent injury, death, or vehicle damage, even with RAB, always check the area around the vehicle before and while backing.

Pressing the brake pedal after the vehicle comes to a stop will release RAB. If the brake pedal is not pressed soon after the stop, the Electric Parking Brake (EPB) may be set. When it is safe, press the accelerator pedal firmly at any time to override RAB.

 **Warning**

There may be instances where unexpected or undesired automatic braking occurs. If this happens, either press the brake pedal or firmly press the accelerator pedal to release the brakes from the RAB system. Before releasing the brakes, check the RVC and check the area around the vehicle to make sure it is safe to proceed.

Unexpected braking events are possible with a static installed accessory, such as a bike rack or hitch-mounted cargo carrier.

### Rear Pedestrian Alert

If equipped, and under certain conditions, this feature can provide alerts for a pedestrian within the system's range directly behind the vehicle. This feature only works in R (Reverse) below 12 km/h (8 mph), and detects pedestrians up to 8 m (26 ft) away during daytime driving. During nighttime driving, feature performance is very limited.



### Rear Pedestrian Alert Indicator

When a pedestrian is detected within the system's range directly behind the vehicle, this symbol flashes amber on the infotainment display, along with five beeps from the rear, or if equipped, two pulses from both sides of the driver seat. When a pedestrian is detected close to the vehicle, the symbol flashes red on the infotainment display, along with ten beeps from the rear, or if equipped, seven pulses from both sides of the driver seat.

 **Warning**

Rear Pedestrian Alert does not automatically brake the vehicle. It also does not provide an alert unless it detects a pedestrian, and it may not detect all pedestrians if:

(Continued)

### Warning (Continued)

- The pedestrian is not directly behind the vehicle, fully visible to the Rear Vision Camera (RVC), or standing upright.
- The pedestrian is part of a group.
- The pedestrian is a child.
- Visibility is poor, including nighttime conditions, fog, rain, or snow.
- The RVC is blocked by dirt, snow, or ice.
- The RVC, taillamps, or back-up lamps are not cleaned or in proper working condition.
- The vehicle is not in R (Reverse).

To help avoid death or injury, always check for pedestrians around the vehicle before backing up. Be ready to take action and apply the brakes. See *Defensive Driving* ⇨ 170. Keep the RVC, taillamps, and back-up lamps clean and in good repair.

## 218 Driving and Operating

Rear Pedestrian Alert can be set to Off or Alert. To view available settings from the infotainment screen, touch Settings > Vehicle > Collision/Detection Systems > Rear Pedestrian Detection.

If equipped, alerts can be set to beeps or seat pulses. To view available settings from the infotainment screen, touch Settings > Vehicle > Collision/Detection Systems > Alert Type.

### Rear Cross Traffic Alert (RCTA) System

If equipped, Rear Cross Traffic Alert (RCTA) displays a red warning triangle with a left or right pointing arrow on the infotainment display to warn of traffic coming from the left or right. This system detects objects coming from up to 20 m (65 ft) from the left or right side of the vehicle. When an object is detected, either three beeps sound from the left or right or three Safety Alert Seat pulses occur on the left or right side, depending on the direction of the detected vehicle.

### Driving With a Trailer

Use caution while backing up when towing a trailer. The RCTA feature is automatically disabled when a trailer is attached to the vehicle.

### Turning the Features On or Off

To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Collision/Detection Systems”.

### Assistance Systems for Driving

If equipped, when driving the vehicle in a forward gear, Forward Collision Alert (FCA), Lane Keep Assist (LKA), Side Blind Zone Alert (SBZA), Lane Change Alert (LCA), Automatic Emergency Braking (AEB), and/or the Front Pedestrian Braking (FPB) System can help to avoid a crash or reduce crash damage.

### Forward Collision Alert (FCA) System

If equipped, the FCA system may help to avoid or reduce the harm caused by front-end crashes. When approaching a vehicle ahead too quickly, FCA provides a red flashing alert on the windshield and

rapidly beeps or pulses the driver seat. FCA also lights an amber visual alert if following another vehicle much too closely.

FCA detects vehicles within a distance of approximately 60 m (197 ft) and operates at speeds above 8 km/h (5 mph). If the vehicle has Adaptive Cruise Control (ACC), it can detect vehicles to distances of approximately 110 m (360 ft) and operates at all speeds. See *Adaptive Cruise Control (Advanced)* ⇨ 200.

### Warning

FCA is a warning system and does not apply the brakes. When approaching a slower-moving or stopped vehicle ahead too rapidly, or when following a vehicle too closely, FCA may not provide a warning with enough time to help avoid a crash. It also may not provide any warning at all. FCA does not warn of pedestrians, animals, signs, guardrails, bridges, construction barrels, or other objects. Be ready to take action and apply the brakes. See *Defensive Driving* ⇨ 170.

FCA can be disabled. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Collision/Detection Systems”.

### Detecting the Vehicle Ahead

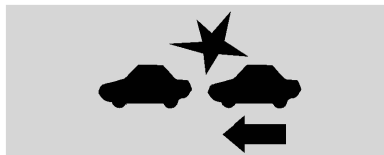


FCA warnings will not occur unless the FCA system detects a vehicle ahead. When a vehicle is detected, the vehicle ahead indicator will display green. Vehicles may not be detected on curves, highway exit ramps, or hills, due to poor visibility; or if a vehicle ahead is partially blocked by pedestrians or other objects. FCA will not detect another vehicle ahead until it is completely in the driving lane.

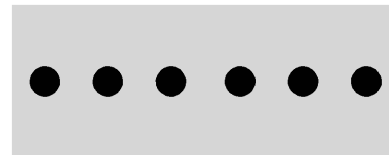
### Warning

FCA does not provide a warning to help avoid a crash, unless it detects a vehicle. FCA may not detect a vehicle ahead if the FCA sensor is blocked by dirt, snow, or ice, or if the windshield is damaged. It may also not detect a vehicle on winding or hilly roads, or in conditions that can limit visibility such as fog, rain, or snow, or if the headlamps or windshield are not cleaned or in proper condition. Keep the windshield, headlamps, and FCA sensors clean and in good repair.

### Collision Alert



With Head-Up Display



### Without Head-Up Display

When your vehicle approaches another detected vehicle too rapidly, the red FCA display will flash on the windshield. Also, eight rapid high-pitched beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. When this Collision Alert occurs, the brake system may prepare for driver braking to occur more rapidly which can cause a brief, mild deceleration. Continue to apply the brake pedal as needed.

### Tailgating Alert



The vehicle ahead indicator will display amber when you are following a vehicle ahead much too closely.

## 220 Driving and Operating

### Selecting the Alert Timing



The Collision Alert control is on the steering wheel. Press  to set the FCA timing to Far, Medium, or Near. 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.

If your vehicle is equipped with Adaptive Cruise Control (ACC), changing the FCA timing setting automatically changes the following gap setting (Far, Medium, or Near).

### Following Distance Indicator

The following distance to a moving vehicle ahead in your path is indicated in following time in seconds on the Driver Information Center (DIC). See *Driver Information Center (DIC)* ⇨ 106. The minimum following time is 0.5 seconds away. If there is no vehicle detected ahead, or the vehicle ahead is out of sensor range, dashes will be displayed.

### Unnecessary Alerts

FCA may provide unnecessary alerts for turning vehicles, vehicles in other lanes, objects that are not vehicles, or shadows. These alerts are normal operation and the vehicle does not need service.

### Cleaning the System

If the FCA system does not seem to operate properly, this may correct the issue:

- Clean the outside of the windshield in front of the rearview mirror.
- Clean the entire front of the vehicle.
- Clean the headlamps.

### Automatic Emergency Braking (AEB)

If equipped, the AEB system may help avoid or reduce the harm caused by front-end crashes. AEB also includes Intelligent Brake Assist (IBA). When the system detects a vehicle in the path ahead that is traveling in the same direction, and that you may crash into, it can provide a boost to braking, or automatically brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear. Depending on the situation, the vehicle may automatically brake moderately or hard. This Automatic Emergency Braking can only occur if a vehicle is detected. Vehicle detection is shown by the Forward Collision Alert (FCA) vehicle ahead indicator being lit. See *Forward Collision Alert (FCA) System* ⇨ 218.

The system works when driving in a forward gear between 8 km/h (5 mph) and 80 km/h (50 mph), or on vehicles with Adaptive Cruise Control (ACC), above 4 km/h (2 mph). It can detect vehicles up to approximately 60 m (197 ft).

 **Warning**

AEB is an emergency crash preparation feature and is not designed to avoid crashes. Do not rely on AEB to brake the vehicle. AEB will not brake outside of its operating speed range and only responds to detected vehicles.

AEB may not:

- Detect a vehicle ahead on winding or hilly roads.
- Detect all vehicles, especially vehicles with a trailer, tractors, muddy vehicles, etc.
- Detect a vehicle when weather limits visibility, such as in fog, rain, or snow.
- Detect a vehicle ahead if it is partially blocked by pedestrians or other objects.

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

AEB may slow the vehicle to a complete stop to try to avoid a potential crash. If this happens, AEB may engage the Electric

Parking Brake (EPB) to hold the vehicle at a stop. Release the EPB or firmly press the accelerator pedal.

 **Warning**

AEB may automatically brake the vehicle suddenly in situations where it is unexpected and undesired. It could respond to a turning vehicle ahead, guardrails, signs, and other non-moving objects. To override AEB, firmly press the accelerator pedal, if it is safe to do so.

**Intelligent Brake Assist (IBA)**

IBA may activate when the brake pedal is applied quickly by providing a boost to braking based on the speed of approach and distance to a vehicle ahead.

Minor brake pedal pulsations or pedal movement during this time is normal and the brake pedal should continue to be applied as needed. IBA will automatically disengage only when the brake pedal is released.

 **Warning**

IBA may increase vehicle braking in situations when it may not be necessary. You could block the flow of traffic. If this occurs, take your foot off the brake pedal and then apply the brakes as needed.

AEB and IBA can be disabled through vehicle settings. To view available settings for this feature, touch the Settings icon on the infotainment home page. Select “Vehicle” to display the list of available options and select “Collision/Detection Systems”.

 **Warning**

Using AEB or IBA while towing a trailer could cause you to lose control of the vehicle and crash. Turn the system to Alert or Off when towing a trailer.


A system unavailable message may display if:

- The front of the vehicle or windshield is not clean.
- Heavy rain or snow is interfering with object detection.
- There is a problem with the StabiliTrak/Electronic Stability Control (ESC) system.

## 222 Driving and Operating

The AEB system does not need service.

### Front Pedestrian Braking (FPB) System

If equipped, the FPB system may help avoid or reduce the harm caused by front-end crashes with nearby pedestrians when driving in a forward gear. FPB displays an amber indicator, , when a nearby pedestrian is detected ahead. When approaching a detected pedestrian too quickly, FPB provides a red flashing alert on the windshield and rapidly beeps or pulses the driver seat. FPB can provide a boost to braking or automatically brake the vehicle. This system includes Intelligent Brake Assist (IBA), and the Automatic Emergency Braking (AEB) system may also respond to pedestrians. See *Automatic Emergency Braking (AEB)* ⇨ 220.

The FPB system can detect and alert to pedestrians in a forward gear at speeds between 8 km/h (5 mph) and 80 km/h (50 mph). During daytime driving, the system detects pedestrians up to a distance of approximately 40 m (131 ft). During nighttime driving, system performance is very limited.

#### Warning

FPB does not provide an alert or automatically brake the vehicle, unless it detects a pedestrian. FPB may not detect pedestrians, including children:

- When the pedestrian is not directly ahead, fully visible, or standing upright, or when part of a group.
- Due to poor visibility, including nighttime conditions, fog, rain, or snow.
- If the FPB sensor is blocked by dirt, snow, or ice.
- If the headlamps or windshield are not cleaned or in proper condition.

Be ready to take action and apply the brakes. For more information, see *Defensive Driving* ⇨ 170. Keep the windshield, headlamps, and FPB sensor clean and in good repair.

FPB can be set to Off, Alert, or Alert and Brake through vehicle settings. To view available settings from the infotainment screen, touch Settings > Vehicle > Collision/Detection Systems.

### Detecting the Pedestrian Ahead

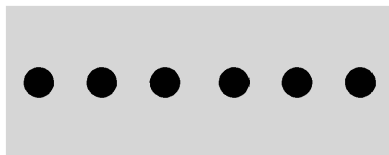


FPB alerts and automatic braking will not occur unless the FPB system detects a pedestrian. When a pedestrian that may enter the vehicle's forward path is detected, the pedestrian ahead indicator will display amber.

#### Front Pedestrian Alert



With Head-Up Display



#### Without Head-Up Display

When the vehicle approaches a pedestrian ahead too rapidly, the red FPB alert display will flash on the windshield. Eight rapid high-pitched beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. When this Pedestrian 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 Front Pedestrian Alert occurs.

#### Automatic Braking

If FPB detects it is about to crash into a pedestrian directly ahead, and the brakes have not been applied, FPB may automatically brake moderately or brake hard. This can help to avoid some very low speed pedestrian crashes or reduce pedestrian injury. FPB can automatically brake to detected pedestrians between

8 km/h (5 mph) and 80 km/h (50 mph). Automatic braking levels may be reduced under certain conditions, such as higher speeds.

If this happens, Automatic Braking may engage the Electric Parking Brake (EPB) to hold the vehicle at a stop. Release the EPB. A firm press of the accelerator pedal will also release Automatic Braking and the EPB.

#### Warning

FPB may alert or automatically brake the vehicle suddenly in situations where it is unexpected and undesired. It could falsely alert or brake for objects similar in shape or size to pedestrians, including shadows. This is normal operation and the vehicle does not need service. To override Automatic Braking, firmly press the accelerator pedal, if it is safe to do so.

Automatic Braking can be disabled through vehicle settings. To view available settings from the infotainment screen, touch Settings > Vehicle > Collision/Detection Systems > Front Pedestrian Detection.

#### Warning

Using AEB or IBA while towing a trailer could cause you to lose control of the vehicle and crash. Turn the system to Alert or Off when towing a trailer.

#### Cleaning the System

If FPB does not seem to operate properly, cleaning the outside of the windshield in front of the rearview mirror may correct the issue.

#### Side Blind Zone Alert (SBZA)

If equipped, the SBZA system is a lane-changing aid that assists drivers with avoiding crashes that occur with moving vehicles in the side blind zone, or blind spot areas. When the vehicle is in a forward gear, the left or right side mirror display will light up if a moving vehicle is detected in that blind zone. If the turn signal is activated and a vehicle is also detected on the same side, the display will flash as an extra warning not to change lanes. Since this system is part of the Lane Change Alert (LCA) system, read the entire LCA section before using this feature.

## 224 Driving and Operating

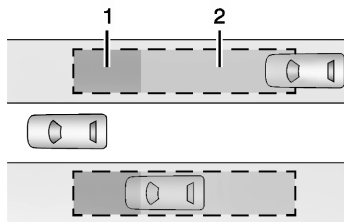
### Lane Change Alert (LCA)

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

#### Warning

LCA does not alert the driver to vehicles outside of the system detection zones, pedestrians, bicyclists, or animals. It may not provide alerts when changing lanes under all driving conditions. Failure to use proper care when changing lanes may result in injury, death, or vehicle damage. Before making a lane change, always check mirrors, glance over your shoulder, and use the turn signals.

#### LCA Detection Zones



1. SBZA Detection Zone
2. LCA Detection Zone

The LCA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2 m (6 ft) off the ground. The Side Blind Zone Alert (SBZA) warning area starts at approximately the middle of the vehicle and goes back 5 m (16 ft). Drivers are also warned of vehicles rapidly approaching from up to 70 m (230 ft) behind the vehicle.

#### How the System Works

The LCA symbol lights up in the side mirrors when the system detects a moving vehicle in the next lane over that is in the side

blind zone or rapidly approaching that zone from behind. A lit LCA symbol indicates it may be unsafe to change lanes. Before making a lane change, check the LCA display, check mirrors, glance over your shoulder, and use the turn signals.



Left Side Mirror  
Display



Right Side Mirror  
Display

When the vehicle is started, both outside mirror LCA displays will briefly come on to indicate the system is operating. When the vehicle is in a forward gear, the left or right side mirror display will light up if a moving vehicle is detected in the next lane over in that blind zone or rapidly approaching that zone. If the turn signal is activated in the same direction as a detected vehicle, this display will flash as an extra warning not to change lanes.

LCA can be disabled through vehicle personalization. When you disable LCA, SBZA is also disabled. To view available settings

from the infotainment screen, touch Settings > Vehicle > Collision/Detection Systems. If LCA is disabled by the driver, the LCA mirror displays will not light up.

### When the System Does Not Seem to Work Properly

The LCA system requires some driving for the system to calibrate to maximum performance. This calibration may occur more quickly if the vehicle is driving on a straight highway road with traffic and roadside objects (e.g., guardrails, barriers).

LCA displays may not come on when passing a vehicle quickly, for a stopped vehicle, or when towing a trailer. The LCA detection zones that extend back from the side of the vehicle do not move further back when a trailer is towed. Use caution while changing lanes when towing a trailer. LCA may alert to objects attached to the vehicle, such as a trailer, bicycle, or object extending out to either side of the vehicle. Attached objects may also interfere with the detection of vehicles. This is normal system operation; the vehicle does not need service.

LCA may not always alert the driver to vehicles in the next lane over, especially in wet conditions or when driving on sharp

curves. The system does not need to be serviced. The system may light up due to guardrails, signs, trees, shrubs, and other non-moving objects. This is normal system operation; the vehicle does not need service.

LCA may not operate when the LCA sensors in the left or right corners of the rear bumper are covered with mud, dirt, snow, ice, or slush, or in heavy rainstorms. For cleaning instructions, see "Washing the Vehicle" under *Exterior Care* ➔ 281. If the DIC still displays the system unavailable message after cleaning both sides of the vehicle toward the rear corners of the vehicle, see your dealer.

If the LCA displays do not light up when moving vehicles are in the side blind zone or are rapidly approaching this zone and the system is clean, the system may need service. Take the vehicle to your dealer.

### Lane Keep Assist (LKA)

If equipped, LKA may help avoid crashes due to unintentional lane departures. This system uses a camera to detect lane markings. The LKA can be ready to assist at speeds between 60 km/h (37 mph) and 180 km/h (112 mph). On some vehicles, the system will instead operate above 50 km/h

(31 mph). LKA may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking. It may also provide a Lane Departure Warning (LDW) alert if the vehicle crosses a detected lane marking. This system is not intended to keep the vehicle centered in the lane. LKA will not assist and alert if the turn signal is active in the direction of lane departure, or if it detects that you are accelerating, braking or actively steering. LKA can be overridden by turning the steering wheel. If the system detects you are steering intentionally across a lane marker, the LDW may not be given. Do not expect the LDW to occur when you are intentionally crossing a lane marker.

### Warning

The LKA system does not continuously steer the vehicle. It may not keep the vehicle in the lane or give a Lane Departure Warning (LDW) alert, even if a lane marking is detected.

The LKA and LDW systems may not:

- Provide an alert or enough steering assist to avoid a lane departure or crash.

(Continued)

## 226 Driving and Operating

### Warning (Continued)

- Detect lane markings under poor weather or visibility conditions. This can occur if the windshield or headlamps are blocked by dirt, snow, or ice; if they are not in proper condition; or if the sun shines directly into the camera.
- Detect road edges.
- Detect lanes on winding or hilly roads.

If LKA only detects lane markings on one side of the road, it will only assist or provide an LDW alert when approaching the lane on the side where it has detected a lane marking. Even with LKA and LDW, you must steer the vehicle. Always keep your attention on the road and maintain proper vehicle position within the lane, or vehicle damage, injury, or death could occur. Always keep the windshield, headlamps, and camera sensors clean and in good repair. Do not use LKA in bad weather conditions or on roads with unclear lane markings, such as construction zones.

### Warning


Using LKA on slippery roads could cause loss of control of the vehicle and a crash. Turn the system off.





### Warning

LKA will not alert the driver if a towed trailer crosses into an adjacent lane of travel. Serious injury or property damage may occur if the trailer moves into another lane. Always monitor the trailer position while towing to make sure it is within the same lane as the tow vehicle.

### How the System Works

LKA uses a camera sensor installed on the windshield ahead of the rearview mirror to detect lane markings. It may provide brief steering assist if it detects an unintended lane departure. It may further provide an audible alert or the driver seat may pulse indicating that a lane marking has been crossed. The system does not provide a Lane Departure Warning (LDW) when intentionally steering across a lane marker.

To turn LKA on and off, press  on the center stack. If equipped, the indicator light on the button comes on when LKA is on and turns off when LKA is disabled. In some vehicles a long press of over three seconds is required to turn LKA off.

When on,  is white, if equipped, indicating that the system is not ready to assist.  is green if LKA is ready to assist. LKA may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking.  is amber when assisting. It may also provide a Lane Departure Warning (LDW) alert by flashing  amber if the vehicle crosses a detected lane marking. Additionally, there may be three beeps, or the driver seat may pulse three times, on the right or left, depending on the lane departure direction.

### Take Steering

The LKA system does not continuously steer the vehicle. If LKA does not detect active driver steering, an alert and chime may be provided. Steer the vehicle to dismiss. LKA may become temporarily unavailable after repeated take steering alerts.

### When the System Does Not Seem to Work Properly

The system performance may be affected by:

- Close vehicles ahead.
- Sudden lighting changes, such as when driving through tunnels.
- Banked roads.
- Roads with poor lane markings, such as two-lane roads.

If the LKA system is not functioning properly when lane markings are clearly visible, cleaning the windshield may help.

A camera blocked message may display if the camera is blocked. Some driver assistance systems may have reduced performance or not work at all. An LKA or LDW unavailable message may display if the systems are temporarily unavailable. This message could be due to a blocked camera. The LKA system does not need service. Clean the outside of the windshield behind the rearview mirror.

LKA assistance and/or LDW alerts may occur due to tar marks, shadows, cracks in the road, temporary or construction lane markings, or other road imperfections. This

is normal system operation; the vehicle does not need service. Turn LKA off if these conditions continue.

## Fuel

### Top Tier Fuel

GM recommends the use of TOP TIER Detergent Gasoline to keep the engine clean, reduce engine deposits, and maintain optimal vehicle performance. Look for the TOP TIER Logo or see [www.toptiergas.com](http://www.toptiergas.com) for a list of TOP TIER Detergent Gasoline marketers and applicable countries.



## Recommended Fuel



Unleaded petrol with a posted octane rating of 95 RON or greater and with ethanol up to 10% by volume is recommended. If unavailable, unleaded petrol rated at 91 RON can be used, but will result in reduced performance and driveability, and an audible knocking noise may be heard. Once available, 95 RON petrol or greater should continue to be used. If heavy knocking is heard when using unleaded petrol rated at 95 RON or greater, the engine needs service.

## Prohibited Fuels

### Caution

Do not use fuels with any of the following conditions; doing so may damage the vehicle and void its warranty:

(Continued)

## 228 Driving and Operating

### Caution (Continued)

- Fuel with any amount of methanol, methylal, ferrocene, and aniline. These fuels can corrode metal fuel system parts or damage plastic and rubber parts.
- Fuel containing metals such as methylcyclopentadienyl manganese tricarbonyl (MMT), which can damage the emissions control system and spark plugs.
- Fuel with a posted octane rating of less than the recommended fuel. Using this fuel will lower fuel economy and performance, and may decrease the life of the emissions catalyst.

### Fuel Additives

TOP TIER Detergent Gasoline is highly recommended for use with your vehicle. If your country does not have TOP TIER Detergent Gasoline, add ACDelco Fuel System Treatment Plus-Gasoline to the vehicle's gasoline fuel tank at every oil change or 15 000 km (9,000 mi), whichever occurs first. TOP TIER Detergent Gasoline and ACDelco Fuel System Treatment Plus-Gasoline will help keep your vehicle's

engine fuel deposit free and performing optimally. If you are unable to obtain ACDelco Fuel System Treatment Plus - Gasoline, consult your dealer for the GM approved additive available in your country.

### Filling the Tank

An arrow on the fuel gauge indicates which side of the vehicle the fuel door is on. See *Fuel Gauge* ⇨ 96.

### Warning

Fuel vapors and fuel fires burn violently and can cause injury or death.

Follow these guidelines to help avoid injuries to you and others:

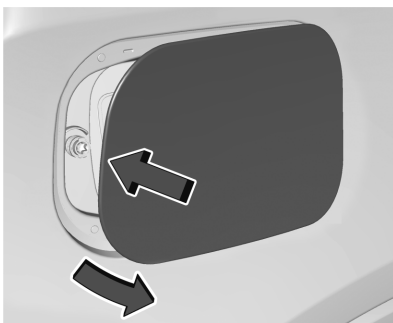
- Read and follow all the instructions on the fuel pump island.
- Turn off the engine when refueling.
- Keep sparks, flames, and smoking materials away from fuel.
- Do not leave the fuel pump unattended.
- Avoid using electronic devices while refueling.

(Continued)

### Warning (Continued)

- Do not re-enter the vehicle while pumping fuel.
- Keep children away from the fuel pump and never let children pump fuel.
- Before touching the fill nozzle, touch a metallic object to discharge static electricity from your body.
- Fuel can spray out if the fill nozzle is inserted too quickly. This spray can happen if the tank is nearly full, and is more likely in hot weather. Insert the fill nozzle slowly and wait for any hiss noise to stop before beginning to flow fuel.

The fuel door unlocks when the vehicle doors are unlocked. See *Remote Key Operation* ⇨ 7.



To open the fuel door, push and release the rearward center edge of the door.

The capless refueling system does not have a fuel cap. Fully insert and latch the fill nozzle, begin fueling.

#### **Warning**

Overfilling the fuel tank by more than three clicks of a standard fill nozzle may cause:

- Vehicle performance issues, including engine stalling and damage to the fuel system.
- Fuel spills.
- Under certain conditions, fuel fires.

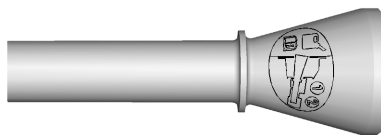
Be careful not to spill fuel. Wait five seconds after you have finished pumping before removing the fill nozzle. Clean fuel from painted surfaces as soon as possible. See *Exterior Care* ⇨ 281. Push the fuel door closed until it latches.

#### **Warning**

If a fire starts while you are refueling, do not remove the fill nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.

#### **Filling the Tank with a Portable Fuel Container**

If the vehicle runs out of fuel and must be filled from a portable fuel container:



1. Locate the capless funnel adapter in the rear cargo area under the load floor tray.
2. Insert and latch the funnel into the capless fuel system.

#### **Warning**

Attempting to refuel from a portable fuel container without using the funnel adapter may cause fuel spillage and damage the capless fuel system. This could cause a fire. You or others could be badly burned and the vehicle could be damaged.

3. Remove and clean the funnel adapter and return it to the storage location.

#### **Filling a Portable Fuel Container**

#### **Warning**

Never fill a portable fuel container while it is in the vehicle. Static electricity discharge from the container can ignite the fuel vapor. You or others could be badly burned and the vehicle could be damaged. To help avoid injury to you and others:

- Dispense fuel only into approved containers.

(Continued)

## 230 Driving and Operating

### Warning (Continued)

- Do not fill a container while it is inside a vehicle, in a vehicle's trunk, in a pickup bed, or on any surface other than the ground.
- Bring the fill nozzle in contact with the inside of the fill opening before operating the nozzle. Maintain contact until filling is complete.
- Keep sparks, flames, and smoking materials away from fuel.
- Avoid using electronic devices while pumping fuel.

## Trailer Towing

### General Towing Information

#### Warning

Never tow a trailer with your vehicle. It was not designed or intended to tow a trailer.

## Conversions and Add-Ons

### Add-On Electrical Equipment

#### Warning

The Data Link Connector (DLC) is used for vehicle service and Emission Inspection/Maintenance testing. See *Malfunction Indicator Lamp (Check Engine Light)* ⇨ 99. A device connected to the DLC — such as an aftermarket fleet or driver-behavior tracking device — may interfere with vehicle systems. This could affect vehicle operation and cause a crash. Such devices may also access information stored in the vehicle's systems.

#### Caution

Some electrical equipment can damage the vehicle or cause components to not work and would not be covered by the vehicle warranty. Always check with your dealer before adding electrical equipment.

Add-on equipment can drain the vehicle's 12-volt battery, even if the vehicle is not operating.

The vehicle has an airbag system. Before attempting to add anything electrical to the vehicle, see *Servicing the Airbag-Equipped Vehicle* ⇨ 58 and *Adding Equipment to the Airbag-Equipped Vehicle* ⇨ 58.

## Vehicle Care 231

### Vehicle Care

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## 232 Vehicle Care

### General Information

For service and parts needs, visit your dealer. You will receive genuine parts and trained and supported service people.

### 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, Driver Assistance Systems, and electronic systems like antilock brakes, traction control, and stability control. These accessories or modifications could even cause malfunction or damage not covered by the vehicle warranty.

Damage to suspension components caused by modifying vehicle height outside of factory settings will not be covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorize the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see *Adding Equipment to the Airbag-Equipped Vehicle* ⇨ 58.

### Vehicle Checks

#### Doing Your Own Service Work

##### **Warning**

It can be dangerous to work on your vehicle if you do not have the proper knowledge, service manual, tools, or parts. Always follow owner's manual procedures and consult the service manual for your vehicle before doing any service work.

If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can.

This vehicle has an airbag system. Before attempting to do your own service work, see *Servicing the Airbag-Equipped Vehicle* ⇨ 58.

If the vehicle is equipped with remote vehicle start, open the hood before performing any service work to prevent remote starting the vehicle accidentally. See *Remote Vehicle Start* ⇨ 12.

Keep a record with all parts receipts and list the mileage and the date of any service work performed.

##### **Caution**

Even small amounts of contamination can cause damage to vehicle systems. Do not allow contaminants to contact the fluids, reservoir caps, or dipsticks.

### Hood

##### **Warning**


For vehicles with auto engine stop/start, turn the vehicle off before opening the hood. If the vehicle is on, the engine will start when the hood is opened. You or others could be injured.

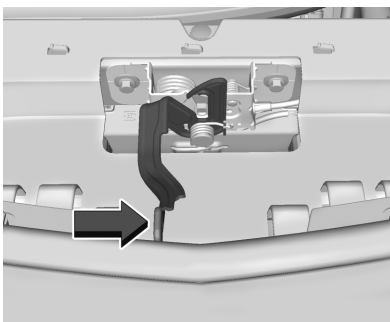
 **Warning**

Components under the hood can get hot from running the engine. To help avoid the risk of burning unprotected skin, never touch these components until they have cooled, and always use a glove or towel to avoid direct skin contact.

Clear any snow from the hood before opening.

**To open the hood:**

1. Pull the hood release lever with the  symbol. It is on the lower left side of the instrument panel.



2. Go to the front of the vehicle and locate the secondary release lever under the front center of the hood. Push the secondary hood release lever to the right to release.
3. After you have partially lifted the hood, the gas strut system will automatically lift the hood and hold it in the fully open position.

**To close the hood:**

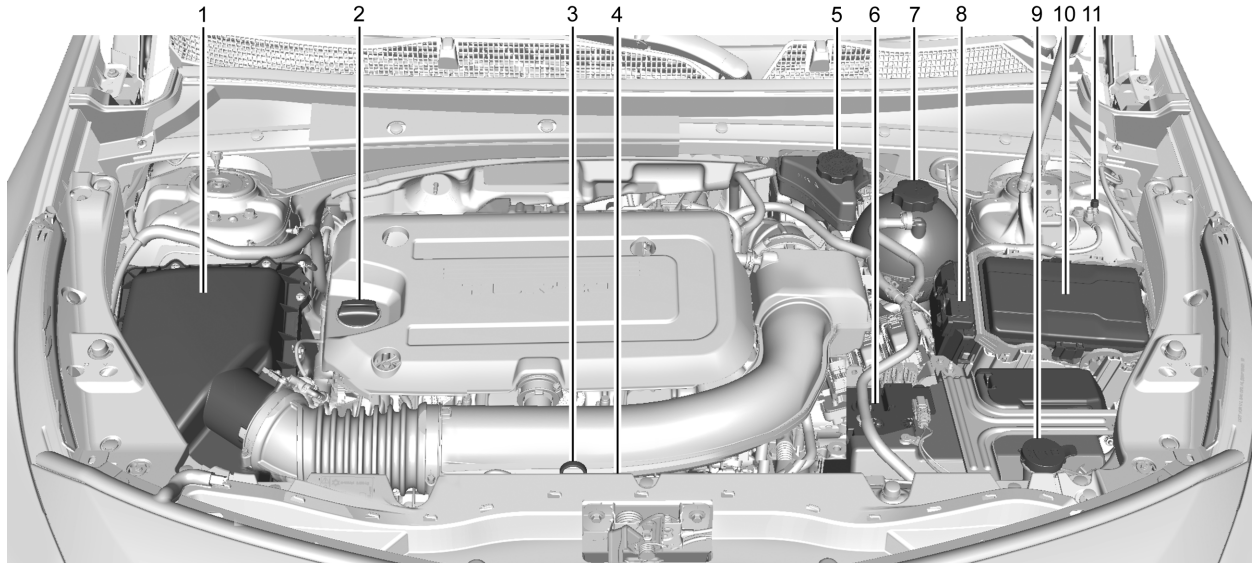
1. Before closing the hood, be sure all filler caps are on properly, and all tools are removed.
2. Pull the hood down until the strut system is no longer holding up the hood.
3. Allow the hood to fall. Check to make sure the hood is latched completely. Repeat this process with additional force if necessary.

 **Warning**

Do not drive the vehicle if the hood is not latched completely. The hood could open fully, block your vision, and cause a crash. You or others could be injured. Always close the hood completely before driving.

## 234 Vehicle Care

### Engine Compartment Overview



1. *Engine Air Cleaner/Filter* ⇨ 238.
2. *Engine Oil Fill Cap*. See *Engine Oil* ⇨ 235.
3. *Engine Oil Dipstick*. See *Engine Oil* ⇨ 235.
4. *Engine Cooling Fan (Out of View)*. See *Cooling System* ⇨ 239.
5. *Brake Fluid Reservoir*. See *Brake Fluid* ⇨ 244.
6. *Battery* ⇨ 245.
7. *Engine Coolant Surge Tank and Pressure Cap*. See *Cooling System* ⇨ 239.
8. *Positive (+) Battery Terminal (Under Cover)*. See *Jump Starting* ⇨ 278.
9. *Windshield Washer Fluid Reservoir*. See *Washer Fluid* ⇨ 243.
10. *Engine Compartment Fuse Block* ⇨ 252.
11. *Remote Negative (-) Battery Terminal*. See *Jump Starting* ⇨ 278.

## Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Use engine oil approved to the proper specification and of the proper viscosity grade. See “Selecting the Right Engine Oil” in this section.
- Check the engine oil level regularly and maintain the proper oil level. See “Checking Engine Oil” and “When to Add Engine Oil” in this section.
- Change the engine oil at the appropriate time. See *Engine Oil Life System* ⇨ 237.
- Always dispose of engine oil properly. See “What to Do with Used Oil” in this section.

## Checking Engine Oil

Check the engine oil level regularly, every 650 km (400 mi), especially prior to a long trip. The engine oil dipstick handle is a loop. See *Engine Compartment Overview* ⇨ 234 for the location.

### Warning

The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

If a low oil Driver Information Center (DIC) message displays, check the oil level.

Follow these guidelines:

- To get an accurate reading, park the vehicle on level ground. Check the engine oil level after the engine has been off for at least two hours. Checking the engine oil level on steep grades or too soon after engine shutoff can result in incorrect readings. Accuracy improves when checking a cold engine prior to starting. Remove the dipstick and check the level.
- If unable to wait two hours, the engine must be off for at least 15 minutes if the engine is warm, or at least 30 minutes if the engine is not warm. Pull out the dipstick, wipe it with a clean paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.

## When to Add Engine Oil



If the oil is below the cross-hatched area at the tip of the dipstick and the engine has been off for at least 15 minutes, add 1 L (1 qt) of the recommended oil and then

## 236 Vehicle Care

recheck the level. See “Selecting the Right Engine Oil” later in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications* ⇨ 298.

### 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 the oil level is above the operating range (i.e., the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range), the engine could be damaged. Drain the excess oil or limit driving of the vehicle, and seek a service professional to remove the excess oil.

See *Engine Compartment Overview* ⇨ 234 for the location of the engine oil fill cap.

Add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when through.

### Selecting the Right Engine Oil

Selecting the right engine oil depends on both the proper oil specification and viscosity grade. See *Recommended Fluids and Lubricants* ⇨ 295.

#### Specification

Use full synthetic 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 or equivalent can result in engine damage not covered by the vehicle warranty.

#### Viscosity Grade

Use SAE 0W-20 viscosity grade engine oil.

When selecting an oil of the appropriate viscosity grade, it is recommended to select an oil of the correct specification. See “Specification” earlier in this section.

### Engine Oil Additives/Engine Oil Flushes

Do not add anything to the oil. The recommended oils meeting the dexos1 specification are all that is needed for good performance and engine protection.

Engine oil system flushes are not recommended and could cause engine damage not covered by the vehicle warranty.

### What to Do with Used Oil

Used engine oil contains certain elements that can be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the

trash or pouring it on the ground, into sewers, or into streams or bodies of water. Recycle it by taking it to a place that collects used oil.

## Engine Oil Life System

### When to Change Engine Oil

This vehicle has a computer system that indicates when to change the engine oil and filter. This is based on a combination of factors which include engine revolutions, engine temperature, and miles driven. Based on driving conditions, the mileage at which an oil change is indicated can vary considerably. For the oil life system to work properly, the system must be reset every time the oil is changed.

When the system has calculated that oil life has been diminished, it indicates that an oil change is necessary. A CHANGE ENGINE OIL SOON message comes on. Change the oil as soon as possible within the next 1 000 km (600 mi). It is possible that, if driving under the best conditions, the oil life system may indicate that an oil change is not necessary for up to a year. The engine oil and filter must be changed at least once a year and at this time the system must be reset. Your dealer has trained service people who will

perform this work and reset the system. It is also important to check the oil regularly over the course of an oil drain interval and keep it at the proper level.

If the system is ever reset accidentally, the oil must be changed at 5 000 km (3,000 mi) since the last oil change. Remember to reset the oil life system whenever the oil is changed.

### How to Reset the Engine Oil Life System

Reset the system whenever the engine oil is changed so that the system can calculate the next engine oil change. To reset the system:

1. Using the DIC controls on the right side of the steering wheel, display REMAINING OIL LIFE on the DIC. See *Driver Information Center (DIC)* ⇨ 106. When remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display.
2. Press ✓ on the DIC controls and hold down for a few seconds to clear the CHANGE ENGINE OIL SOON message and reset the oil life at 100%.

Be careful not to reset the oil life display accidentally at any time other than after the oil is changed. It cannot be reset accurately until the next oil change.

The system is reset when the CHANGE ENGINE OIL SOON message is off.

If the CHANGE ENGINE OIL SOON message comes back on when the vehicle is started, the engine oil life system has not been reset. Repeat the procedure.

## Automatic Transmission Fluid

A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to your dealer and have it repaired as soon as possible.

### Caution

Use of the incorrect automatic transmission fluid may damage the vehicle, and the damage may not be covered by the vehicle warranty. Always use the correct automatic transmission fluid. See *Recommended Fluids and Lubricants* ⇨ 295.

See your dealer to have the fluid and filter changed at the intervals listed in the *Maintenance Schedule* ⇨ 291.

## 238 Vehicle Care

### Engine Air Filter Life System

If equipped, this feature provides the engine air filter's remaining life and best timing for a change. The timing to change an engine air filter depends on driving and environmental conditions.

#### When to Change Engine Air Filter

When the Driver Information Center (DIC) displays a message to replace the engine air filter at the next oil change, follow this timing.

When the DIC displays a message to replace the engine air filter soon, replace the engine air filter at the earliest convenience. The system must be reset after the engine air filter is changed.

If the DIC displays a message to check the engine air filter system, see your dealer.

#### How to Reset Engine Air Filter Life System

To reset:

1. Place the vehicle in P (Park).
2. Display the Air Filter Life on the DIC. See *Driver Information Center (DIC)* ⇨ 106.

3. Press  $\triangleright$  on the steering wheel to move to the Reset/Disable display area. Select Reset then press  $\checkmark$ .

4. Press  $\checkmark$  to confirm to reset.

### 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* ⇨ 234.

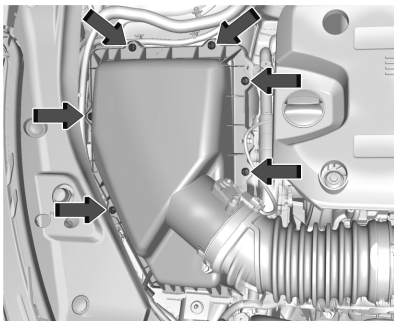
#### When to Inspect the Engine Air Cleaner/Filter

- For intervals on changing and inspecting the engine air filter, see *Maintenance Schedule* ⇨ 291.
- If equipped with Engine Air Filter Life System, see *Engine Air Filter Life System* ⇨ 238.
- If driving in very dusty areas, follow the engine air filter inspecting and changing intervals, see *Maintenance Schedule* ⇨ 291.

### How to Inspect/Replace the Engine Air Cleaner/Filter

Do not start the engine or have the engine running with the engine air cleaner/filter housing open. Before removing the engine air cleaner/filter, make sure that the engine air cleaner/filter housing and nearby components are free of dirt and debris. Remove the engine air cleaner/filter. Lightly tap and shake the engine air cleaner/filter (away from the vehicle), to release dust and dirt. Inspect the engine air cleaner/filter for damage, and replace if damaged. Do not clean the engine air cleaner/filter or components with water or compressed air.

To inspect or replace the engine air cleaner/ filter:



1. Remove the six screws on top of the engine air cleaner/filter housing.
2. Lift the air cleaner/filter cover housing away from the engine.
3. Pull out the filter.

 **Warning**

If part replacement is necessary, the part must be replaced with one of the same part number or with an equivalent part. Use of a replacement part without the  
(Continued)

**Warning (Continued)**

same fit, form, and function may result in personal injury or damage to the vehicle.

4. Inspect or replace the engine air cleaner/ filter.
5. Reverse Steps 1–3 to reinstall the filter cover housing.
6. If equipped, reset the engine air filter life system after replacing the engine air filter. See *Engine Air Filter Life System* ⇨ 238.

 **Warning**

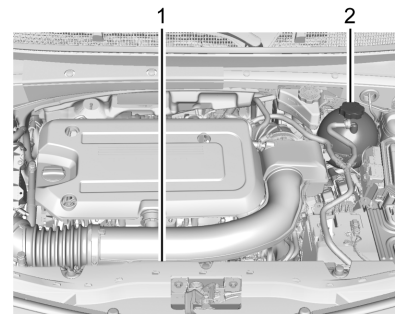
Operating the engine with the air cleaner/filter off can cause you or others to be burned. Use caution when working on the engine. Do not start the engine or drive the vehicle with the air cleaner/ filter off, as flames may be present if the engine backfires.

**Caution**

If the air cleaner/filter is off, dirt can easily get into the engine, which could damage it. Always have the air cleaner/ filter in place when driving.

**Cooling System**

The cooling system allows the engine to maintain the correct working temperature.



1. Electric Engine Cooling Fan (Out of View)
2. Coolant Surge Tank and Pressure Cap

## 240 Vehicle Care

### Warning

An underhood electric fan can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underhood electric fan.

### Warning

Do not touch heater or radiator hoses, or other engine parts. They can be very hot and can burn you. Do not run the engine if there is a leak; all coolant could leak out. That could cause an engine fire and can burn you. Fix any leak before driving the vehicle.

### Engine Coolant

The engine cooling system in the vehicle is filled with DEX-COOL engine coolant mixture. This coolant needs to be checked and changed at appropriate levels. See *Recommended Fluids and Lubricants* ⇨ 295 and *Maintenance Schedule* ⇨ 291.

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* ⇨ 242.

### What to Use

### Warning

Do not touch heater or radiator hoses, or other engine parts. They can be very hot and can burn you. Do not run the engine if there is a leak; all coolant could leak out. That could cause an engine fire and can burn you. Fix any leak before driving the vehicle.

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.

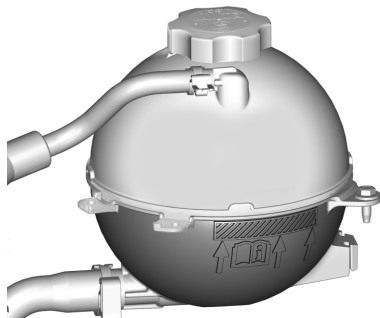
### Caution

Do not use anything other than a mix of DEX-COOL coolant that meets GM Standard GMW3420 and clean, drinkable water. Anything else can cause damage to the engine cooling system and the vehicle, which would not be covered by the vehicle warranty.

Never dispose of engine coolant by putting it in the trash, pouring it on the ground, or pouring into sewers, streams, or bodies of water. Have the coolant changed by an authorized service center, familiar with legal requirements regarding used coolant disposal. This will help protect the environment and your health.

### Checking Coolant

The vehicle must be on a level surface when checking the coolant level.



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. If coolant is visible but the coolant level mark is not at or above the indicated mark, add a 50/50 mixture of clean, drinkable water and DEX-COOL coolant. Be sure the cooling system is cool before this is done. See *Engine Overheating* ⇨ 242.

The coolant surge tank is in the engine compartment on the driver side of the vehicle. See *Engine Compartment Overview* ⇨ 234.

### How to Add Coolant to the Surge Tank

#### Warning

Spilling coolant on hot engine parts can burn you. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough.

#### Warning

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to come out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap, is hot. Wait for the cooling system and pressure cap to cool.

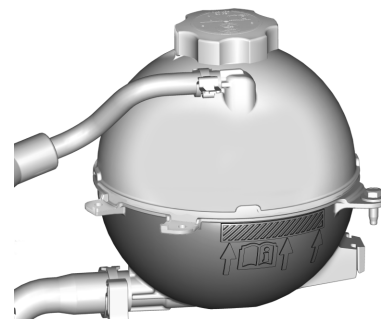
#### Caution

Failure to follow the specific coolant fill procedure could cause the engine to overheat and could cause system damage. If coolant is not visible in the surge tank, contact your dealer.

The coolant surge tank pressure cap can be removed when the cooling system, including the surge tank pressure cap and upper radiator hose, is no longer hot.



1. Turn the pressure cap slowly counterclockwise. If a hiss is heard, wait for that to stop. A hiss means there is still some pressure left.
2. Keep turning the pressure cap slowly and remove it.



## 242 Vehicle Care

3. If topping off the level in the coolant surge tank, add the proper mixture until the level reaches the mark on the front of the tank and replace the cap. Operate the vehicle. Repeat steps 1–3, as necessary.

If filling the system (such as after servicing), follow the Automatic Coolant Service Fill Instructions.

### Caution

If the pressure cap is not tightly installed, coolant loss and engine damage may occur. Be sure the cap is properly and tightly secured.

### Automatic Coolant Service Fill Instructions

This feature assists in filling and removing air from the cooling system after service of components or when coolant is added after being too low.

To activate the fill and air removal process:

1. With a cold system, add coolant to the indicated mark on the surge tank.
2. Replace the cap on the surge tank.
3. Connect the vehicle to a battery charger.
4. Turn the ignition to Service Mode. See *Ignition Positions* ⇨ 183.
5. Turn off the air conditioning.
6. Set the parking brake.
7. At the same time, press the accelerator and the brake for automatic transmission vehicles for two seconds, then release.

At the end of the cycle, check the coolant level in the surge tank and add coolant if it is low. Turn off the vehicle, allow the Electronic Control Module (ECM) to go to sleep, about 2 minutes, and repeat Steps 3-7.

Listen for pump activation and movement of the control valves while watching the level of the coolant in the surge tank. If the tank empties, turn the ignition off, carefully remove the surge tank cap, refill to the indicated mark, and repeat Steps 3-6. The fill and air removal process will run for approximately 10 minutes.

### Engine Overheating

The vehicle has several indicators to warn of the engine overheating.

There is an engine coolant temperature gauge and an engine coolant temperature warning light on the instrument cluster. See *Engine Coolant Temperature Gauge* ⇨ 96

and

*Engine Coolant Temperature Warning Light (Up/level)* ⇨ 104. The vehicle may also display a message on the Driver Information Center (DIC).

If the decision is made not to lift the hood when this warning appears, get service help right away.

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

Do not run the engine if there is a leak in the engine cooling system. This can cause a loss of all coolant and can damage the system and vehicle. Have any leaks fixed right away.

### If Steam Is Coming from the Engine Compartment

#### Warning

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to come out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap, is hot. Wait for the cooling system and pressure cap to cool.

### If No Steam Is Coming from the Engine Compartment

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 overheated area or the engine coolant temperature warning light no longer displays, the vehicle can be driven. Continue to drive the vehicle slowly for about 10 minutes. Keep a safe 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

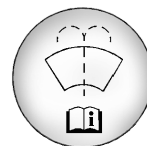
#### What to Use

When windshield washer fluid is needed, 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

The appropriate message will appear in the Driver Information Center (DIC) when the fluid level is low.



Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview* ⇨ 234 for reservoir location.

#### Caution

- Do not use washer fluid that contains any type of water repellent coating. This can cause the wiper blades to chatter or skip.
- Do not use engine coolant (antifreeze) in the windshield washer. It can damage the windshield washer system and paint.

(Continued)

## 244 Vehicle Care

### Caution (Continued)

- 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 expansion if freezing occurs, which could damage the tank if it is completely full.

### Brakes

Disc brake linings have built-in wear indicators that make a high-pitched warning sound when the brake linings are worn and new linings are needed. The sound can come and go or can be heard all the time when the vehicle is moving, except when applying the brake pedal firmly.

### ⚠ Warning

The brake wear warning sound means that soon the brakes will not work well. That could lead to a crash. When the brake wear warning sound is heard, have the vehicle serviced.

### Caution

Continuing to drive with worn-out brake linings could result in costly brake repairs.

Some driving conditions or climates can cause a brake squeal when the brakes are first applied, clearing up following several applications. 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 linings for wear and evenly tighten wheel nuts in the proper sequence to torque specifications. See *Capacities and Specifications* ⇨ 298.

Brake pads should be replaced as complete axle sets.

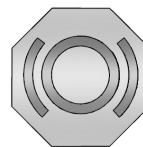
### Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign that brake service 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 can change in many ways if the wrong brake parts are installed or if parts are improperly installed.

### Brake Fluid



The brake master cylinder reservoir is filled with GM approved DOT 4 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview* ⇨ 234 for the location of the reservoir.

### Checking Brake Fluid

With the vehicle in P (Park) on a level surface, the brake fluid level should be between the minimum and maximum marks on the brake fluid reservoir.

There are only two reasons why the brake fluid level in the reservoir may go down:

- Normal brake lining wear. When new linings are installed, the fluid level goes back up.
- A fluid leak in the brake hydraulic system. Have the brake hydraulic system fixed. With a leak, the brakes will not work well.

Always clean the brake fluid reservoir cap and the area around the cap before removing it.

Do not top off the brake fluid. Adding fluid does not correct a leak. If fluid is added when the linings are worn, there will be too much fluid when new brake linings are installed. Add or remove fluid, as necessary, only when work is done on the brake hydraulic system.

#### Warning

If too much brake fluid is added, it can spill on the engine and burn, if the engine is hot enough. You or others could be burned, and the vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system.

When the brake fluid falls to a low level, the brake warning light comes on. See *Brake System Warning Light* ⇨ 100.

Brake fluid absorbs water over time which degrades the effectiveness of the brake fluid. Replace brake fluid at the specified intervals to prevent increased stopping distance. See *Maintenance Schedule* ⇨ 291.

#### What to Add

Use only GM approved DOT 4 brake fluid from a clean, sealed container. See *Recommended Fluids and Lubricants* ⇨ 295.

#### Warning

The wrong or contaminated brake fluid could result in damage to the brake system. This could result in the loss of  
(Continued)

#### Warning (Continued)

braking leading to a possible injury. Always use the proper GM approved brake fluid.

#### Caution

If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Immediately wash off any painted surface.

### Battery

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

Refer to the replacement number shown on the original battery label when a new battery is needed. See *Engine Compartment Overview* ⇨ 234 for battery location.

#### Stop/Start System

This vehicle has a Stop/Start system to shut off the engine to help conserve fuel. See *Stop/Start System* ⇨ 185.

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The vehicle has an Absorbed Glass Mat (AGM) 12-volt battery. Installation of a standard 12-volt battery will result in reduced 12-volt battery life.

When using a 12-volt battery charger on the 12-volt AGM battery, some chargers have an AGM battery setting on the charger. If available, use the AGM setting on the charger, to limit charge voltage to 14.8 volts. Follow the charger manufacturer's instructions.



### Warning

Do not use a match or flame near a vehicle's battery. If you need more light, use a flashlight.

Do not smoke near a vehicle's battery.

When working around a vehicle's battery, shield your eyes with protective glasses.

Keep children away from vehicle batteries.

### Warning

Batteries have acid that can burn you and gas that can explode. You can be hurt badly if you are not careful.

Follow instructions carefully when working around a battery.

Battery posts, terminals and related accessories contain lead and lead compounds which can cause cancer and reproductive harm. Wash hands after handling.

## Vehicle Storage

**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 maintenance unless there is a fluid leak or unusual noise. If required, have the transfer case serviced by your dealer.

## 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

(Continued)

### Warning (Continued)

begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and the transmission in N (Neutral), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.
- To check the P (Park) mechanism's holding ability: With the engine running, shift to P (Park). Then release the parking brake followed by the regular brake.

Contact your dealer if service is required.

## Wiper Blade Replacement

Windshield wiper blades should be inspected for wear or cracking.

It is a good idea to clean or replace the wiper blade assembly on a regular basis or when worn. For proper windshield wiper blade length and type, see *Maintenance Replacement Parts* ⇨ 296.

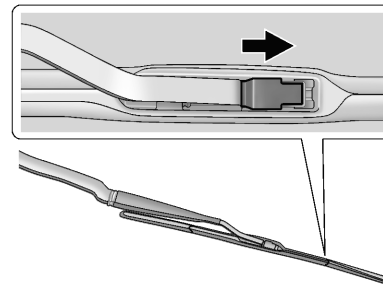
### Caution

Allowing the wiper arm to touch the windshield when no wiper blade is installed could damage the windshield. Any damage that occurs would not be covered by the vehicle warranty. Do not allow the wiper arm to touch the windshield.

### Front Wiper Blade Replacement

To replace the wiper blade assembly:

1. Pull the windshield wiper assembly away from the windshield.

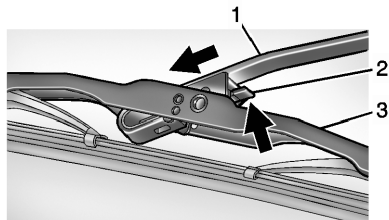


2. Lift up on the latch in the middle of the wiper blade where the wiper arm attaches.
3. With the latch open, pull the wiper blade down toward the windshield far enough to release it from the J-hooked end of the wiper arm.
4. Remove the wiper blade.
5. Reverse Steps 1–3 for wiper blade replacement.

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### Rear Wiper Blade Replacement

To remove the wiper blade:



1. Put the vehicle in accessory mode and turn on the rear windshield wiper. The wiper will stop pointing down. See *Rear Window Wiper/Washer* ⇨ 88.
2. Push ENGINE START/STOP to turn the vehicle off.
3. Lift the wiper arm away from the window.
4. Push the release lever (2) to disengage the hook and push the wiper arm (1) out of the blade assembly (3).
5. Push the new blade assembly securely on the wiper arm until the release lever clicks into place.
6. Start the engine and the rear wiper will return to its normal position.

### Windshield Replacement

#### HUD System

If equipped, the windshield is part of the HUD system. If the windshield must be replaced, get one that is designed for HUD or the HUD image may look out of focus.

#### Driver Assistance Systems

When a windshield replacement is needed and the vehicle is equipped with a front-looking camera sensor for the Driver Assistance Systems, the windshield must be installed according to GM specifications for these systems to work properly. If it is not, there may be unexpected behavior and/or messages from these systems.

#### Acoustic Windshield

The vehicle is equipped with an acoustic windshield. If the windshield needs to be replaced, be sure to get an acoustic windshield so you will continue to have the benefits an acoustic windshield can provide.

### Gas Strut(s)

Your vehicle may be equipped with gas strut(s) to provide assistance in lifting and holding open the hood/trunk/liftgate system in full open position.

#### Warning

If the gas struts that hold open the hood, trunk, and/or liftgate fail, you or others could be seriously injured. Take the vehicle to your dealer for service immediately. Visually inspect the gas struts for signs of wear, cracks, or other damage periodically. Check to make sure the hood/trunk/liftgate is held open with enough force. If struts are failing to hold the hood/trunk/liftgate, do not operate. Have the vehicle serviced.

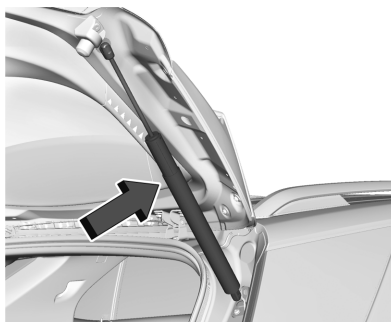
#### Caution

Do not apply tape or hang any objects from gas struts. Also do not push down or pull on gas struts. This may cause damage to the vehicle.

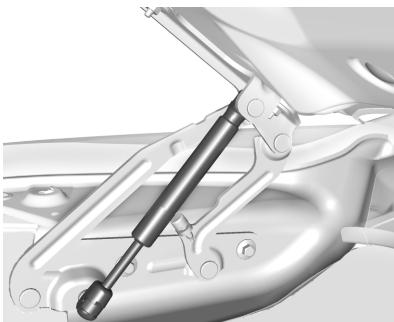
See *Maintenance Schedule* ⇨ 291.



Hood



Liftgate



Trunk

## Headlamp Aiming

### Front Headlamp Aiming

Headlamp aim has been preset and should need no further adjustment.

If the vehicle is damaged in a crash, the headlamp aim may be affected. If adjustment to the headlamps is necessary, see your dealer.

## Bulb Replacement

For the proper type of replacement bulbs, or any bulb changing procedure not listed in this section, contact your dealer.

### Caution

Do not replace incandescent bulbs with aftermarket LED replacement bulbs. This can cause damage to the vehicle electrical system.

## LED Lighting

This vehicle has several LED lamps. For replacement of any LED lighting assembly, contact your dealer.

## Front Turn Signal Lamps

### Uplevel

See your dealer for turn signal replacement.

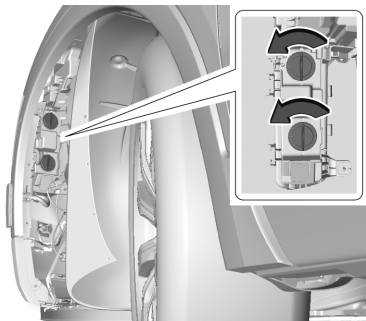
### Base level

To replace one of these lamps:

1. Turn steering wheel in opposite direction as the bulb in need of replacing.
2. Remove fasteners retaining the front wheel liner.

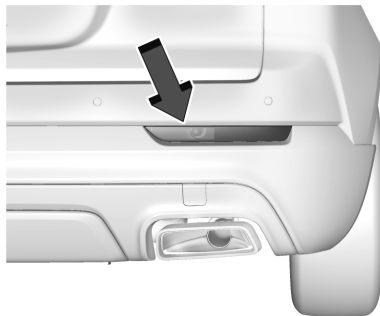
## 250 Vehicle Care

3. Pull back wheel liner to expose back of turn signal lamp.



4. Remove turn signal bulb socket from lamp housing by rotating counterclockwise.
5. Replace the bulb and reverse Steps 1–4 to reinstall.

### Back-Up Lamps

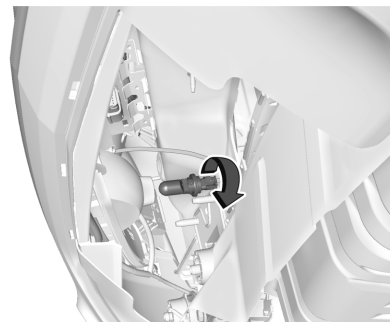


To replace one of these bulbs:



1. Remove the fasteners to remove the trailer hitch cover.

2. Access the lamp through the opening in the underbody.
3. Disconnect the electrical connector from the bulb assembly.



4. Turn the bulb socket counterclockwise and pull the bulb straight out of the socket.
5. Replace the bulb and reverse Steps 1–4 to reinstall.

## Electrical System

### Electrical System Overload

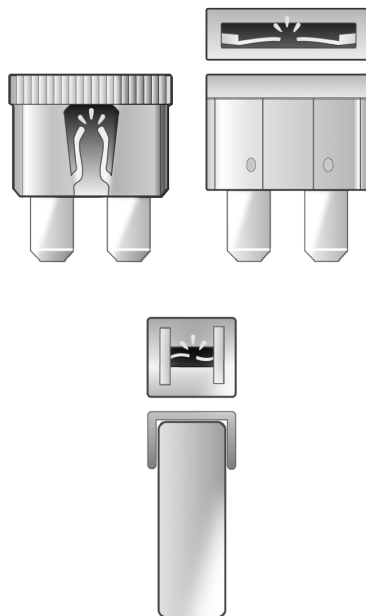
The vehicle has fuses and circuit breakers to protect against an electrical system overload.

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.

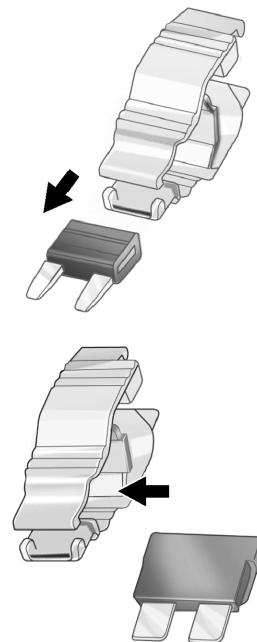
If there is a problem on the road and a fuse needs to be replaced, the same amperage fuse can be borrowed. Choose some feature of the vehicle that is not needed to use and replace it as soon as possible.

To check a fuse, look at the band inside the fuse. If the band is broken or melted, replace the fuse. Be sure to replace a bad fuse with a fuse of the identical size and rating.



### Replacing a Blown Fuse

1. Turn off the vehicle.
2. Locate the fuse puller in the engine compartment fuse block.



3. Use the fuse puller to remove the fuse from the top or side, as shown above.

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4. If the fuse must be replaced immediately, borrow a replacement fuse with the same amperage from the fuse block. Choose a vehicle feature that is not needed to safely operate the vehicle. Repeat Steps 2-3.
5. Insert the replacement fuse into the empty slot of the blown fuse.

At the next opportunity, see your dealer to replace the blown fuse.

### Headlamp Wiring

An electrical overload may cause the lamps to go on and off, or in some cases to remain off. Have the headlamp wiring checked right away if the lamps go on and off or remain off.

### Windshield Wipers

If the wiper motor overheats due to heavy snow or ice, the windshield wipers will stop until the motor cools and will then restart.

Although the circuit is protected from electrical overload, overload due to heavy snow or ice may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using the windshield wipers.

If the overload is caused by an electrical problem and not snow or ice, be sure to get it fixed.

### Fuses and Circuit Breakers

The wiring circuits in the vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of damage caused by electrical problems.

#### Danger

Fuses and circuit breakers are marked with their ampere rating. Do not exceed the specified amperage rating when replacing fuses and circuit breakers. Use of an oversized fuse or circuit breaker can result in a vehicle fire. You and others could be seriously injured or killed.



#### Warning

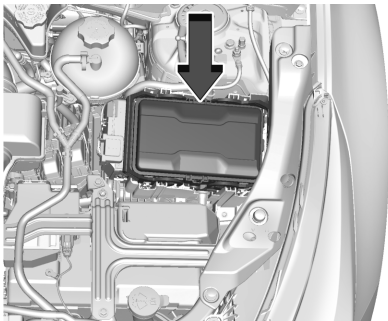
Installation or use of fuses that do not meet GM's original fuse specifications is dangerous. The fuses could fail, and result in a fire. You or others could be injured or killed, and the vehicle could be damaged.

See *Accessories and Modifications* ⇨ 232 and *General Information* ⇨ 232.

To check or replace a blown fuse, see *Electrical System Overload* ⇨ 250.

### Engine Compartment Fuse Block

The underhood fuse block is in the engine compartment, on the driver side of the vehicle.



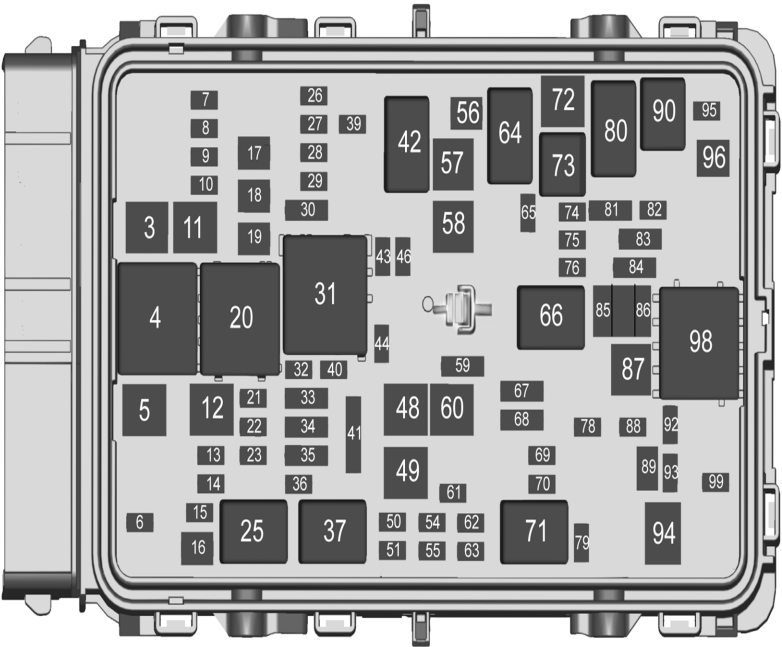
**Caution**

Do not pull the engine compartment fuse block lever, since it is intended only for service purposes. If pulled, vehicle malfunction may occur.

**Caution**

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.

To remove the fuse block cover, press the clips on the cover and lift it straight up.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

**Fuses**

3

**Usage**

EBCM – Electronic Brake Control Module

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Fuses	Usage	Fuses	Usage	Fuses	Usage
5	–	17	PASS/PWR/SEAT – Passenger Power Seat	27	Miscellaneous 1 – Inside Rear View Mirror – Shifter Interface Board Module Run/Crank – Central Gateway Module Run/Crank – Heating Ventilation and Air Conditioning Control Module Run/Crank Ignition 3 – Forward Collision Alert Display
6	–	–	–	28	Rear Wipers
7	TRLR ST/TRN LT – Spare	18	L/GATE MTR/Spare – Liftgate Motor/Spare	29	–
8	MSM – Memory Seat Module – Driver and Passenger	–	–	30	Miscellaneous 2 – Fuel Tank Zone Module Run/Crank – Direct Current to Direct Current Transformer Run/Crank – Electronic Brake Control Module Run/Crank – Instrument Panel Cluster Run/Crank
–	–	19	DRVR/PWR/SEAT – Driver Power Seat/Memory Seat Module/Driver Seat Massage Control	32	RDCM 2/Spare – Rear Drive Control Module 2/ Spare
9	–	21	Sunroof – Power Sunroof	–	–
10	SADS – Semi-active Damping System/Spare	22	–		
11	DC DC BAT 2 – Direct Current to Direct Current Converter 2	23	–		
12	REAR DEFOGGER – Rear Window Defogger	26	TCM IGN – Transmission Control Module Ignition		
13	OSRVM DEFOG – Outside Rear View Mirrors Defogger				
14	–				
15	PEPS – Passive Entry Passive Start Module				
16	FRONT WIPERS				

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Fuses	Usage	Fuses	Usage	Fuses	Usage
33	FRT 2/HTD/ST/Spare – Front Heated Seat Power 2/Spare –	44	FRT 1/HTD/VENT ST/RR HTD ST/Spare – Front Heated Seat Power 1/ Front Vented Seats/Rear Heated Seats/Spare –	59	HDLP HI BEAM LT/RT – High Beam Headlamps
34	HFCR MDL/LGM/WNDW SW – Handsfree Closure Release Module/Liftgate Module/Driver and Passenger Window Switches	46	ECM IGN – Engine Control Module Ignition	60	–
35	–	48	RDCM 1/Spare – Rear Drive Control Module 1/ Spare	61	Spare
36	FTZM – Fuel Tank Zone Module	49	HVAC BLOWR MTR – Heating Ventilation and Air Conditioning Control Blower Motor	62	Spare
39	FRT ST MASGE – Driver Seat Massage/Passenger Seat Massage –	50	Spare	63	Spare
40	–	51	Spare	65	A/C CONTROL – Air Conditioning Compressor Clutch
41	–	54	Spare	67	Spare
43	HTD/STR/WHL/Spare – Heated Steering Wheel/ Spare –	55	Spare	68	Spare
		56	STARTER MOTOR	69	–
		57	–	70	TRAILER PARK LAMPS/ Spare
		58	–	72	STARTER PINION
				74	–
				75	ECM PWRTRN IGN 2 – Engine Control Module Power Train Ignition 2
				76	ECM PWRTRN IGN 1 – Engine Control Module Power Train Ignition 1

## 256 Vehicle Care

### Fuses Usage

78	Horn
79	WASHER PUMPS – Front and Rear Washer Pumps
81	ECM – Engine Control Module/Spare
82	–
83	IGNITION COILS
84	Miscellaneous 3 – Canister Purge Solenoid/Step Cam Exhaust Solenoid Cylinder 2 and 3/Step Cam Intake Cylinder Solenoids/Turbo Bypass Solenoid/Oxygen Sensor (Pre & Post)/Step Cam Exhaust Solenoids/O2 Heater/Oxygen Heated Sensor/Mass Airflow/Inlet Air Temperature/Throttle Inlet Absolute Pressure/Humidity Sensor/Coolant Flow Control Valve
85	Shunt
86	–
87	–

### Fuses Usage

88	AEROSHUTTER/Spare
89	–
92	TRLR ST/TRN RT – Spare
93	AHL/CVS – Canister Vent Solenoid
95	–
96	–
99	–

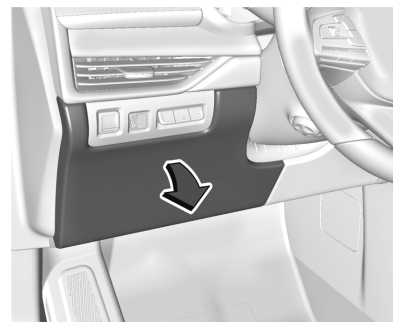
### Relays Usage

20	REAR DEFOGGER – Rear Window Defogger/Outside Rear View Mirrors Defogger
25	Front Wiper Control
31	Run/Crank
37	Front Wiper Speed
42	–
64	Starter Motor
66	Powertrain
71	TRAILER PARK LAMPS/ Spare

### Relays Usage

73	A/C CONTROL – Air Conditioning Controls
80	Starter Pinion
90	–
94	–
98	–

## Instrument Panel Fuse Block

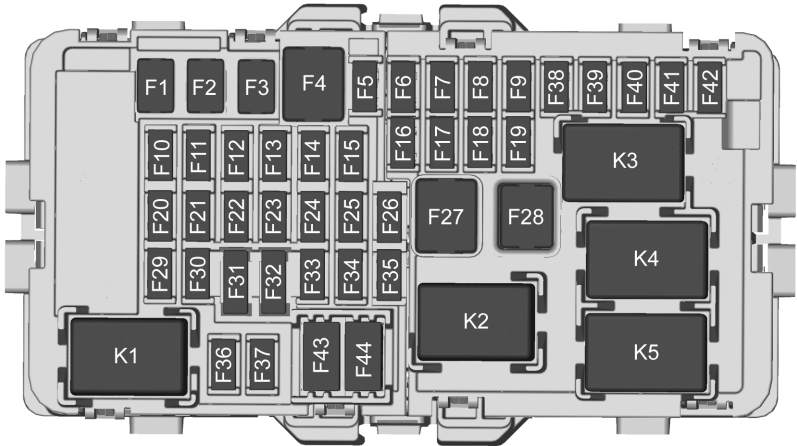
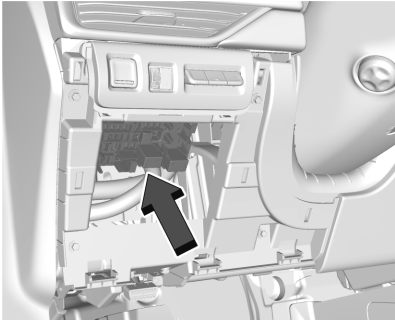


The instrument panel fuse block is on the driver side of the instrument panel, between the steering wheel and the door. To access the fuses, remove the panel, starting at the top. Once clips are disengaged, the tabs

along the bottom of the door can be disengaged from the instrument panel to remove the door.

To reinstall the door, place the bottom tabs into the slots, and rotate the door into position, engaging the clips.

The vehicle may not be equipped with all of the fuses, relays, and features shown.



Fuses	Usage
F1	WNDW LT – Left Power Window
F2	WNDW RT – Right Power Window
F3	–
F4	DC-DC BAT 2/1 – Direct Current to Direct Current Converter 2

Fuses	Usage
F5	APO CARGO – Auxiliary Power Outlet – Cargo
F6	HTD SEAT BATT 1 – Heated Seat Battery 1
F7	HTD SEAT RR 2 – Not Used
–	–

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Fuses	Usage	Fuses	Usage	Fuses	Usage
F8	BCM 3 – Body Control Module 3 – LED Headlamp Low Beam Right Control Signal, Right Front Turn Lamp Control Signal, Left Front Side Marker and Auxiliary Park, Left Rear Tail/Side Marker Control Signal, Left Daytime Running Lamps Control Signal	F11	–	F21	BCM 4 – Body Control Module 4 – LED Headlamp Low Beam Left Control Signal, Right Front Side Marker and Auxiliary Park, Right Rear Tail/Side Marker Control Signal, Left Rear Stop Lamp Control Signal, Left Rear Stop/Turn Lamp Control Signal, Right DRL Control Signal
F9	ELEC PRK/BRK – Electric Park Brake	F12	–	F22	BCM 7 – Body Control Module 7 – Right Rear Stop Lamp Control Signal, Right Rear Stop/Turn Lamp Control Signal, Left Front Turn Lamp Control Signal, Right Rear Turn Control Signal
F10	BCM 2 SS – Body Control Module 2 (Stop/Start) – Interior Lamps Control Signal, Door Handle Puddle Lamp (LED), Left Cornering Lamp, Right Cornering Lamp, Interior Lamps Control Signal, Backup Lamp Supply Voltage, License Plate Lamp Control Signal, Rear Closure Cargo Lamp Control Signal, Center High Mounted Stop Lamp LED Lamp Control Signal	F13	–	F23	–
		F14	–	F24	Airbag
		F15	TCM SS – Transmission Control Module (Stop/Start)	F25	DLC – Data Link Connector
		F16	AMP – Amplifier	F26	–
		F17	–	F27	–
		F18	VPM – Video Processing Module	F28	–
			–		
		F19	PWR STR COL – Power Steering Column		
			–		
		F20	BCM 6 – Body Control Module 6 – LED Backlight Control, Interior Lighting Inadvertent Load Control Signal, Fuel Door Lock Control Signal, LED Backlight Control Signal		

<b>Fuses</b>	<b>Usage</b>	<b>Fuses</b>	<b>Usage</b>	<b>Fuses</b>	<b>Usage</b>
F29	BCM 8 – Body Control Module 8 – Internal Driver/Fuel Door Unlock Relay Control Signal, Internal Non-Driver Door Lock Relay Control Signal, Internal All Door Unlock Relay Control Signal	F38	OnStar	F41	BCM 1 SS – Body Control Module 1 (Stop/Start) – LED Indicator Lighting Control, Accessory LED Control, Run-Start LED Control, Ambient Lighting LED Control 2, Liftgate Latch Motor Control Signal, Rear Wiper Control Signal, High Beam Lamp Control (Direct Drive), Rear Fog LED Lamp Control Signal, Windshield Washer Pump Motor Control Signal, Run/Crank Relay Control Signal, ECM/TCM ACC Wakeup Control Signal, Left Rear Turn Control Signal, Rear Wiper Wash Pump Control Signal, Brake Pedal Apply Signal
F30	OVERHD CNSL – Overhead Console	F39	Displays – Shifter Interface Board/Center Stack/Head Up Display/Instrument Panel Cluster/HVAC Display		
F31	STR/WHL/CNTRL – Steering Wheel Controls		–	F42	RDO – Radio
F32	–	F40	OBS DET – Long Range Radar Sensor/Ultrasonic Park Assist Module/Camera Module/External Object Calculating Module/Side Blind Zone Alert Modules/ Front Camera Module	F43	APO CNSL – Console Auxiliary Power Outlet (Circuit Breaker)
F33	HVAC – Heating Ventilation and Air Conditioning Control Module				–
F34	CGM – Central Gateway Module				
F35	HEATED SW – Heated Seat Switch/Hazard Switch				
F36	Wireless Charger Module/USB Charge Port				
F37	APO FRT – Front Auxiliary Power Outlet/Cigarette Lighter				

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Fuses	Usage
F44	Spare –
Relay	Usage
K1	–
K2	RAP/ACCY – Retained Accessory Power
K3	Content Theft – Not Used
K4	–
K5	–

## Wheels and Tires

### Tires

Every new GM vehicle has high-quality tires made by a leading tire manufacturer. See the warranty manual for information regarding the tire warranty and where to get service. For additional information refer to the tire manufacturer.

### Warning

- Poorly maintained and improperly used tires are dangerous.
- Overloading the tires can cause overheating as a result of too much flexing. There could be a blowout and a serious crash. See *Vehicle Load Limits* ⇨ 179.
- Underinflated tires pose the same danger as overloaded tires. The resulting crash could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when the tires are cold.
- Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when hitting a pothole. Keep tires at the recommended pressure.
- Worn or old tires can cause a crash. If the tread is badly worn, replace them.

(Continued)

### Warning (Continued)

- Replace any tires that have been damaged by impacts with potholes, curbs, etc.
- Improperly repaired tires can cause a crash. Only your dealer or an authorized tire service center should repair, replace, dismount, and mount the tires.
- Do not spin the tires in excess of 56 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tires to explode.

See *Tire Pressure for High-Speed Operation* ⇨ 262 for inflation pressure adjustment for high-speed driving.

### 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* ⇨ 269.

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 235/55R18 or 245/45R20 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. It is recommended that winter tires be installed 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* ⇨ 260.

### Caution

High performance summer tires have rubber compounds that lose flexibility and may develop surface cracks in the tread area at temperatures below -7 °C (20 °F). Always store high performance summer tires indoors and at temperatures above -7 °C (20 °F) when not in use. If the tires have been subjected to -7 °C (20 °F) or less, let them warm up in a heated space to at least 5 °C (40 °F) for 24 hours or more before being installed or driving a vehicle on which they are installed. Do not apply heat or blow heated air directly on the tires. Always inspect tires before use. See *Tire Inspection* ⇨ 267.

## Tire Pressure

Tires need the correct amount of air pressure to operate effectively.

### Warning

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 for internal combustion engine vehicles
- Reduced range for electric vehicles

Overinflated tires, or tires that have too much air, can result in:

- Unusual wear
- Poor handling
- Rough ride

(Continued)

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### Warning (Continued)

- Needleless 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* ⇨ 179.

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 pressure of the tires once a month or more. Do not forget the spare, if the vehicle has one. The compact spare cold tire pressure should be at 420 kPa (60 psi). See *Compact Spare Tire* ⇨ 277.

### 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.

Put the valve caps back on the valve stems to keep out dirt and moisture. Use only valve caps designed for the vehicle by GM. TPMS sensors could be damaged and would not be covered by the vehicle warranty.

### Tire Pressure for High-Speed Operation



#### Warning

Driving at high speeds, 160 km/h (100 mph) or higher, puts additional strain on tires. Sustained high-speed driving causes excessive heat buildup and can cause sudden tire failure. This could cause a crash, and you or others could be killed. Some high-speed rated tires require inflation pressure adjustment for high-speed operation. When speed limits and road conditions allow the vehicle to be driven at high speeds, make sure the tires are rated for high-speed operation, are in excellent condition, and are set to the correct cold tire inflation pressure for the vehicle load.

Vehicles with tire sizes listed in the High Speed Operation Inflation Pressures table require inflation pressure adjustment when driving the vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold tire inflation pressure to the corresponding value in the table for the tire size on the vehicle.

High Speed Operation Inflation Pressures	
Tire Size	Cold Inflation Pressure kPa (psi)
235/55R18	260 kPa (38 psi)
245/45R20	260 kPa (38 psi)

Return the tires to the recommended cold tire inflation pressure when high-speed driving has ended. See *Vehicle Load Limits* ⇨ 179 and *Tire Pressure* ⇨ 261.

### Tire Pressure Monitor System

Caution
Modifications made to the Tire Pressure Monitor System (TPMS) by anyone other than an authorized service facility may void authorization to use the 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 vehicle's 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

## 264 Vehicle Care

failure. Under-inflation also reduces energy 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* ⇨ 264 for additional information.

### Tire Pressure Monitor Operation

This vehicle may have a Tire Pressure Monitor System (TPMS). The TPMS is designed to warn the driver when a low tire pressure condition exists. TPMS sensors are mounted onto each tire and wheel assembly, excluding the spare tire and wheel assembly. The TPMS sensors monitor the air pressure in the tires and transmit the tire pressure readings to a receiver located in the vehicle.



When a low tire pressure condition is detected, the TPMS illuminates the low tire pressure warning light on the instrument cluster. If the warning light comes on, stop

as soon as possible and inflate the tires to the recommended pressure shown on the Tire and Loading Information label. See *Vehicle Load Limits* ⇨ 179.

A message to check the pressure in a specific tire displays in the Driver Information Center (DIC). The low tire pressure warning light and the DIC warning message come on at each ignition cycle until the tires are inflated to the correct inflation pressure. Using the DIC, tire pressure levels can be viewed. For additional information and details about the DIC operation and displays see *Driver Information Center (DIC)* ⇨ 106.

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

A Tire and Loading Information label, attached to your vehicle, shows the size of the original equipment tires and the correct inflation pressure for the tires when they are cold. See *Vehicle Load Limits* ⇨ 179, for an example of the Tire and Loading Information label and its location. Also see *Tire Pressure* ⇨ 261.

The TPMS can warn about a low tire pressure condition but it does not replace normal tire maintenance. See *Tire Inspection* ⇨ 267, *Tire Rotation* ⇨ 267 and *Tires* ⇨ 260.

### Caution

Tire sealant materials are not all the same. A non-approved tire sealant could damage the TPMS sensors. TPMS sensor damage caused by using an incorrect tire sealant is not covered by the vehicle warranty. Always use only the GM approved tire sealant available through your dealer or included in the vehicle.

### TPMS Malfunction Light and Message

The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. When the system detects a malfunction, the low tire pressure warning light flashes for about one minute and then stays on for the remainder of the ignition cycle. A DIC warning message also displays. The malfunction light and DIC warning message come on at each ignition cycle until the problem is corrected. Some of the conditions that can cause these to come on are:

- One of the road tires has been replaced with the spare tire. The spare tire does not have a TPMS sensor. The malfunction light and DIC message should go off after the road tire is replaced and the sensor matching process is performed successfully. See "TPMS Sensor Matching Process" later in this section.
- The TPMS sensor matching process was not done or not completed successfully after rotating the tires. The malfunction light and the DIC message should go off after successfully completing the sensor matching process. See "TPMS Sensor Matching Process" later in this section.
- One or more TPMS sensors are missing or damaged. The malfunction light and the DIC message should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.
- Replacement tires or wheels do not match the original equipment tires or wheels. Tires and wheels other than those recommended could prevent the TPMS from functioning properly. See *Buying New Tires* ⇨ 269.

- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

If the TPMS is not functioning properly it cannot detect or signal a low tire pressure condition. See your dealer for service if the TPMS malfunction light and DIC message come on and stay on.

### Tire Fill Alert (If Equipped)

This feature provides visual and audible alerts outside the vehicle to help when inflating an underinflated tire to the recommended cold tire pressure.

When the low tire pressure warning light comes on:

1. Park the vehicle in a safe, level place.
2. Set the parking brake firmly.
3. Place the vehicle in P (Park).
4. Add air to the tire that is underinflated. The turn signal lamp will flash.

When the recommended pressure is reached, the horn sounds once and the turn signal lamp will stop flashing and briefly turn solid.

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Repeat these steps for all underinflated tires that have illuminated the low tire pressure warning light.

### Warning

Overinflating a tire could cause the tire to rupture and you or others could be injured. Do not exceed the maximum pressure listed on the tire sidewall.

If the tire is overinflated by more than 35 kPa (5 psi), the horn will sound multiple times and the turn signal lamp will continue to flash for several seconds after filling stops. To release and correct the pressure, while the turn signal lamp is still flashing, briefly press the center of the valve stem. When the recommended pressure is reached, the horn sounds once.

If the turn signal lamp does not flash within 15 seconds after starting to inflate the tire, the tire fill alert has not been activated or is not working.

If the hazard warning flashers are on, the tire fill alert visual feedback will not work properly.

The TPMS will not activate the tire fill alert properly under the following conditions:

- There is interference from an external device or transmitter.
- The air pressure from the inflation device is not sufficient to inflate the tire.
- There is a malfunction in the TPMS.
- There is a malfunction in the horn or turn signal lamps.
- The identification code of the TPMS sensor is not registered to the system.
- The battery of the TPMS sensor is low.

If the tire fill alert does not operate due to TPMS interference, move the vehicle about 1 m (3 ft) back or forward and try again. If the tire fill alert feature is not working, use a tire pressure gauge.

### TPMS Sensor Matching Process

Each TPMS sensor has a unique identification code. The identification code needs to be matched to a new tire/wheel position after rotating the vehicle's tires or replacing one or more of the TPMS sensors. The TPMS sensor matching process should also be performed after replacing a spare tire with a road tire containing the TPMS sensor. The malfunction light and the DIC message should go off at the next ignition cycle. The sensors are matched to the tire/wheel positions, using a TPMS relearn tool,

in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear. See your dealer for service or to purchase a relearn tool.

There are two minutes to match the first tire/wheel position, and five minutes overall to match all four tire/wheel positions. If it takes longer, the matching process stops and must be restarted.

The TPMS sensor matching process is:

1. Set the parking brake.
2. Place the vehicle in Service Mode. See *Ignition Positions* ⇨ 183.
3. Make sure the Tire Pressure info display option is turned on. The info displays on the DIC can be turned on and off through the Options menu. See *Driver Information Center (DIC)* ⇨ 106.
4. Use the five-way DIC control on the right side of the steering wheel to scroll to the Tire Pressure screen under the DIC info page. See *Driver Information Center (DIC)* ⇨ 106.
5. Press and hold the thumbwheel in the center of the five-way DIC control.

The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARNING ACTIVE message displays on the DIC screen.

6. Start with the driver side front tire.
7. Place the relearn tool against the tire sidewall, near the valve stem. Then press the button to activate the TPMS sensor. A horn chirp confirms that the sensor identification code has been matched to this tire and wheel position.
8. Proceed to the passenger side front tire, and repeat Step 7.
9. Proceed to the passenger side rear tire, and repeat Step 7.
10. Proceed to the driver side rear tire, and repeat Step 7. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tire, and the TPMS sensor matching process is no longer active. The TIRE LEARNING ACTIVE message on the DIC display screen goes off.
11. Turn the vehicle off.
12. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.

## Tire Inspection

We recommend that the tires, including the spare tire, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tire if:

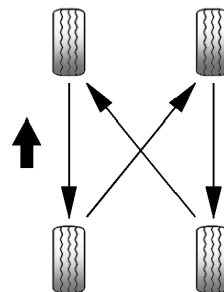
- The indicators at three or more places around the tire can be seen.
- There is cord or fabric showing through the tire's rubber.
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.
- The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

## Tire Rotation

Tires should be rotated according to the interval specified in the Maintenance Schedule. See *Maintenance Schedule* ⇨ 291.

Tires are rotated to achieve a more 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* ⇨ 268 and *Wheel Replacement* ⇨ 270.



Use this rotation pattern when rotating the tires.

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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* ⇨ 261 and *Vehicle Load Limits* ⇨ 179.

Reset the Tire Pressure Monitor System. See *Tire Pressure Monitor Operation* ⇨ 264.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications* ⇨ 298, and “Removing the Flat Tire and Installing the Spare Tire” under *Tire Changing* ⇨ 273.

### Warning

Rust or dirt on a wheel, or on the parts to which it is fastened, can cause wheel nuts to become loose over time. The wheel could come off and cause a crash. When changing a wheel, remove any rust or dirt from

(Continued)

### Warning (Continued)

places where the wheel attaches to the vehicle. In an emergency, a cloth or paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

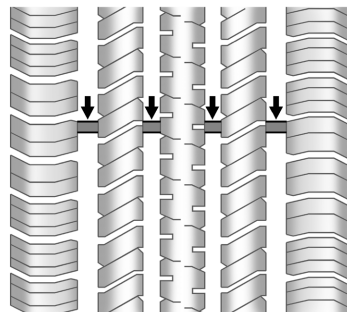
Lightly coat the inner diameter of the wheel hub opening with wheel bearing grease after a wheel change or tire rotation to prevent corrosion or rust buildup.

### Warning

Do not apply grease to the wheel mounting surface, wheel conical seats, or the wheel nuts or bolts. Grease applied to these areas could cause a wheel to become loose or come off, resulting in a crash.

## 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* ⇨ 267 and *Tire Rotation* ⇨ 267.

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. To identify the age of a tire, use the tire manufacture date, which is the last four digits of the DOT Tire Identification

Number (TIN) molded into one side of the tire sidewall. The last four digits of the TIN indicate the tire manufactured date. The first two digits represent the week and the last two digits, the year. For example, the third week of the year 2020 would have a 4-digit DOT date of 0320. Week 01 is the first full week (Sunday through Saturday) of each year.

### 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.

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. However, if it is necessary to replace only one axle set of worn tires, place the new tires on the rear axle. See *Tire Rotation* ⇨ 267.

#### 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 (other than those originally installed on the vehicle), brands, tread patterns, or types may cause loss of vehicle control, resulting in a crash or other vehicle damage. Use the correct size, brand, and type of tire on all wheels.

## 270 Vehicle Care

### Warning

Using bias-ply tires on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving. A tire and/or wheel could fail suddenly and cause a crash. Use only radial-ply tires with the wheels on the vehicle.

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y and ZR speed rated tires. Never exceed the winter tires' maximum speed capability when using winter tires with a lower speed rating.

If the vehicle tires must be replaced with a tire that does not have a TPC Spec number, make sure they are the same size, load range, speed rating, and construction (radial) as the original tires.

The Tire and Loading Information label indicates the original equipment tires on the vehicle. See *Vehicle Load Limits* ⇨ 179.

### 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* ⇨ 269 and *Accessories and Modifications* ⇨ 232.

### 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, resulting in a crash. Always use the correct wheel, wheel bolts, and wheel nuts for replacement.

 **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.  
(Continued)

**Warning (Continued)**

It could fail suddenly and cause a crash. When replacing wheels, use a new GM original equipment wheel.

**Caution**

The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.

**Tire Chains**

 **Warning**

If the vehicle has 235/60R18 or 245/45R20 size tires, 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  
(Continued)

**Warning (Continued)**

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.

**Caution**

If the vehicle is equipped with a tire size other than 235/60R18 or 245/45R20, use tire chains only where legal and only when necessary. Use low profile chains that add no more than 12 mm thickness to the tire tread and inner sidewall. Use chains that are the proper size for the tires. Install them on the tires of the front axle. Do not use chains on the tires of the rear axle. Tighten them as tightly as possible with the ends securely fastened. Drive slowly and follow the chain manufacturer's instructions. If the chains contact the vehicle, stop and  
(Continued)

## 272 Vehicle Care

### Caution (Continued)

retighten them. If the contact continues, slow down until it stops. Driving too fast or spinning the wheels with chains on will damage the vehicle.

### 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* ⇨ 260. If air goes out of a tire, it is much more likely to leak out slowly. But if there is ever a blowout, here are a few tips about what to expect and what to do:

If a front tire fails, the flat tire creates a drag that pulls the vehicle toward that side. Take your foot off the accelerator pedal and grip the steering wheel firmly. Steer to maintain lane position, and then gently brake to a stop, well off the road, if possible.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction as used in a skid. Stop pressing the accelerator pedal and steer to straighten the vehicle. It may be very bumpy and noisy. Gently brake to a stop, well off the road, if possible.

### Warning

Driving on a flat tire will cause permanent damage to the tire. Re-inflating a tire after it has been driven on while severely underinflated or flat may cause a blowout and a serious crash. Never attempt to re-inflate a tire that has been driven on while severely underinflated or flat. Have your dealer or an authorized tire service center repair or replace the flat tire as soon as possible.

### Warning

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for 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* ⇨ 119.

If your vehicle is loaded at or near maximum cargo capacity, it may be difficult to fit the jack under the vehicle due to the environment (shoulder slope, road debris, etc.). Removal of some weight may improve the ability to fit the jack under the vehicle at the correct jacking location.

### Warning

Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall causing injury or death. Find a level place to change the tire. To help prevent the vehicle from moving:

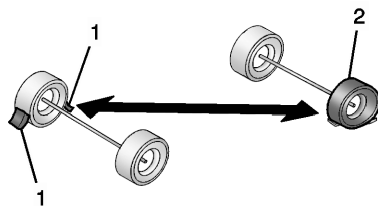
1. Set the parking brake firmly.
2. Put the vehicle in P (Park).
3. Turn the vehicle off and do not restart the vehicle while it is raised.
4. Do not allow passengers to remain in the vehicle.

(Continued)

### Warning (Continued)

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.

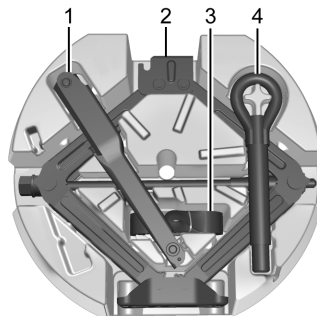


1. Wheel Block (If Equipped)
2. Flat Tire

The following information explains how to repair or change a tire.

## Tire Changing

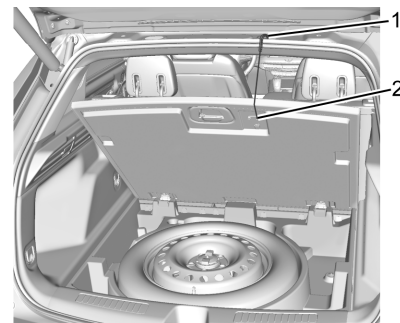
### Removing the Spare Tire and Tools



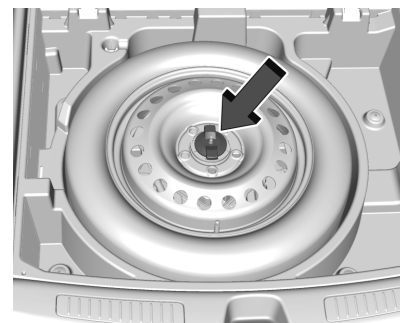
1. Wrench
2. Jack
3. Strap
4. Tow Hook (If Equipped)

To access the spare tire and tools:

1. Open the liftgate. See *Liftgate* ⇨ 17.
2. Remove the cargo cover, if equipped.
3. Lift the load floor.



Insert the hook (2) into the opening on the liftgate (1) to hold it open.



4. Turn the retainer nut counterclockwise and remove the spare tire.

## 274 Vehicle Care

Place the spare tire next to the tire being changed.

5. The jack and tools are stored below the spare tire.

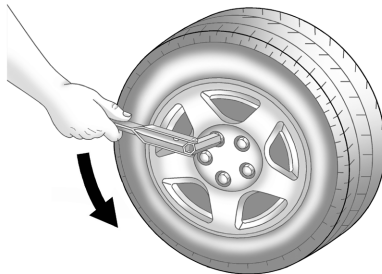
Remove them from their container and place them near the tire being changed.

### Removing the Flat Tire and Installing the Spare Tire

1. Do a safety check before proceeding. See *If a Tire Goes Flat* ⇨ 272.
2. For vehicles equipped with a wheel cover or center cap, pull the cover or center cap away from the wheel to remove it. Store the wheel cover in the cargo area until the flat tire is repaired or replaced.

If the vehicle has a center cap with wheel nut caps, the wheel nut caps are designed to stay with the center cap after they are loosened.

Remove the entire center cap if the wheel has a smooth center cap. Place the chisel end of the wheel wrench in the slot on the wheel, and gently pry it off.

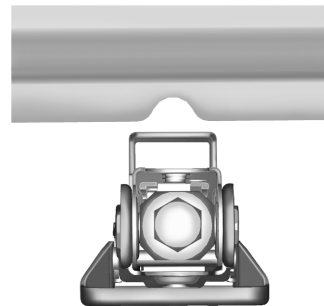


3. Turn the wheel wrench counterclockwise to loosen all the wheel nuts, but do not remove them yet.

#### Caution

Make sure that the jack lift head is in the correct position or you may damage your vehicle. The repairs would not be covered by your warranty.

4. Position the jack lift head at the jack location nearest the flat tire.



Locate the notch on the sheet metal weld flange. Place the center of the jack lift head on the center of the sheet metal notch.

The jack must not be used in any other position.

#### Warning

Getting under a vehicle when it is lifted on a jack is dangerous. If the vehicle slips off the jack, you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.

**⚠ Warning**

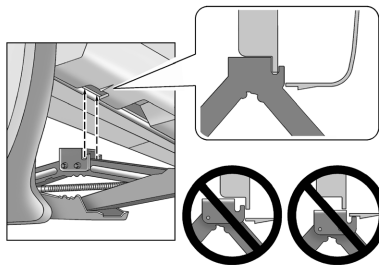
Raising the vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.

**⚠ Warning**

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

**Caution**

Using a jack to raise the vehicle without positioning it correctly could damage your vehicle. When raising your vehicle on a jack, be sure to position it correctly under the frame and avoid contact with the plastic molding.

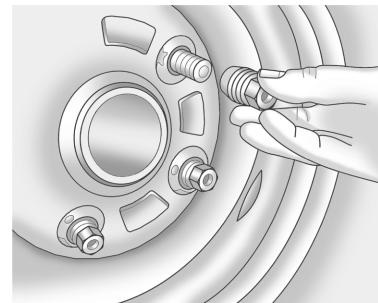


5. Turn the wheel wrench clockwise to raise the jack until the slot in the jack lift head fits into the metal flange located behind the cut out on the plastic molding.

Do not raise the vehicle yet.

6. Put the compact spare tire near you.

7. Raise the vehicle by turning the jack handle clockwise. Raise the vehicle far enough off the ground so there is enough room for the road tire to clear the ground.



8. Remove all of the wheel nuts.  
9. Remove the flat tire.

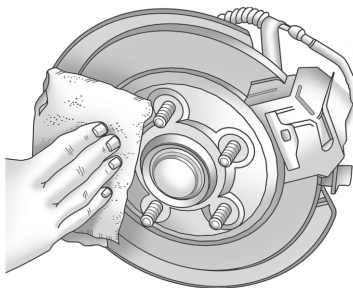
**⚠ Warning**

Rust or dirt on a wheel, or on the parts to which it is fastened, can cause wheel nuts to become loose over time. The wheel could come off and cause a crash. When changing a  
(Continued)

## 276 Vehicle Care

### Warning (Continued)

wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.



10. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.
11. Place the compact spare tire on the wheel-mounting surface.

### Warning

Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.

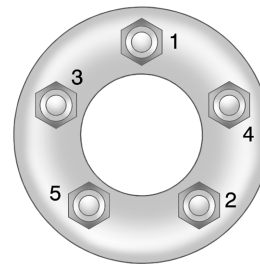
12. Reinstall the wheel nuts. Tighten each nut by hand until the wheel is held against the hub.
13. Lower the vehicle by turning the jack handle counterclockwise.

### Warning

Wheel nuts that are improperly or incorrectly tightened can cause the wheels to become loose or come off. The wheel nuts should be tightened with a torque wrench to the proper torque specification after replacing. Follow the torque specification supplied by the aftermarket manufacturer when using accessory locking wheel nuts. See *Capacities and Specifications* ⇨ 298 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* ⇨ 298 for the wheel nut torque specification.



14. Tighten the wheel nuts firmly in a crisscross sequence, as shown.
15. Lower the jack all the way and remove the jack from under the vehicle.
16. Tighten the wheel nuts firmly with the wheel wrench.

When reinstalling the wheel cover or center cap on the full-size tire, tighten all five plastic caps hand snug with the aid of the wheel wrench and tighten them with the wheel wrench an additional one-quarter of a turn.

### 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

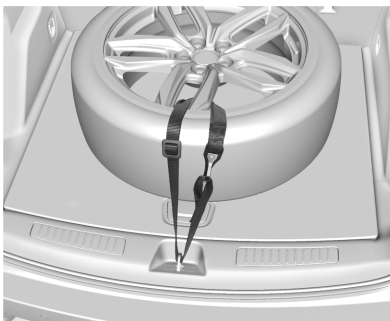
#### ⚠ Warning

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.

To store the flat or spare tire and tools:

1. Open the liftgate. See *Liftgate* ⇨ 17.
2. Replace the jack and tools in their original storage location.
3. Lower the load floor.

4. Place the tire, lying flat, in the rear storage compartment.
5. Place the loop end of the strap through the liftgate striker.



6. Route the strap through the wheel as shown.
7. Attach the hook to the loop end of the strap.
8. Tighten the strap.
9. Replace the cargo cover, if equipped.
10. Close the liftgate and make sure it is fully latched.

The compact spare is for temporary use only. Replace the compact spare tire with a full-size tire as soon as you can.

### Compact Spare Tire

#### ⚠ Warning

Driving with more than one compact spare tire at a time could result in loss of braking and handling. This could lead to a crash and you or others could be injured. Use only one compact spare tire at a time.

If this vehicle has a compact spare tire, it was fully inflated when new; however, it can lose air over time. Check the inflation pressure regularly. It should be 420 kPa (60 psi).

Stop as soon as possible and check that the spare tire is correctly inflated after being installed on the vehicle. The compact spare tire is designed for temporary use only. The vehicle will perform differently with the spare tire installed and it is recommended that the vehicle speed be limited to 80 km/h (50 mph). To conserve the tread of the spare tire, have the standard tire repaired or replaced as soon as convenient and return the spare tire to the storage area.

## 278 Vehicle Care

When using a compact spare tire, the AWD (if equipped), 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* ⇨ 245.

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

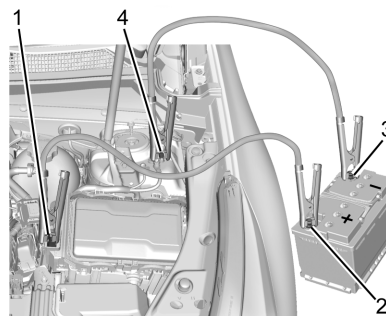
Ignoring these steps could result in costly damage to the vehicle that would not be covered by the vehicle warranty. Trying  
(Continued)

### Caution (Continued)

to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle.

### 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.



### Connection Points and Sequence

1. Discharged Battery Positive (+) Terminal
2. Good Battery Positive (+) Terminal
3. Good Battery Negative (-) Terminal
4. Discharged Battery Negative (-) Terminal

The discharged battery positive (+) terminal and the discharged battery negative (-) terminal are on the driver side of the vehicle.

The good battery negative (-) terminal and good battery positive (+) terminal are on the battery of the vehicle providing the jump start.

The discharged battery positive (+) terminal is under a cover. Remove 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 transmission in P (Park). See *Shifting Into Park* ⇨ 186.

### Caution

If any accessories are left on or plugged in during the jump starting procedure, they could be damaged. The repairs would not be covered by the vehicle warranty. Whenever possible, turn off or unplug all accessories on either vehicle when jump starting.

4. Turn the ignition 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.

## 280 Vehicle Care

5. Connect one end of the red positive (+) cable to the discharged battery positive (+) terminal.
6. Connect the other end of the red positive (+) cable to the good battery positive (+) terminal.
7. Connect one end of the black negative (-) cable to the good battery negative (-) terminal.
8. Connect the other end of the black negative (-) cable to the discharged battery negative (-) terminal on the driver side shock tower.
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.

### Jumper Cable Removal

Reverse the sequence exactly when removing the jumper cables.

After starting the disabled vehicle and removing the jumper cables, allow it to idle for several minutes.

## Towing the Vehicle

### Transporting a Disabled Vehicle

#### Caution

Incorrectly transporting a disabled vehicle may cause damage to the vehicle. Use proper tire straps to secure the vehicle to the flatbed tow truck. Do not strap or hook to any frame, underbody, or suspension component not specified below. Do not move vehicles with drive axle tires on the ground. Damage is not covered by the vehicle warranty.

#### Caution

The vehicle may be equipped with an electric parking brake and/or an electronic shifter. In the event of a loss of 12-volt battery power, the electric parking brake cannot be released, and the vehicle cannot be shifted to N (Neutral). Tire skates or dollies must be used under the non-rolling tires to prevent damage while loading/unloading the vehicle. Dragging the vehicle will cause damage not covered by the vehicle warranty.

#### Caution

The vehicle may be equipped with a tow eye. Improper use of the tow eye may cause damage to the vehicle and is not covered by the vehicle warranty. If equipped, use the tow eye to load the vehicle onto a flatbed tow truck from a flat road surface, or to move the vehicle a very short distance at a walking pace. The tow eye is not designed for off-road recovery. The vehicle must be in N (Neutral) with the electric parking brake released when using the tow eye.

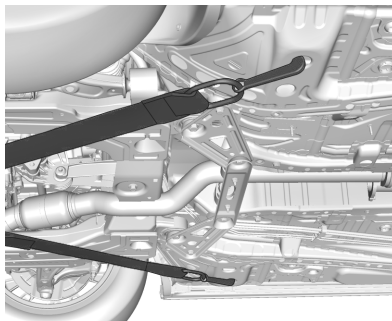
Contact a professional towing service if the disabled vehicle must be transported. GM recommends a flatbed tow truck to transport a disabled vehicle. Use ramps to help reduce approach angles, if necessary.

If equipped, a tow eye may be located near the spare tire or emergency jack. Do not use the tow eye to pull the vehicle from the snow, mud, sand, or ditch. Tow eye threads may have right or left-hand threads. Use caution when installing or removing the tow eye.

The vehicle must be in N (Neutral) and the electric parking brake must be released when loading the vehicle onto a flatbed tow truck.

- If the vehicle is equipped with car wash mode and has 12-volt battery power, refer to “Car Wash Mode” under *Automatic Transmission* ⇨ 188 to place the vehicle in N (Neutral).
- If the 12-volt battery is dead and/or the engine will not start, the vehicle will not move. Try to jump start the vehicle. Refer to *Jump Starting* ⇨ 278 and if the jump start is successful, retry the “Car Wash Mode” procedure.
- If jump starting is unsuccessful, the vehicle will not move. Tire skates or dollies must be used under the non-rolling tires to prevent vehicle damage.

### Front Attachment Points



The vehicle is equipped with specific attachment points to be used by the towing provider. These holes may be used to pull the vehicle from a flat road surface onto the flatbed tow truck.

## 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* ⇨ 295.

#### Washing the Vehicle

To preserve the vehicle's finish, wash it often and out of direct sunlight.

#### Caution

Do not use petroleum-based, acidic, or abrasive cleaning agents as they can damage the vehicle's paint, metal, or plastic parts. If damage occurs, it would not be covered by the vehicle warranty. Approved cleaning products can be obtained from your dealer. Follow all manufacturer directions regarding correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.

## 282 Vehicle Care

### 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.


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.

### Cleaning Underhood Components

### Caution

Do not power wash any component under the hood that has this  symbol.

(Continued)

### Caution (Continued)

This could cause damage that would not be covered by the vehicle warranty.

Solvents or aggressive cleaners may harm underhood components. The usages of these chemicals should be avoided.

Recommend water only.

A pressure washer may be used, but care must be utilized. The following criteria must be followed:

- Water pressure must be kept below 14 000 KPa (2,000 PSI).
- Water temperature must be below 80 °C (180 °F).
- Spray nozzle with a 40 degree wide angle spray pattern or wider must be used.
- Nozzle must be kept at least 30 cm (1 ft) away from all surfaces.

### Finish Care

Application of aftermarket clearcoat sealant/wax materials is not recommended.

If painted surfaces are damaged, see your dealer to have the damage assessed and repaired. Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings,

chemicals from industrial chimneys, etc., can damage the vehicle's finish if they remain on painted surfaces. Wash the vehicle as soon as possible. If necessary, use non-abrasive cleaners that are marked safe for painted surfaces to remove foreign matter.

Occasional hand waxing or mild polishing should be done to remove residue from the paint finish. See your dealer for approved cleaning products.

Do not apply waxes or polishes to uncoated plastic, vinyl, rubber, decals, simulated wood, or flat paint as damage can occur.

### Caution

Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a basecoat/clearcoat paint finish on the vehicle.

To keep the paint finish looking new, keep the vehicle garaged or covered whenever possible.

### Protecting Exterior Bright Metal Moldings

#### Caution

Failure to clean and protect the bright metal moldings can result in a hazy white finish or pitting. This damage would not be covered by the vehicle warranty.

The bright metal moldings on the vehicle are aluminum, chrome, or stainless steel. To prevent damage always follow these cleaning instructions:

- Be sure the molding is cool to the touch before applying any cleaning solution.
- Use only approved cleaning solutions for aluminum, chrome, or stainless steel. Some cleaners are highly acidic or contain alkaline substances and can damage the moldings.
- Always dilute a concentrated cleaner according to the manufacturer's instructions.
- Do not use cleaners that are not intended for automotive use.
- Use a nonabrasive wax on the vehicle after washing to protect and extend the molding finish.

### Cleaning Exterior Lamps/Lenses, Emblems, Decals, and Stripes

Use only lukewarm or cold water, a soft cloth, and a car washing soap to clean exterior lamps, lenses, emblems, decals, and stripes. Follow instructions under "Washing the Vehicle" previously in this section.

Lamp covers are made of plastic, and some have a UV protective coating. Do not clean or wipe them when dry.

Do not use any of the following on lamp covers:

- Abrasive or caustic agents.
- Washer fluids and other cleaning agents in higher concentrations than suggested by the manufacturer.
- Solvents, alcohols, fuels, or other harsh cleaners.
- Ice scrapers or other hard items.
- Aftermarket appearance caps or covers while the lamps are illuminated, due to excessive heat generated.

#### Caution

Failure to clean lamps properly can cause damage to the lamp cover that would not be covered by the vehicle warranty.

#### Caution

Using wax on low gloss black finish stripes can increase the gloss level and create a non-uniform finish. Clean low gloss stripes with soap and water only.

### Air Intakes

Clear debris from the air intakes, between the hood and windshield, when washing the vehicle.

### Windshield and Wiper Blades

Clean the outside of the windshield with glass cleaner.

Clean rubber blades using a lint-free cloth or paper towel soaked with windshield washer fluid or a mild detergent. Wash the windshield thoroughly when cleaning the blades. Bugs, road grime, sap, and a buildup of vehicle wash/wax treatments may cause wiper streaking.

Replace the wiper blades if they are worn or damaged. Damage can be caused by extreme dusty conditions, sand, salt, heat, sun, snow, and ice.

## 284 Vehicle Care

### Weatherstrips

Apply weatherstrip lubricant on weatherstrips to make them last longer, seal better, and not stick or squeak. Lubricate weatherstrips at least once a year. Hot, dry climates may require more frequent application. Black marks from rubber material on painted surfaces can be removed by rubbing with a clean cloth. See *Recommended Fluids and Lubricants* ⇨ 295.

### 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 Wheel Trim

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 chrome wheel trim may be damaged if the vehicle is not washed after driving on roads that have been sprayed with magnesium chloride or calcium chloride. These are used on roads for conditions such as dust and ice. Always wash the chrome with soap and water after exposure.

#### Caution

To avoid surface damage on wheels and wheel trim, do not use strong soaps, chemicals, abrasive polishes, cleaners, or brushes. Use only GM approved cleaners. Do not drive the vehicle through an automatic car wash that uses silicon carbide tire/wheel cleaning brushes. Damage could occur and the repairs would not be covered by the vehicle warranty.

### Brake System

Visually inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear

and rotors for surface condition. Inspect drum brake linings/shoes for wear or cracks. Inspect all other brake parts.

### Steering, Suspension, and Chassis Components

Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year.

Inspect power steering for proper attachment, connections, binding, leaks, cracks, chafing, etc.

Visually check constant velocity joint boots and axle seals for leaks.

### Body Component Lubrication

Lubricate all key lock cylinders, hood hinges, liftgate hinges, and the steel fuel door hinges, unless the components are plastic. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

### Underbody Maintenance

At least twice a year, spring and fall, use plain water to flush any corrosive materials from the underbody. Take care to thoroughly clean any areas where mud and other debris can collect.

Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

### Sheet Metal Damage

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the vehicle warranty.

### Finish Damage

Quickly repair minor chips and scratches with touch-up materials available from your dealer to avoid corrosion. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

### Chemical Paint Spotting

Airborne pollutants can fall upon and attack painted vehicle surfaces causing blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface. See "Finish Care" previously in this section.

### Interior Care

To prevent dirt particle abrasions, regularly clean the vehicle's interior. Before using cleaners, read and follow all safety instructions on the label. While cleaning the interior, open the doors and windows to get proper ventilation. Newspapers or dark garments can transfer color to the vehicle's interior.

#### Caution

Immediately remove cleaners, hand lotions, sunscreen, and insect repellent from all interior surfaces or permanent damage may result.

#### Caution

Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage to the vehicle. Apply all cleaners directly to a cleaning cloth. Do not spray cleaners on any switches or controls.

When using liquid soap cleaners, follow the directions on the specific cleaner or soap solution for dilution instructions.

#### Caution

To prevent damage:

- Never use a razor or any other sharp object to remove soil from any interior surface
- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with too much pressure.
- Do not get any exposed electrical components wet.
- Do not use laundry detergents or dishwashing soaps with degreasers. Do not use solutions that contain strong or caustic soap.

(Continued)

## 286 Vehicle Care

### Caution (Continued)

- Do not heavily saturate the upholstery when cleaning.
- Do not use solvents or cleaners containing solvents.
- Do not use disinfecting wipes that are scented or contain bleach. Do not use wipes or cleaners that show a color transfer to the wipe or change the appearance of the interior surface when used.
- Do not use scented or gel-type hand sanitizers. If hand sanitizer comes in contact with interior surfaces of the vehicle, blot immediately and clean with a soft cloth dampened with a mild soap and water solution.

### Interior Glass

To clean, use a microfiber cloth fabric dampened with water. Wipe droplets left behind with a clean dry cloth. If necessary, use a commercial glass cleaner after cleaning with plain water.

### Caution

To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.

Cleaning the windshield with water during the first three to six months of ownership will reduce tendency to fog.

### Speaker Covers

Vacuum around a speaker cover gently, so that the speaker will not be damaged. Clean spots with water and mild soap.

### Coated Moldings

Coated moldings should be cleaned.

- When lightly soiled, wipe with a sponge or soft, lint-free cloth dampened with water.
- When heavily soiled, use warm soapy water.

### Vinyl/Rubber

If equipped with vinyl floor and rubber floor mats, use a soft cloth and/or brush dampened with water to remove dust and loose dirt. For more thorough cleaning, use a mild soap and water solution.

### Warning

Do not use cleaners that contain silicone, wax-based products, or cleaners that increase gloss on vinyl/rubber floor and mats. These cleaners can permanently change the appearance and feel of the vinyl/rubber and can make the floor slippery. Your foot could slip while operating the vehicle, and you could lose control, resulting in a crash. You or others could be injured.

### Fabric/Carpet/Suede

Start by vacuuming the surface using a soft brush attachment. If a rotating vacuum brush attachment is being used, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible:

- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soils, remove as much as possible prior to vacuuming.

To clean:

1. Saturate a clean, lint-free colorfast cloth with water. Microfiber cloth is recommended to prevent lint transfer to the fabric or carpet.
2. Remove excess moisture by gently wringing until water does not drip from the cleaning cloth.
3. Start on the outside edge of the soil and gently rub toward the center. Fold the cleaning cloth to a clean area frequently to prevent forcing the soil into the fabric.
4. Continue gently rubbing the soiled area until there is no longer any color transfer from the soil to the cleaning cloth.
5. If the soil is not completely removed, use a mild soap solution followed only by plain water.

If the soil is not completely removed, it may be necessary to use a commercial upholstery cleaner or spot lifter. Test a small hidden area for colorfastness before using a commercial upholstery cleaner or spot lifter. If ring formation occurs, clean the entire fabric or carpet.

After cleaning, use a paper towel to blot excess moisture.

### **Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays**

Use a microfiber cloth on high gloss surfaces or vehicle displays. First, use a soft bristle brush to remove dirt that can scratch the surface. Then gently clean by rubbing with a microfiber cloth. Never use window cleaners or solvents. Periodically hand wash the microfiber cloth separately, using mild soap. Do not use bleach or fabric softener. Rinse thoroughly and air dry before next use.

#### **Caution**

Do not attach a device with a suction cup to the display. This may cause damage and would not be covered by the vehicle warranty.

### **Instrument Panel, Leather, Vinyl, Other Plastic Surfaces, Low Gloss Paint Surfaces, and Natural Open Pore Wood Surfaces**

Use a soft bristle brush to remove dust from knobs and crevices on the instrument cluster. 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 and water solution.

#### **Caution**

Soaking or saturating leather, especially perforated leather, as well as other interior surfaces, may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, or spot removers. Do not use liquids that contain alcohol or solvents on leather seats. 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.

## 288 Vehicle Care

### Caution

Use of air fresheners may cause permanent damage to plastics and painted surfaces. If an air freshener comes in contact with any plastic or painted surface in the vehicle, blot immediately and clean with a soft cloth dampened with a mild soap solution. Damage caused by air fresheners would not be covered by the vehicle warranty.

### Cargo Cover and Convenience Net

If equipped, wash with warm water and mild detergent. Do not use chlorine bleach. Rinse with cold water, and then dry completely.

### Care of Seat Belts

Keep belts clean and dry.

### Warning

Do not bleach or dye seat belt webbing. It may severely weaken the webbing. In a crash, they might not be able to provide adequate protection. Clean and  
(Continued)

### Warning (Continued)

rinse seat belt webbing only with mild soap and lukewarm water. Allow the webbing to dry.

### Floor Mats

#### Warning

If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

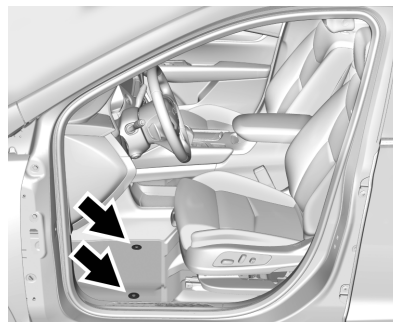
Use the following guidelines for proper floor mat use.

- The original equipment floor mats were designed for your vehicle. If the floor mats need to be replaced, it is recommended that GM-certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the pedals. Always check that the floor mats do not interfere with the pedals.

- Do not use a floor mat if the vehicle is not equipped with a floor mat retainer on the driver side floor.
- Use the floor mat with the correct side up. Do not turn it over.
- Do not place anything on top of the driver side floor mat.
- Use only a single floor mat on the driver side.
- Do not place one floor mat on top of another.

### Removing and Replacing the Floor Mats

The driver and passenger side floor mats are held in place by two button-type retainers.



1. Pull up on the rear of the floor mat to unlock each retainer and remove.
2. Reinstall by lining up the floor mat retainer openings over the carpet retainers and pushing down to snap into position.
3. Make sure the floor mat is properly secured in place. Verify the floor mat does not interfere with the pedals.

**Cleaning Rubber Floor Mats (All-Weather Mats and Floor Liners)**

See “Vinyl/Rubber” under *Interior Care*  
⇒ 285 for important cleaning information.

**290     Service and Maintenance**

**Service and Maintenance**

**General Information**  
General Information ..... 290

**Maintenance Schedule**  
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**Recommended Fluids, Lubricants, and Parts**  
Recommended Fluids and  
Lubricants ..... 295  
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**General Information**

Your vehicle is an important investment. This section describes the required maintenance for the vehicle. Follow this schedule to help protect against major repair expenses resulting from neglect or inadequate maintenance. It may also help to maintain the value of the vehicle if it is sold. It is the responsibility of the owner to have all required maintenance performed.

Your dealer has trained technicians who can perform required maintenance using genuine replacement parts. They have up-to-date tools and equipment for fast and accurate diagnostics. Many dealers have extended evening and Saturday hours, courtesy transportation, and online scheduling to assist with service needs.

Your dealer recognizes the importance of providing competitively priced maintenance and repair services. With trained technicians, the dealer is the place for routine maintenance such as oil changes and tire rotations and additional maintenance items like tires, brakes, batteries, and wiper blades.

**Caution**

Damage caused by improper maintenance can lead to costly repairs and may not be covered by the vehicle warranty. Maintenance intervals, checks, inspections, recommended fluids, and lubricants are important to keep the vehicle in good working condition.

Do not have chemical flushes that are not approved by GM performed on the vehicle. The use of flushes, solvents, cleaners, or lubricants that are not approved by GM could damage the vehicle, requiring expensive repairs that are not covered by the vehicle warranty.

The Tire Rotation and Required Services are the responsibility of the vehicle owner. It is recommended to have your dealer perform these services every 10 000 km. Proper vehicle maintenance helps to keep the vehicle in good working condition, improves fuel economy, and reduces vehicle emissions.

Because of the way people use vehicles, maintenance needs vary. There may need to be more frequent checks and services. The Additional Required Services - Normal Service are for vehicles that:

- Carry passengers and cargo within recommended limits on the Tire and Loading Information label. See *Vehicle Load Limits* ⇨ 179.
- Are driven on reasonable road surfaces within legal driving limits.
- Use the recommended fuel. See *Recommended Fuel* ⇨ 227.

Refer to the information in Additional Required Services - Normal Service.

The Additional Required Services - Severe Service are for vehicles that are:

- Mainly driven in heavy city traffic in hot weather.
- Mainly driven in hilly or mountainous terrain.
- Used for high speed or competitive driving.
- Used for taxi, police, or delivery service.

Refer to the information in Additional Required Services - Severe Service.

### 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* ⇨ 232.

## Maintenance Schedule

### Owner Checks and Services

Check the engine oil level. See *Engine Oil* ⇨ 235.

#### Once a Month

- Check the tire inflation pressures. See *Tire Pressure* ⇨ 261.
- Inspect the tires for wear. See *Tire Inspection* ⇨ 267.
- Check the windshield washer fluid level. See *Washer Fluid* ⇨ 243.

#### Every Five Years

- Replace brake fluid.

### Engine Oil Change

When the CHANGE ENGINE OIL SOON message displays, have the engine oil and filter changed within the next 1 000 km. 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 since the last service. Reset the oil life system when the oil is changed. See *Engine Oil Life System* ⇨ 237.

### Engine Air Filter Change

When the REPLACE AT NEXT OIL CHANGE message displays, the engine air filter should be replaced at the next engine oil change. When the REPLACE ENGINE AIR FILTER SOON message displays, the engine air filter should be replaced at the earliest convenience. Reset the engine air filter life system after the engine air filter is replaced. See *Engine Air Filter Life System* ⇨ 238.

## 292 Service and Maintenance

### Air Conditioning Desiccant (Replace Every Seven Years)

The air conditioning system requires maintenance every seven years. This service requires replacement of the desiccant to help the longevity and efficient operation of the air conditioning system. This service can be complex. See your dealer.

### Tire Rotation and Required Services Every 10 000 km

Rotate the tires, if recommended for the vehicle, and perform the following services. See *Tire Rotation* ⇨ 267.

- Check engine oil level and oil life percentage. If needed, change engine oil and filter, and reset the oil life system. See *Engine Oil* ⇨ 235 and *Engine Oil Life System* ⇨ 237.
- Check the air filter life percentage. If necessary, replace the engine air filter and reset the engine air filter life system. See *Engine Air Filter Life System* ⇨ 238.
- Check engine coolant level. See *Cooling System* ⇨ 239.
- Check windshield washer fluid level. See *Washer Fluid* ⇨ 243.

- Check tire inflation pressures. See *Tire Pressure* ⇨ 261.
- Inspect tire wear. See *Tire Inspection* ⇨ 267.
- Visually check for fluid leaks.
- Inspect brake system. See *Exterior Care* ⇨ 281.
- Visually inspect steering, suspension, and chassis components for damage, including cracks or tears in the rubber boots, loose or missing parts, or signs of wear at least once a year. See *Exterior Care* ⇨ 281.
- Inspect power steering for proper attachment, connections, binding, leaks, cracks, chafing, etc.
- Visually inspect halfshafts and drive shafts for excessive wear, lubricant leaks, and/or damage including: tube dents or cracks, constant velocity joint or universal joint looseness, cracked or missing boots, loose or missing boot clamps, center bearing excessive looseness, loose or missing fasteners, and axle seal leaks.
- Check restraint system components. See *Safety System Check* ⇨ 49.
- Visually inspect the fuel system, including the evaporative (EVAP) system, for damage or leaks. Visually check all fuel

pipes, vapor lines, and hoses for proper attachment, connection, routing, and condition.

- Visually inspect exhaust system and nearby heat shields for loose or damaged parts.
- Lubricate body components. See *Exterior Care* ⇨ 281.
- Check parking brake and automatic transmission park mechanism. See *Park Brake and P (Park) Mechanism Check* ⇨ 246.
- Check accelerator pedal for damage, high effort, or binding. Replace if needed.
- Visually inspect gas strut for signs of wear, cracks, or other damage. Check the hold open ability of the strut. If the hold open is low, service the gas strut. See *Gas Strut(s)* ⇨ 248.
- Inspect sunroof track and seal, if equipped. See *Sunroof* ⇨ 31.

### Additional Required Services — Normal Service

#### Every 10 000 km

- Replace passenger compartment air filter. Or every 12 months, whichever comes first. More frequent passenger compartment air filter replacement may

be needed if driving in areas with heavy traffic, poor air quality, high dust levels, or environmental allergens. Passenger compartment air filter replacement may also be needed if there is reduced airflow, window fogging, or odors. Your GM dealer can help determine when to replace the filter.

**Every 20 000 km**

- Replace front and rear wiper blades. Or every 12 months, whichever comes first. See *Wiper Blade Replacement* ⇨ 247.

**Every 90 000 km**

- Replace spark plugs. Inspect spark plug wires and/or boots.

**Every 160 000 km**

- Replace hood and/or body lift support gas struts. Or every 10 years, whichever comes first. See *Gas Strut(s)* ⇨ 248.

**Every 240 000 km**

- Change rear axle fluid, if equipped with AWD. Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

- Drain and fill engine cooling system. Or every six years, whichever comes first. See *Cooling System* ⇨ 239.
- Visually inspect accessory drive belts. Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

**Severe Conditions Requiring More Frequent Maintenance\***

- Public service, military, or commercial use vehicles to include the following:
  - Ambulances, police cars, and emergency rescue vehicles.
  - Civilian vehicles such as light duty pick-up trucks, SUVs, and passenger cars that are used in military applications.
  - Recovery vehicles such as tow trucks and flatbed single vehicle carriers or any vehicle that is consistently used in towing trailers or other loads.
  - High use commercial vehicles such as courier delivery vehicles, private security patrol vehicles, or any vehicles that operate on a 24-hour basis.

- Any vehicle consistently operated in a high sand or dust environment such as those used on oil pipelines and similar applications.

- Vehicles that are regularly used for short trips of 6 km or less.

The Oil Life Indicator will show you when to change the oil and filter. Under severe conditions the indicator may come on before 10 000 km. The indicator won't detect dust in the oil, so if you drive in a dusty area you may have to change the oil and filter sooner than every 10 000 km.

\* Footnote: Under extreme driving conditions listed above, it may be necessary to replace your spark plugs at more frequent intervals. For further assistance in determining the most suitable service maintenance intervals for your vehicle, please contact your authorized GM Dealer.

**Additional Required Services — Severe Service**

**Every 70 000 km**

- Change automatic transmission fluid.

## 294 Service and Maintenance

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### Every 120 000 km

- Change rear axle fluid, if equipped with AWD. Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

## Recommended Fluids, Lubricants, and Parts

### Recommended Fluids and Lubricants

Fluids and lubricants identified below by name or specification, including fluids or lubricants not listed here, can be obtained from your dealer.

Usage	Fluid/Lubricant
Automatic Transmission	DEXRON-VI Automatic Transmission Fluid.
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL Coolant. See <i>Cooling System</i> ⇨ 239.
Engine Oil	Engine oil meeting the dexos1 specification of the proper SAE viscosity grade. ACDelco dexos1 full synthetic is recommended. See <i>Engine Oil</i> ⇨ 235.
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor, and Release Pawl	Lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hydraulic Brake System	DOT 4 Hydraulic Brake Fluid.
Key Lock Cylinders, Hood and Door Hinges	Multi-Purpose Lubricant, Superlube. See your dealer.
Rear Axle/Front Axle	See your dealer.
Transfer Case (All-Wheel Drive)	Transfer Case Fluid. See your dealer.
Windshield Washer	Automotive windshield washer fluid that meets regional freeze protection requirements.

## 296 Service and Maintenance

### Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

Part	GM Part Number	ACDelco Part Number
Engine Air Cleaner/Filter	23430313	A3210C
Engine Oil Filter	55495105	PF66
Passenger Compartment Air Filter	13508023	CF185
Spark Plugs	55504354	41-103-IP
Wiper Blades		
Driver Side – 60 cm (23.62 in)	84580856	—
Passenger Side – 50 cm (19.68 in)	84580859	—
Rear – 30 cm (11.81 in)	84215609	—

## Technical Data

### Vehicle Identification

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## Vehicle Identification

### Vehicle Identification Number (VIN)



This legal identifier is in the front corner of the instrument panel, on the driver side of the vehicle. It can be seen through the windshield from outside. The Vehicle Identification Number (VIN) also appears on the Vehicle Certification label 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* ⇨ 298 for the vehicle's engine code.

## Service Parts Identification

There may be a large barcode on the certification label on the center pillar that you can scan for the following information:

- Vehicle Identification Number (VIN)
- Model designation
- Paint information
- Production options

If there is not a large barcode on this label, then you will find this same information on a label under the hatch area.

## 298 Technical Data

### Vehicle Data

#### Capacities and Specifications

Application	Capacities	
	Metric	English
Air Conditioning Refrigerant	For the air conditioning system refrigerant type and charge amount, see the refrigerant label under the hood. See your dealer for more information.	
Engine Cooling System*	9.4 L	10.0 qt
Engine Oil with Filter	5.0 L	5.3 qt
Fuel Tank		
FWD	60.2 L	15.9 gal
AWD	61.7 L	16.3 gal
Rear Axle (AWD)	0.87 L	0.92 qt
Wheel Nut Torque	190 N•m	140 lb ft
All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling.		
*Engine cooling system capacity values are based on the entire cooling system and its components.		

### Engine Specifications

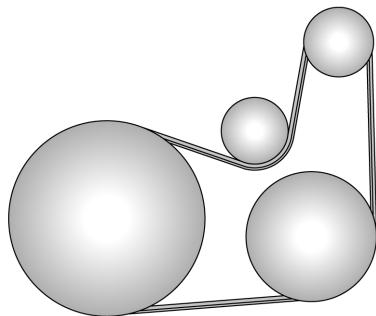
Engine	VIN Code	Horsepower	Torque	Spark Plug Gap
2.0L L4 Engine (LSY)	4	175 kW (235 hp) @ 5000 rpm	350 N•m (258 lb ft) @ 1500–4000 rpm	0.65–0.75 mm (0.026– 0.030 in)
The horsepower and torque values above are based on RON98 petrol (premium).				
Spark plug gaps are preset by the manufacturer. Re-gapping the spark plug is not recommended and can damage the spark plug.				

### Vehicle Top Speed

Engine	Metric	English
2.0L L4 Engine w/20 inch Tire	210 km/h	130 mph
2.0L L4 Engine w/18 inch Tire	210 km/h	130 mph

## 300 Technical Data

### Engine Drive Belt Routing



**2.0L I4 Engine (LSY)**

Customer Information

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Customer Information

Declaration of Conformity

Radio Frequency Devices

- Nigeria**  
Connection and use of this communications equipment is permitted by the Nigerian Communications Commission.
- China**
- Shall not change transmission frequency, increase transmission power (including additional RF power amplifier), and shall not connect external antenna or change the transmitting antenna.
  - When used, it shall not generate harmful interference to various legitimate radio communication services. Once interference is found, it shall be stopped immediately, and measures shall be taken to eliminate interference before it can continue to be used.
  - When using micropower radio equipment, interference from various radio services or radiation interference from industrial, scientific and medical applications must be tolerated.

- Shall not be used near aircraft and airports.
- Adaptive Cruise Control and Collision Imminent Braking**
- Jordan**  
TRC No. TRC/LPD/2014/126
- Morocco**  
Approval Number: MR 9490 ANRT 2014  
Approval Date: 2014-07-23
- Oman**

OMAN TRA  
R/2016/14  
D080134

United Arab Emirates (UAE)

TRA  
REGISTERED No:  
ER58296/17  
DEALER No:  
DA40068/15

## 302 Customer Information

### Japan

This device is granted pursuant to the Japanese Radio Law under the grant ID n° 202-LSE008.

This device should not be modified (otherwise the granted designation number will become invalid).

### China

Automotive driver assistant radar system model Continental ARS4-A

Micropower short range radio transmission device category H

Frequency Range: 76 – 77 GHz

Emission Power: 30 dBm

Antenna: Integrated microstrip patch array antenna

User Controls: None

### Rear Cross Traffic and Side Blind Zone Alert

### Jordan

TRC No. TRC/31/7918/2020

### Oman

TRA/TA  
R/3957/17  
D080134

### United Arab Emirates (UAE)

TRA  
Registered No:  
ER53878/17  
Dealer No:  
DA44932/15

### Japan

This device is granted pursuant to the Japanese Radio Law under the grant ID n° R 204-750001.

This device should not be modified (otherwise the granted designation number will become invalid).

### China

Automotive driver assistant radar system model Hella RS4

Micropower short range radio transmission device category H

Frequency Range: 24.05 – 24.25 GHz

Emission Power: 20 mW EIRP

Antenna: Integrated microstrip patch array antenna

User Controls: None

### Rear Collision Mitigation

### Oman

OMAN TRA  
TA-R/2300/14  
D090258

### Jordan

TRC No. T/4/11/11/6795

### United Arab Emirates (UAE)

TRA  
REGISTERED No:  
ER37537/15  
DEALER No:  
DA37380/15

### Japan

This device is granted pursuant to the Japanese Radio Law under the grant ID n° R 209-J00146.

This device should not be modified (otherwise the granted designation number will become invalid).

### China

Automotive driver assistant radar system model Aptiv L2C0055TR

Micropower short range radio transmission device category H

Frequency Range: 76 – 77 GHz

Emission Power: 22 dBm

Antenna: Integrated microstrip patch array antenna

User Controls: None

### Long Range Radar

### Israel

**Trademark :** Continental

**Year of Manufacture :** See product label

**Product :** Long Range Radar

**Model :** ARS4-A

**Manufacturing Country :** Germany

### RKE Transmitter

### Israel

**Trademark :** DENSO

**Year of Manufacture :** See product

**Product :** Electronic Key

**Model :** 2ES

**Manufacturing Country :** USA, China

### Jordan

TRC No. TRC/34/7148/2020

### Morocco

Approval number: MR 20095 ANRT 2019

### Oman

OMAN TRA  
R/7743/19  
D080134

### United Arab Emirates (UAE)

TRA  
REGISTERED No:  
ER72440/19  
DEALER No:  
0019826/09

### Japan

Electronic keys are compliant with the Radio Act certification.

Do not disassemble the battery carelessly except when replacing the battery. Use of disassembled and remodeled ones is prohibited by law.

### China

Model: 2ES

Frequency Range: 433 – 434.79 MHz

Transmitting Power: 10 mW (e.r.p)

Occupied Bandwidth: 400 kHz

### Keyless Access Module

### Israel

**Trademark :** DENSO

**Year of Manufacture :** See product

## 304 Customer Information

**Product :** Passive Entry Passive Start System  
(LF Transmitter)

**Model :** UPE01/U2NA0/U2NB0/U22B0/U22A0

**Manufacturing Country :** USA, China

### Morocco

Approved by Morocco

Approval number: MR 7566 ANRT 2012

Approval date: 2012-10-17

Approval number: MR 9491 ANRT 2014

Approval date: 2014-07-23

Approval number: MR 10027 ANRT 2015

Approval date: 2015-02-03

Approval number: MR 10125 ANRT 2015

Approval date: 2015-03-02

Approval number: MR 12260 ANRT 2016

Approval date: 2016-07-26

### Oman

#### Model U22B0 :

OMAN TRA  
R/2438/15  
D080134

#### Model U2NA0 :

OMAN TRA  
R/2028/14  
D100428

#### Model U2NB0 :

OMAN TRA  
R/2448/15  
D080134

#### Model UPE01 :

OMAN TRA  
R/0828/12  
D100428

### China

Models: UPE01, U2NA0, U2NB0, U21B0,  
U22B0, U22A0

Frequency Range: 125 kHz

Transmitting Power: 69 dBuA/m

### LG Telematics Module

#### United Arab Emirates (UAE)

TRA  
REGISTERED No:  
ER90623/20  
DEALER No:  
DA38660/15

### Tire Pressure Sensor Transmitter

#### Israel

**Trademark :** Schrader Electronics Ltd.

**Year of Manufacture :** See product

**Product :** Tire Pressure Sensor

**Model :** AG6SP4

**Manufacturing Country :** China/Mexico/  
Ireland

**Jordan**

Schrader Electronics Ltd

Model: AG6SP4

Serial No: AG6SP4

TRC/32/8239/2021

**Morocco**

Approved by Morocco

Approval number: MR 10719 ANRT 2015

Approval date: 2015\_08\_12

**Oman**

OMAN TRA  
R2606/15  
D080134

**United Arab Emirates (UAE)**

TRA  
REGISTERED No:  
ER39138/15  
DEALER No:  
DA0047074/10

**Japan**

Tire Pressure Sensors are compliant with the  
Radio Act certification (grant ID 201-140249).

This device should not be modified  
(otherwise the granted designation number  
will become invalid).

**China**

Model: AG6SP4

Frequency Range: 433.92 +/- 43 kHz

Transmitting Power: <5 mW EIRP

Occupied Bandwidth: <400 kHz

**Universal Garage Door Opener**

**Morocco**

Approved by Morocco

Approval number: MR 25908 ANRT 2020

Approval date: 2020\_07\_10

**United Arab Emirates (UAE)**

TRA  
REGISTERED No:  
ER46032/16  
DEALER No:  
DA35176/14

**Transmission Systems**

This vehicle has systems that transmit and/  
or receive radio waves subject to 2014/53/  
EU. The manufacturers of the systems listed  
below declare conformity with Directive  
2014/53/EU. The full text of the EU  
declaration of conformity for each system is  
available at the following Internet address:  
[www.cadillaceurope.com](http://www.cadillaceurope.com).

This vehicle has systems that transmit and/  
or receive radio waves subject to Radio  
Equipment Regulations of the United  
Kingdom. The manufacturers of the systems  
listed below declare conformity with Radio  
Equipment Regulations of the United  
Kingdom. The full text of the United  
Kingdom declaration of conformity for each  
system is available at the following Internet  
address: [www.cadillaceurope.com](http://www.cadillaceurope.com).

## 306 Customer Information



### Importer

GM Mobility Europe GmbH  
Bethmannstraße 50-54 Ort  
60311 Frankfurt am Main  
Hessen  
Germany

### RFR Bosch Thick 433 MHz

Robert Bosch GmbH  
Robert Bosch Platz1  
70839 Gerlingen, Germany  
Operation frequency: 433.92 MHz  
Maximum output power: -81.3 dBm

### Bosch Immobilizer BAR

Robert Bosch GmbH  
Robert Bosch Platz1  
70839 Gerlingen, Germany  
Operation frequency: 125 kHz

Maximum output power: -32.05 dBm

### Forward Collision Alert and Adaptive Cruise Control

ADC Automotive Distance Control  
Systems GmbH

Peter-Dornier-Strasse 10, 88131 Lindau,  
Germany

Frequency: 76-77 GHz

Power output: 35 dBm

Max: Less than 40 dBm

### Side Blind Zone Alert/Rear Cross Traffic Alert/ Lane Change Alert

Hella KGaA Hueck & Co.

Rixbecker Straße 75

59552 Lippstadt

Frequency: 24.050 - 24.250 GHz

Power Output: < 20 dBm (100mW)

### Radar – SRR Aptiv

L2C0055TR

APTIV Services US, LLC

2151 East Lincoln Road

Kokomo, Indiana 46902

USA

Frequency: 76–77 GHz

Power Output: 22 dBm

### Rear Collision Mitigation

APTIV Services US, LLC

2151 East Lincoln Road

Kokomo, Indiana 46902

USA

Operating frequency: 76-77 GHz

Maximum transmit power: 22 dBm

### Remote Key Denso S2 w/Motion 433Mhz

DENSO Corporation

1-1, Showa-cho, Kariya-shi, Aichi-ken,  
448-8661, Japan

Operating frequency: 433.92 MHz

Maximum output power (ERP): 0.19 mW

### Keyless Access Module

DENSO Corporation

1-1, Showa-cho, Kariya-shi, Aichi-ken,  
448-8661, Japan

Operating frequency: 125 kHz

Maximum transmit power: 0.97 mW

### Tire Pressure Monitoring System

Schrader Electronics Ltd.

11 Technology Park

Belfast Road

Antrim Bt41 1QS

Northern Ireland

United Kingdom

Operating frequency: 433.92 MHz

Maximum transmit power: < 10 mW

### Universal Garage Door Opener

Gentex Corporation

600 North Centennial Street

Zeeland, MI 49464

USA

Operating frequency: 433.05 MHz -  
434.79 MHz

Maximum transmit power: 0.138 mW E.R.P.

### Infotainment 3.5 Center Stack Module

Harman International Industries,  
Incorporated

30001 Cabot Drive

Novi, MI 48377 USA

Operating frequency ranges: 2402 - 2480  
MHz, 5150 - 5775 MHz

Maximum transmit power: 17 mW, 12 mW

### eCall Module

LG Electronics

European Shared Service Center B.V.

Krijgsman 1

1186 DM

Amstelveen

The Netherlands

Operating Frequency (MHz)	Maximum Transmit Power (dBm)
880 – 915	33.00
1710 – 1785	30.00
1920 – 1980	22.41
880 – 915	22.88
1920 – 1980	22.60
1710 – 1785	22.60
2500 – 2570	23.90
880 – 915	22.40
832 – 862	22.20
2570 – 2620	22.18
2402 – 2472	12.62

Operating Frequency (MHz)	Maximum Transmit Power (dBm)
1559 – 1610	

## 308 Customer Information

### Tire Jack



GM North America

General Motors Company  
Warren Technical Center  
Warren, Michigan 48093  
29427 Louis Chevrolet Rd.  
Warren, Michigan 48093  
U.S.A.

Declaration of Conformity  
Pursuant to Machinery Directive 2006/42/EC

We hereby declare that the product:

Product Description: Scissor / Screw Automotive Jack  
Type/Part #: 13508400-Base Jack

Is in conformity with Machinery Directive 2006/42/EC.

Technical standards applied:

GMW14337 Standard Equipment Jack - Hardware Tests  
GMW15005 Standard Equipment Jack and Spare Tire Vehicle Test

The person authorized to compile the technical file:

Lisa Pennick-Taylor  
General Motors Company  
29427 Louis Chevrolet Rd.  
Warren, MI, 48093, USA

Date: January 17, 2019, Warren/MI, USA

Phillip Hubler  
Engineering Group Manager  
Tire/Wheel System  
29427 Louis Chevrolet Rd.  
Warren, MI, 48093, USA

### Declaration of Conformity

Pursuant to Machinery Directive 2006/42/EC

We herby declare that the product:

Product Description: Scissor/Screw  
Automotive Jack

Type/Part Number: 13508400 Base Jack

Is in conformity with Machinery Directive  
2006/42/EC.

Technical standards applied:

GMW14337 Standard Equipment Jack –  
Hardware Tests

GMW15005 Standard Equipment Jack and  
Spare Tire, Vehicle Test

The person authorized to complete the  
technical file:

Lisa Pennick-Taylor

General Motors Company

GMNA, USA

Signed by:

Phillip Hubler

Engineering Group Manager Tire/Wheel  
Systems

GMNA, USA

## 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 or used. 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 or to help GM improve safety or features. 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.

### Cybersecurity

GM collects information about the use of your vehicle including operational and safety related information. We collect this information to provide, evaluate, improve, and troubleshoot our products and services and to develop new products and services.

The protection of vehicle electronics systems and customer data from unauthorized outside electronic access or control is important to GM. GM maintains appropriate security standards, practices, guidelines and controls aimed at defending the vehicle and the vehicle service ecosystem against unauthorized electronic access, detecting possible malicious activity in related networks, and responding to suspected cybersecurity incidents in a timely, coordinated and effective manner. Security incidents could impact your safety or compromise your private data. To minimize security risks, please do not connect your vehicle electronic systems to unauthorized devices or connect your vehicle to any unknown or untrusted networks (such as Bluetooth, WIFI or similar technology). In the event you suspect any security incident impacting your data or the safe operation of your vehicle, please stop operating your vehicle and contact your dealer.

### 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 airbag deployment or hitting a road obstacle, data

## 310 Customer Information

that will assist in understanding how a vehicle's systems performed. The EDR is designed to record data related to vehicle dynamics and safety systems for a short period of time, typically 30 seconds or less. The EDR in this vehicle is designed to record such data as:

- How various systems in your vehicle were operating.
- Whether or not the driver and passenger safety belts were buckled/fastened;
- How far (if at all) the driver was depressing the accelerator and/or brake pedal; and
- How fast the vehicle was traveling.

These data can help provide a better understanding of the circumstances in which crashes and injuries occur.

### Note

EDR data are recorded by your vehicle only if a non-trivial crash situation occurs. No data are recorded by the EDR under normal driving conditions and no personal data (e.g., name, gender, age, and crash location) are recorded. However, other parties, such as law enforcement, could combine the EDR

data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have the special equipment, can read the information if they have access to the vehicle or the EDR.

GM will not access these data or share it with others except: with the consent of the vehicle owner or, if the vehicle is leased, with the consent of the lessee; in response to an official request of police or similar government office; as part of GM's defense of litigation; or, as required by law. Data that GM collects or receives may also be used for GM research needs or may be made available to others for research purposes, where a need is shown and the data is not tied to a specific vehicle or vehicle owner.

### OnStar

If the vehicle is equipped with OnStar and has an active service plan, additional data may be collected and transmitted through the OnStar system. This includes information

about the vehicle's operation; collisions involving the vehicle; the use of the vehicle and its features, including infotainment; and the location and approximate GPS speed of the vehicle. Refer to the OnStar Terms and Conditions and Privacy Statement on the OnStar website.

See *OnStar Additional Information* ⇨ 313.

### 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 section for information on stored data and for deletion instructions.

## OnStar

### OnStar Overview

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### OnStar Services

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### OnStar Additional Information

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## OnStar Overview




 Privacy Button


 Blue OnStar Button

 Red Emergency Button

This vehicle may be equipped with a comprehensive, in-vehicle system that can connect to an OnStar Advisor for Emergency, Security, Navigation, Connections, and Diagnostics Services. OnStar and connected services may require a paid service plan and data plan. OnStar requires the vehicle battery and electrical system, cellular service, and GPS satellite signals to be available and operating. OnStar acts as a link to existing emergency service providers. OnStar may collect information about you and your vehicle, including location information. See OnStar User Terms, Privacy Statement, and Software Terms for more details including system limitations at [my.cadillacarabia.com](http://my.cadillacarabia.com) or [onstararabia.com](http://onstararabia.com).

The OnStar system status light is next to the OnStar buttons. If the status light is:

- Solid Green: System is ready.
- Flashing Green: On a call.
- Red: Indicates a problem.
- Off: System is off. Press  twice to speak with an OnStar Advisor.

Press  to speak to an Advisor. See "Contacting OnStar" later in this section.

Functionality of the Voice Command button may vary by vehicle and region.

Press  to:

- Open the myCadillac app on the infotainment display.


Or

- Obtain and customize the Wi-Fi hotspot name or SSID and password, if equipped.

Press  to connect to an Advisor to:


- Verify account information or update contact information.
- Receive a Diagnostic check of the vehicle's key operating systems.
- Receive Roadside Assistance.
- Manage Wi-Fi Settings, if equipped.

## 312 OnStar

Press  to get a priority connection to an OnStar Advisor available 24/7 to:

- Get help for an emergency.
- Be a Good Citizen.

### Contacting OnStar


To contact an OnStar Advisor, press  or call one of the following phone numbers.

Country	Phone Number
Bahrain	800 06956
Kuwait	22285334
UAE	800 04444433
Saudi Arabia STC	800 8449102
Saudi Arabia not STC	800 8500674

### OnStar Services

#### Emergency

Emergency Services require an active safety and security plan. With Automatic Crash Response, built-in sensors can automatically alert a specially trained OnStar Advisor who is immediately connected in to the vehicle to help.

Press  for a priority connection to an OnStar Advisor who can contact emergency service providers, direct them to your exact location, and relay important information.

With Roadside Assistance, Advisors can locate a nearby service provider to help with a flat tire, a battery jump, or an empty gas tank.

#### Security

If equipped, OnStar provides these services:

- With Stolen Vehicle Assistance, OnStar Advisors can use GPS to pinpoint the vehicle and help authorities quickly recover it.
- With Remote Ignition Block, if equipped, OnStar can block the engine from being restarted.


- With Stolen Vehicle Slowdown, if equipped, OnStar can work with law enforcement to gradually slow the vehicle down.

### Theft Alarm Notification

If equipped, if the doors are locked and the vehicle alarm sounds, a notification by text, e-mail, or both will be sent. If the vehicle is stolen, an OnStar Advisor can work with authorities to recover the vehicle.

## OnStar Additional Information


### Transferring Service

Press  to request account transfer eligibility information. The Advisor can cancel or change account information.

### Selling/Transferring the Vehicle


Call immediately to terminate your OnStar or connected services if the vehicle is disposed of, sold, transferred, or if the lease ends. See “Contacting OnStar” later in this section.

### Reactivation for Subsequent Owners

Press  and follow the prompts to speak to an Advisor as soon as possible. The Advisor will update vehicle records and explain OnStar or connected service options.

### How OnStar Service Works


Automatic Crash Response, Emergency Services, Stolen Vehicle Assistance, Remote Services, and Roadside Assistance are available on most vehicles. Not all OnStar services are available everywhere or on all vehicles. For more information, a full description of OnStar services, system limitations, and OnStar User Terms, Privacy Statement, and Software Terms, see “Contacting OnStar” later in this section.

- See [my.cadillacarabia.com](http://my.cadillacarabia.com).
- Press  to speak with an Advisor.

OnStar or connected 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 or connected services. Service involving location information about the vehicle cannot work

unless GPS signals are available, unobstructed, and compatible with the OnStar hardware. OnStar or connected 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 or connected services may not work. Other problems beyond the control of OnStar — such as hills, tall buildings, tunnels, weather, electrical system design and architecture of the vehicle, damage to the vehicle in a crash, or wireless phone network congestion or jamming — may prevent service.

### OnStar Personal Identification Number (PIN)


A PIN is needed to access some OnStar services. The PIN must be changed the first time when speaking with an Advisor. To change the OnStar PIN, contact an OnStar Advisor by pressing  or calling. See “Contacting OnStar” later in this section.

### Warranty

OnStar equipment may be warranted as part of the vehicle warranty.

## 314 OnStar

### Languages

The vehicle can be programmed to respond in multiple languages. Press  and ask for an Advisor. Advisors are available in English and Arabic. Available languages may vary by vehicle.

### Potential Issues

OnStar cannot perform Remote Door Unlock or Stolen Vehicle Assistance after the vehicle has been off continuously for 10 days without an ignition cycle. If the vehicle has not been started for 10 days, OnStar can contact Roadside Assistance or a locksmith to help gain access to the vehicle.


### Global Positioning System (GPS)

- Obstruction of the GPS can occur in a large city with tall buildings; in parking garages; around airports; in tunnels and underpasses; or in an area with very dense trees. If GPS signals are not available, the OnStar system should still operate to call OnStar. However, OnStar could have difficulty identifying the exact location.
- In emergency situations, OnStar can use the last stored GPS location to send to emergency responders.

### Cellular and GPS Antennas

Cellular reception is required for OnStar to send remote signals to the vehicle. Do not place items over or near the antenna to prevent blocking cellular and GPS signal reception.

### Unable to Connect to OnStar Message

If there is limited cellular coverage or the cellular network has reached maximum capacity, this message may come on. Press  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* ➔ 230. Added electrical


equipment may interfere with the operation of the OnStar system and cause it to not operate.

### Vehicle Software Updates

OnStar or GM may remotely deliver software updates or changes to the vehicle without further notice or consent. These updates or changes may enhance or maintain safety, security, or the operation of the vehicle or the vehicle systems. Software updates or changes may affect or erase data or settings that are stored in the vehicle, such as saved navigation destinations or pre-set radio stations. Neither OnStar nor GM is responsible for any affected or erased data or settings. These updates or changes may also collect personal information. Such collection is described in the OnStar privacy statement or separately disclosed at the time of installation. These updates or changes may also cause a system to automatically communicate with GM servers to collect information about vehicle system status, identify whether updates or changes are available, or deliver updates or changes. An active OnStar agreement constitutes consent

to these software updates or changes and agreement that either OnStar or GM may remotely deliver them to the vehicle.

### Privacy


The complete OnStar Privacy Statement may be found at [my.cadillacarabia.com](https://my.cadillacarabia.com). We recommend that you review it. If you have any questions, call 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

To obtain the source code under GPL, LGPL, MPL, and other open source licenses, that is contained in this product, please visit <https://opensource.lge.com>. In addition to the source code, all referred license terms, warranty disclaimers, and copyright notices are available for download. This offer is valid for a period of three years after our last shipment of this product. This offer is valid to anyone in receipt of this information.

\*Provided through LG Electronics Inc., who is solely responsible for provisions of related OSS compliance.

### Contacting OnStar

To contact an OnStar Advisor, press  or call one of the following phone numbers.

Country	Phone Number
Bahrain	80006956
Kuwait	22285334
UAE	800 04444433
Saudi Arabia STC	800 8449102
Saudi Arabia not STC	800 8500674

## 316 Connected Services

# Connected Services

### Connected Services

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## Connected Services

### Navigation

Navigation requires a specific OnStar or connected service plan.

#### Send Destination to Vehicle

Directions can be sent to the vehicle's navigation screen, if equipped.

Press , then ask the Advisor to download directions to the vehicle's navigation system, if equipped. After the call ends, the navigation screen will provide prompts to begin driving directions. Routes that are sent to the navigation screen can only be canceled through the navigation system.

See [my.cadillacarabia.com](http://my.cadillacarabia.com).

### Connections

The following services help with staying connected.

For more information, see [my.cadillacarabia.com](http://my.cadillacarabia.com).

#### Ensuring Security


- Change the default passwords for the Wi-Fi hotspot and myCadillac mobile application. Make these passwords

different from each other and use a combination of letters and numbers to increase the security.


- Change the default name of the SSID (Service Set Identifier). This is your network's name that is visible to other wireless devices. Choose a unique name and avoid family names or vehicle descriptions.

#### Wi-Fi Hotspot (If Equipped)

The vehicle may have a built-in Wi-Fi hotspot that provides access to the Internet and web content at 4G LTE speed. Up to seven mobile devices can be connected. A data plan is required. Use the in-vehicle controls only when it is safe to do so.

1. To retrieve Wi-Fi hotspot information, press  to open the OnStar app on the infotainment display, then select Wi-Fi Hotspot. On some vehicles, touch Wi-Fi or Wi-Fi Settings on the screen.
2. The Wi-Fi settings will display the Wi-Fi hotspot name (SSID), password, and on some vehicles, the connection type (no Internet connection, 3G, 4G, 4G LTE), and signal quality (poor, good, excellent). The LTE icon shows connection to Wi-Fi. It is

possible that the icon may not illuminate even though the vehicle has an active connection.

3. To change the SSID or password, press  or call to connect with an Advisor. On some vehicles, the SSID and password can be changed in the Wi-Fi Hotspot menu.

Country	Phone Number
Bahrain	80006956
Kuwait	22285334
UAE	800 0444433
Saudi Arabia STC	800 8449102
Saudi Arabia not STC	800 8500674

After initial set-up, your vehicle's Wi-Fi hotspot will connect automatically to your mobile devices. Manage data usage by turning Wi-Fi on or off on your mobile device, using the myCadillac mobile app, or by contacting an OnStar Advisor. On some vehicles, Wi-Fi can also be managed from the Wi-Fi Hotspot menu.

#### **MyCadillac Mobile App (If Available)**

Download the myCadillac mobile app to compatible Apple and Android smartphones. Cadillac users can access the following services from a smartphone:

- Remotely start/stop the vehicle, if factory-equipped.
- Lock/unlock doors, if equipped with automatic locks.
- Activate the horn and lamps.

- Check the vehicle's fuel level, oil life, or tire pressure, if factory-equipped with the Tire Pressure Monitor System.
- Turn the vehicle's Wi-Fi hotspot on/off, manage settings, and monitor data consumption, if equipped.
- Locate a dealer and schedule service.
- Request Roadside Assistance.
- Connect with Cadillac on social media.

Features are subject to change. For myCadillac mobile app information and compatibility, see [my.cadillacarabia.com](http://my.cadillacarabia.com).

An active OnStar or connected service plan may be required. A compatible device, factory-installed remote start, and power locks are required. Data rates apply. See [my.cadillacarabia.com](http://my.cadillacarabia.com) for details and system limitations.

## 318 Connected Services

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### Remote Services

Contact an OnStar Advisor to unlock the doors or sound the horn and flash the lamps.

### Diagnostics

By monitoring and reporting on the vehicle's key systems, OnStar Advanced Diagnostics, if equipped, provides a way to keep up on maintenance. Capabilities vary by model. See [www.onstararabia.com](http://www.onstararabia.com) for details and system limitations. Features are subject to change. For updates on feature capabilities, see [my.cadillacarabia.com](http://my.cadillacarabia.com). Message and data rates may apply.

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