



**CHEVROLET.**

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**C A M A R O**

Owner's Manual

# 2015 Chevrolet Camaro Owner Manual

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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, CHEVROLET, the CHEVROLET Emblem, CAMARO, and the CAMARO Emblem 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 manual.

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

Keep this manual in the vehicle for quick reference.

## Using this Manual

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

## Danger, Warnings, and Cautions

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

### **Danger**

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.



## iv Introduction

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

### Symbols

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

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

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

### Vehicle Symbol Chart

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

-  : Airbag Readiness Light
-  : Air Conditioning
-  : Antilock Brake System (ABS)
-  : Audio Steering Wheel Controls
-  : Brake System Warning Light
-  : Charging System
-  : Cruise Control
-  : Engine Coolant Temperature
-  : Exterior Lamps
-  : Fog Lamps
-  : Fuel Gauge

-  : Fuses
-  : Headlamp Main/Dipped-Beam Changer
-  : Malfunction Indicator Lamp
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-  : Power
-  : Remote Vehicle Start
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-  : Tyre Pressure Monitor
-  : Traction Control/StabiliTrak®
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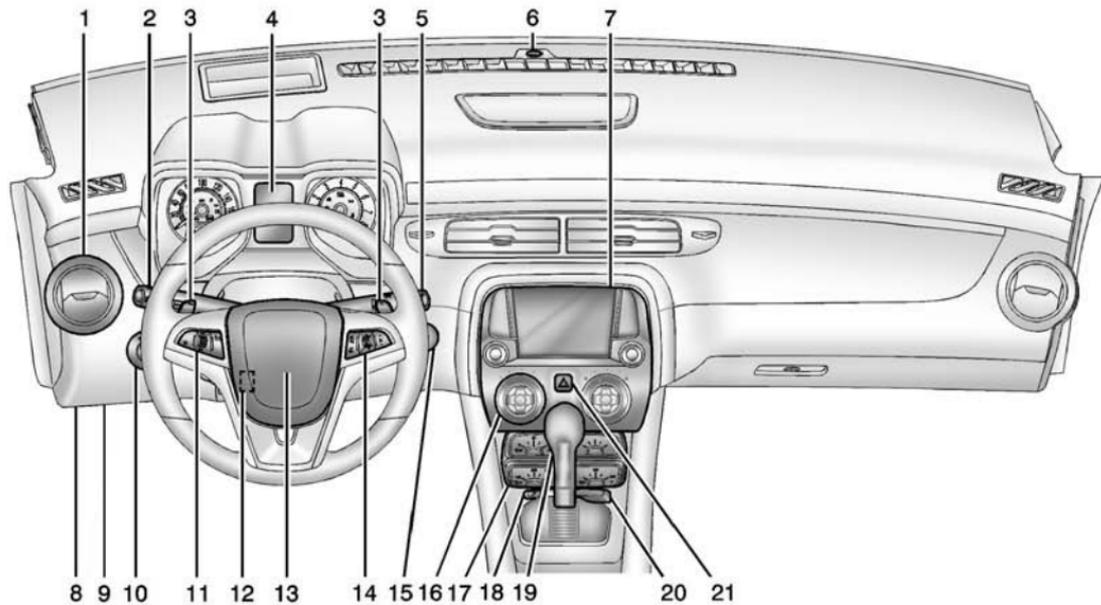
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## Instrument Panel



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### Initial Drive Information

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

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

### Remote Keyless Entry (RKE) System

The RKE transmitter may work up to 20 m (65 ft) away from the vehicle. If equipped with remote start, the engine may be started from up to 60 m (197 ft) away outside the vehicle.



With Remote Start Shown

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

Press  to unlock the driver door or all doors.

Press  to lock all doors.

Lock and unlock feedback can be personalised. See *Vehicle Personalisation* on page 5-36.

Press and hold  **HOLD** to open the boot.

Press and release  to initiate vehicle locator.

Press and hold  for at least three seconds to sound the panic alarm.

Press  again to cancel the panic alarm.

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

### Remote Vehicle Start

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

#### Starting the Vehicle

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

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

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

### Cancelling a Remote Start

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

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

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

## Door Locks

To lock or unlock a door:

- To lock the door from the inside, use the door lock knob on the top of the door.
- To unlock the door from inside, pull the handle once. Pulling the handle again unlatches the door.
- From the outside turn the key clockwise or anticlockwise, or press  or  on the Remote Keyless Entry (RKE) transmitter. See *Door Locks* on page 2-6 or *Remote Keyless Entry (RKE) System Operation* on page 2-3.

## Power Door Locks

The power door locks are on the front door panels and, if equipped, on the instrument panel.

 : Press to lock the doors.

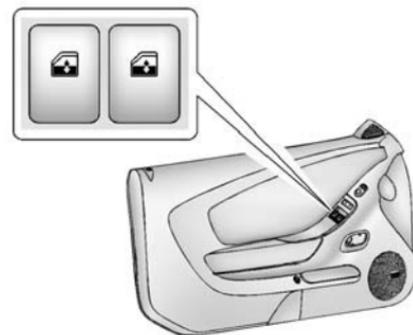
 : Press to unlock the doors.

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

## Boot Release

To open the boot, press the boot release button on the lower portion of the driver door, or press and hold **HOLD** on the Remote Keyless Entry (RKE) transmitter. See *Boot* on page 2-9.

## Windows



### Coupe Shown, Convertible Similar

The power window switches on the driver door control all windows. The window switch on the passenger door is only for that window.

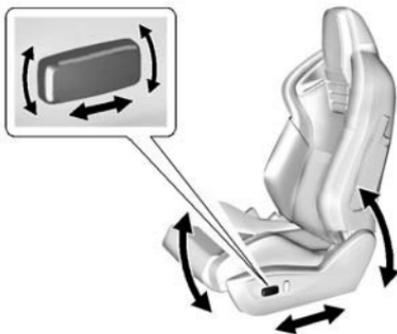
## 1-6 In Brief

Press the front of the switch down to open the window. Pull the switch up to close it. See *Windows* on page 2-14.

The switches work when the ignition is in ON/RUN or ACC/ACCESSORY, or in Retained Accessory Power (RAP). See *Retained Accessory Power (RAP)* on page 9-16.

## Seat Adjustment

### Power Seats



**High Performance Seat Shown,  
Other Power Seats Similar**

To adjust the seat:

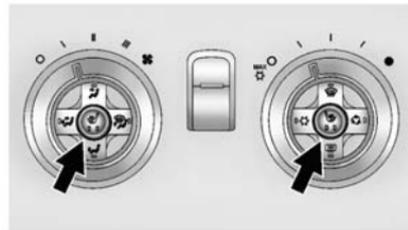
- Move the seat forward or rearward by sliding the horizontal control forward or rearward.
- Raise or lower the front part of the seat cushion by moving the front of the horizontal control up or down.

- Raise or lower the entire seat by moving the entire horizontal control up or down.

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

To raise or recline the seatback, tilt the vertical control forward or rearward. See *Reclining Seat backrests* on page 3-3.

## Heated Seats



Press  or  to turn on the heated seat. A light indicates this feature is on.

To operate, the engine must be running.

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

See *Heated Front Seats* on page 3-5.

## Head Restraint Adjustment

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

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

If equipped with high performance seats, the front seat head restraints cannot be adjusted.

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

## Safety Belts



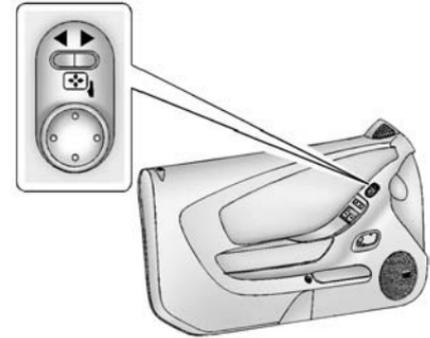
Refer to the following sections for important information on how to use safety belts properly:

- *Safety Belts* on page 3-7.
- *How to Wear Safety Belts Properly* on page 3-8.
- *Lap-Shoulder Belt* on page 3-9.

- *ISOFIX Child Restraint Systems* on page 3-39

## Mirror Adjustment

### Exterior



### Coupe Shown, Convertible Similar

Vehicles with outside power mirrors have controls on the driver door armrest.

To adjust each mirror:

1. Press the switch to select the driver or passenger side mirror.

## 1-8 In Brief

2. Press one of the four sides on the  (control pad) to adjust the mirror.
3. Adjust each outside mirror so that a little of the vehicle and the area behind it can be seen.

See *Power Mirrors* on page 2-13.

### Interior

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

The rearview mirror automatically dims to reduce glare of the headlamps from behind. The dimming feature is activated when the vehicle is started. See *Automatic Dimming Rearview Mirror* on page 2-14.

### Cleaning the Mirror

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

### Steering Wheel Adjustment



To adjust the steering wheel:

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

Do not adjust the steering wheel while driving.

### Interior Lighting

#### Dome Lamps



To change the settings, press the following:

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

 : Turns the lamp on automatically when a door is opened.

 : Turns the lamp on.

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

## Exterior Lighting



The exterior lamp control is on the instrument panel, on the outboard side of the steering wheel.

There are four positions:

 : Briefly turn to this position to turn the automatic light control off or on again. When released, the control returns to the AUTO position.

**AUTO:** Automatically turns on the headlamps, position lamps, taillamps, number plate lamps, and instrument panel lights.

 : Turns on the position lamps together with the taillamps, number plate lamps, and instrument panel lights.

 : Turns on the headlamps together with the position lamps, taillamps, number plate lamps, and instrument panel lights.

 : Press to turn the front fog lamps on or off.

 : Press to turn the rear fog lamps on or off.

See:

- *Exterior Lamp Controls on page 6-1*
- *Front Fog Lamps on page 6-5*
- *Rear Fog Lamps on page 6-5*

## Windscreen Wiper/Washer



The window wiper/washer lever is on the right side of the steering column. With the ignition in ACC/ACCESSORY or ON/RUN, move the window wiper lever to select the wiper speed.

**HI:** Use for fast wipes.

**LO:** Use for slow wipes.



## 1-10 In Brief

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

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

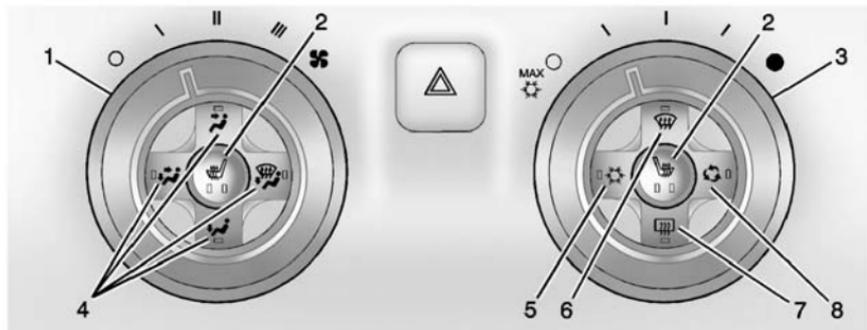
**1X :** For a single wipe, briefly move the wiper lever down. For several wipes, hold the wiper lever down.

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

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

## Climate Controls

The heating, cooling, defrosting, and ventilation for the vehicle can be controlled with this system.



1. Fan Control
2. Heated Seats (If Equipped)
3. Temperature Control
4. Air Delivery Mode Controls
5. Air Conditioning

6. Defrost
7. Rear Window Demister
8. Recirculation

See *Climate Control Systems* on page 8-1.

## Transmission

### Automatic Transmission

#### Tap Shift

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

See *Manual Mode on page 9-24*.

## Vehicle Features

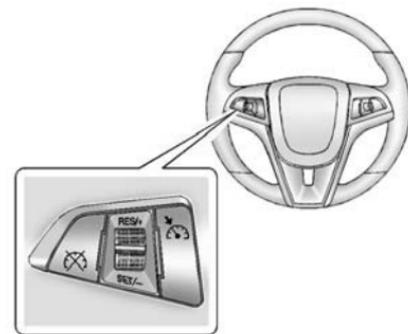
### Infotainment System

See the infotainment manual for information on the radio and available features.

### Steering Wheel Controls

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

## Cruise Control



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

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

**RES/+**: If there is a set speed in memory, press the thumbwheel up briefly to resume to that speed or

## 1-12 In Brief

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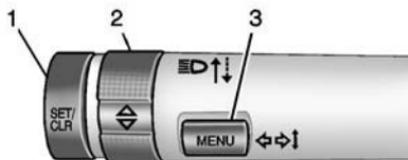
hold upward to accelerate. If cruise control is already active, use to increase vehicle speed.

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

See *Cruise Control* on page 9-33.

### Driver Information Centre (DIC)

The DIC display is in the centre of the instrument cluster. It shows the status of many vehicle systems. The controls for the DIC are on the indicator stalk.



1. **SET/CLR**: Press to set, or press and hold to clear, the menu item displayed.
2.  $\triangle / \nabla$  : Use the band to scroll through the items in each menu.
3. **MENU**: Press to display the DIC menus. This button is also used to return to or exit the last screen displayed on the DIC.

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

### Rear Vision Camera (RVC)

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

See *Rear Vision Camera (RVC)* on page 9-37.

### Parking Assist

If equipped, this system uses sensors on the rear bumper to assist with parking and avoiding objects while in R (Reverse). It operates at speeds less than 8 km/h (5 mph). Rear Parking Assist (RPA) uses audible beeps to provide distance and system information.

Keep the sensors on the vehicle's rear bumper clean to ensure proper operation.

See *Parking Assist* on page 9-36.

## Power Outlets

The vehicle has two accessory power outlets; one is below the climate control system and the other is inside the centre console storage. They can be used to plug in electrical equipment, such as a mobile phone or an MP3 player.

The accessory power outlets do not work when the key is removed from the ignition and the driver door is opened. This helps to preserve the battery life of the vehicle.

See *Power Outlets on page 5-5*.

## Performance and Maintenance

### Traction Control/ Electronic Stability Control

The Traction Control System (TCS) limits wheel spin. The system turns on automatically every time the vehicle is started.

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

- To turn off traction control, press and release the TCS/StabiliTrak button  on the console in front of the gear lever.  illuminates.
- Press the TCS/StabiliTrak button again to turn traction control back on.

- To turn off both traction control and electronic stability control, press and hold the TCS/StabiliTrak button  on the console in front of the shift lever.  and  illuminate.
- Press the TCS/StabiliTrak button again to turn on both systems.

See *Traction Control/Electronic Stability Control on page 9-29*.

### Tyre Pressure Monitor

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



The low tyre pressure warning light alerts to a significant loss in pressure of one of the vehicle's tyres. If the warning light comes on, stop as soon as possible and inflate

the tyres to the recommended pressure shown on the Tyre and Loading Information label. See *Vehicle Load Limits* on page 9-10. The warning light will remain on until the tyre pressure is corrected.

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

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

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

### Engine Oil Life System

The engine oil life system calculates engine oil life based on vehicle use and displays CHANGE ENGINE OIL SOON message when it is time to

change the engine oil and filter. The oil life system should be reset to 100% only following an oil change.

#### Resetting the Oil Life System

After you change the oil, the oil life system will need to be reset. See your dealer for service.

See *Engine Oil Life System* on page 10-11.

### Car Wash Guidelines

#### Caution

Some automatic car washes can cause damage to the vehicle, wheels, or convertible top, if equipped. Automatic car washes are not recommended, due to lack of clearance for the undercarriage and/or wide rear tyres and wheels. See "Washing the Vehicle" under *Exterior Care* on page 10-75

### Driving for Better Fuel Economy

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

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

- Replace the vehicle's tyres with the same TPC Spec number moulded into the tyre's sidewall near the size.
- Follow recommended scheduled maintenance.



# Keys, Doors, and Windows

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# Keys and Locks

## Keys

 **Warning**

Leaving children in a vehicle with the ignition key is dangerous and children or others could be seriously injured or killed. They could operate the power windows or other controls or make the vehicle move. The windows will function with the keys in the ignition, and children or others could be caught in the path of a closing window. Do not leave children in a vehicle with the ignition key.

## 2-2 Keys, Doors, and Windows



### Warning

If the key is unintentionally rotated while the vehicle is running, the ignition could be moved out of the RUN position. This could be caused by heavy items hanging from the key ring, or by large or long items attached to the key ring that could come into contact with the driver or steering wheel. If the ignition moves out of the RUN position,

(Continued)

### Warning (Continued)

the engine will shut off, braking and steering power assist may be impacted, and airbags may not deploy. To reduce the risk of unintentional rotation of the ignition key, do not change the way the ignition key and Remote Keyless Entry (RKE) transmitter, if equipped, are connected to the provided key rings.

The ignition key and key rings, and RKE transmitter, if equipped, are designed to work together as a system to reduce the risk of unintentionally moving the key out of the RUN position. The ignition key has a small hole to allow attachment of the provided key ring. It is important that any replacement ignition keys have a small hole. See your dealer if a replacement key is required.

The combination and size of the rings that came with your keys were specifically selected for your vehicle. The rings are connected to the key like two links of a chain to reduce the risk of unintentionally moving the key out of the RUN position. Do not add any additional items to the ring attached to the ignition key. Attach additional items only to the second ring, and limit added items to a few essential keys or small, light items no larger than an RKE transmitter.



The key can be used for the ignition and all locks.

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

See your dealer if a new key is needed.

## Remote Keyless Entry (RKE) System

See *Declaration of Conformity (Transmission Systems)* on page 13-1 or *Declaration of Conformity (Tyre Jack)* on page 13-2.

If there is a decrease in the RKE operating range:

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

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

## Remote Keyless Entry (RKE) System Operation

The RKE transmitter may work up to 20 m (65 ft) away from the vehicle. If equipped with remote start, the engine may be started from up to 60 m (197 ft) away outside the vehicle.

Other conditions can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System* on page 2-3.



### With Remote Start Shown

The following may be available:

- 🔒 (Lock):** Press to lock all doors.

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

If the driver door is open when **🔒** is pressed, all doors lock except the driver door, if enabled through vehicle personalisation.

Pressing **👊** may also arm the alarm system. See *Vehicle Alarm System* on page 2-11.

## 2-4 Keys, Doors, and Windows

 **(Unlock):** Press to unlock the driver door or all doors. See *Vehicle Personalisation on page 5-36*.

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

 **(Remote Boot Release):**  
Press and hold to release the boot.

 **(Vehicle Locator/Panic Alarm):** Press and release one time to initiate vehicle locator. The exterior lamps flash and the horn chirps three times.

Press and hold  for at least three seconds to sound the panic alarm. The horn sounds and the indicators flash until  is pressed again or the key is placed in the ignition and turned to ON/RUN.

 **(Remote Vehicle Start):**  
If equipped, press  and then  to start the engine from outside the vehicle using the RKE transmitter. See *Remote Vehicle Start on page 2-5* for additional information.

The transmitter buttons will not operate when the key is in the ignition.

### Programming Transmitters to the Vehicle

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

### Battery Replacement

#### Warning

Make sure that you dispose of old batteries in accordance with environmental protection regulations to help protect the environment and your health.

#### Caution

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

The battery is not rechargeable. To replace the battery:

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

## Remote Vehicle Start

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

 **(Remote Vehicle Start):** This button will be on the RKE transmitter if equipped with remote start.

The climate control system will use the previous settings during a remote start. The rear demist and heated seats, if equipped, may also come on. See “Remote Start Auto Heated Seats” under *Heated Front Seats on page 3-5* and *Vehicle Personalisation on page 5-36*.

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.

Other conditions can affect the performance of the transmitter. See *Remote Keyless Entry (RKE) System on page 2-3*.

### Starting the Engine Using Remote Start

To start the engine using the remote start feature:

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

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

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

Insert the key and turn it to ON/RUN before driving.

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

### Extending Engine Run Time

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

The remote start can only be extended once.

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

## 2-6 Keys, Doors, and Windows

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

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

### Canceling a Remote Start

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

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

### Conditions in Which Remote Start Will Not Work

The remote start will not operate if:

- The key is in the ignition.
- The bonnet 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 single remote start with an extension, have already been used.
- The vehicle is not in P (Park).

### Door Locks

#### Warning

Unlocked doors can be dangerous.

- Passengers, especially children, can easily open the doors and fall out of a moving vehicle. 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

(Continued)

#### Warning (Continued)

safety belts properly and the doors should be locked whenever the vehicle is driven.

- Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent injuries or even death from heat stroke. Always lock the vehicle whenever leaving it.
- Outsiders can easily enter through an unlocked door when slowing or stopping the vehicle. Lock the doors to help prevent this from happening.

### Manual Door Locks

Lock the doors from inside the vehicle by pressing down on the door lock knob on the top of the door.

The doors can also be unlocked from the inside by pulling the door handle. Pulling the door handle again unlatches the door.

Only the driver door has a key cylinder. Unlock the door from the outside by turning the key anti-clockwise.

Lock all doors from the outside by turning the key clockwise.

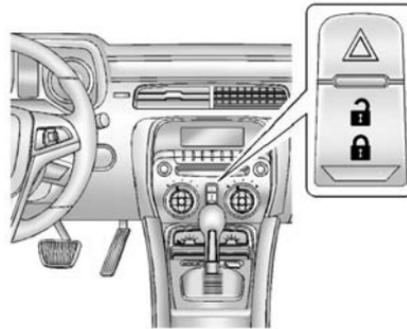
The door lock cylinder turns freely when either the wrong key is used, or the correct key is not fully inserted. The free turning door lock feature prevents the lock from being forced open.

To reset the lock, turn it to the vertical position with the correct key fully inserted. Remove the key and insert it again.

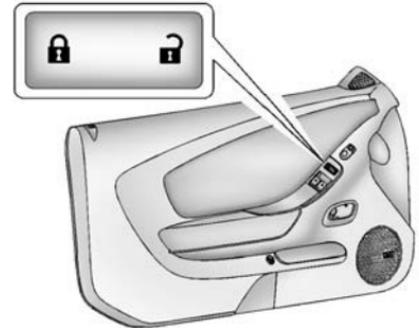
If this does not reset the lock, turn the key halfway around in the cylinder and repeat the reset procedure.

## Power Door Locks

If equipped, there is a power door lock switch on the instrument panel.



Instrument Panel



Front Door Panels

**🔒 (Lock):** Press to lock the doors.

**🔓 (Unlock):** Press to unlock the doors.

To program the power door locks, see *Vehicle Personalisation* on page 5-36.

## Delayed Locking

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

## 2-8 Keys, Doors, and Windows

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

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

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

This feature can also be programmed. See *Vehicle Personalisation on page 5-36*.

### Automatic Door Locks

When the doors are closed, the ignition is on, and the shift lever is moved out of P (Park) for automatic transmissions, or the vehicle speed is above 13 km/h (8 mph) for manual gearboxes, the doors will lock.

To unlock the doors:

- Press  on a power door lock switch.
- If equipped with an automatic transmission, shift the transmission into P (Park).
- If equipped with a manual gearbox, remove the key from the ignition when parked.

Automatic door unlocking can be programmed through the Driver Information Centre (DIC). See *Vehicle Personalisation on page 5-36*.

### Lockout Protection

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

If Unlocked Door Anti-Lockout is turned on, the vehicle is off with the driver door open, and door locking is requested, all the doors will lock and only the driver door will unlock. The Unlocked Door Anti-Lockout feature can be turned on or off using the vehicle personalisation menus. See *Vehicle Personalisation on page 5-36*.

## Doors

### Boot

#### Warning

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

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

(Continued)

#### Warning (Continued)

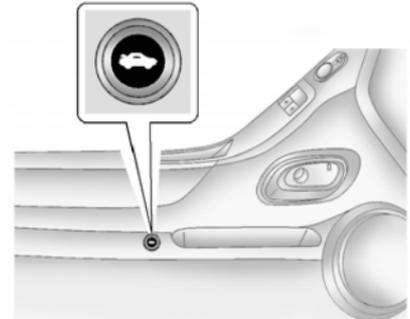
- Adjust the climate control system to a setting that brings in only outside air and set the fan speed to the highest setting. See "Climate Control Systems" in the Index.
- If the vehicle has a power tailgate, disable the power tailgate function.

For more information about carbon monoxide, see *Engine Exhaust* on page 9-20.

#### Boot Release

To open the boot from outside of the vehicle, press and hold  **HOLD** on the Remote Keyless Entry (RKE) transmitter.

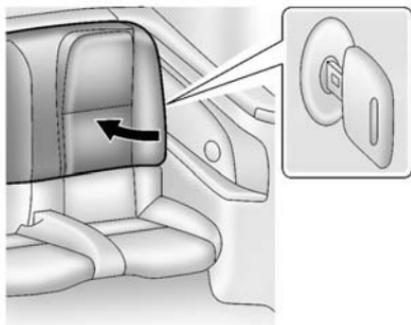
For automatic transmissions, the vehicle must be in P (Park). For manual gearboxes, the vehicle must be off, or stationary with the handbrake set.



From inside the vehicle, press  on the lower portion of the driver door.

## 2-10 Keys, Doors, and Windows

### Emergency Boot Release Lock (Convertible Only)



If the boot lid cannot be opened using the RKE transmitter or the boot release button:

1. Locate the manual release beside the rear seatback cushion on the driver side.

2. Pull the cushion to the side, then fully insert the key into the lock cylinder.
3. Firmly turn the key clockwise to unlatch the boot lid.
4. Remove the key.

### Emergency Boot Release Handle

#### **Caution**

Do not use the emergency boot release handle as a tie-down or anchor point when securing items in the boot as it could damage the handle.



There is an emergency boot release handle inside the boot on the liner, near the boot latch. On some vehicles, the release handle can be accessed by folding the rear seatback down. See *Rear Seats on page 3-6*.

Pull the release handle to open the boot from the inside.

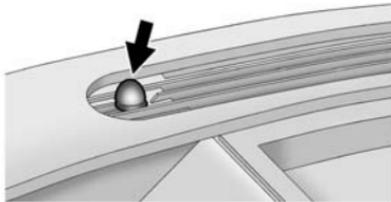
Return the release handle to its original position for proper operation.

## 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 security light, on the instrument panel near the windscreen, 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 bonnet, or the boot is open.

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

### Arming the Alarm System

1. Turn off the vehicle.
2. Lock the vehicle with one of the following:
  - Use the RKE transmitter.
  - 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 RKE transmitter a second time will bypass the 30-second delay and immediately arm the alarm system.

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

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

The alarm will also be activated if the passenger door, the boot, or the bonnet is opened without first disarming the system. When the alarm is activated, the indicators flash and the horn sounds for about 30 seconds. The alarm system will then re-arm to monitor for the next unauthorised event.

## 2-12 Keys, Doors, and Windows

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### Disarming the System

To disarm the system or turn off the alarm if it has been activated, do one of the following:

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

### To avoid setting off the alarm by accident:

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

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

### How to Detect a Tamper Condition

If  is pressed on the RKE transmitter and the horn chirps and the lights flash three times, a previous alarm occurred while the system was armed.

If the alarm has been activated, a message will appear on the DIC. See *Security Messages on page 5-34* for more information.

### Immobiliser

See *Declaration of Conformity (Transmission Systems) on page 13-1* or *Declaration of Conformity (Tyre Jack) on page 13-2*.

### Immobiliser Operation

This vehicle has a passive theft-deterrent system.

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

The vehicle is automatically immobilised when the key is removed from the ignition.

The system is automatically disarmed when the vehicle is started with the correct key. The key uses a transponder that matches an immobiliser control unit in the vehicle and automatically disarms the system. Only the correct key starts the vehicle. The vehicle may not start if the key is damaged.



The immobiliser light in the instrument cluster comes on if there is a problem with arming or disarming the theft-deterrent system. See *Immobiliser Light on page 5-21*.

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

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

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

If the engine still does not start with the other key, the vehicle needs service. If the vehicle does start, the first key may be damaged. See your dealer who can service the theft-deterrent system and have a new key made.

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

## Exterior Mirrors

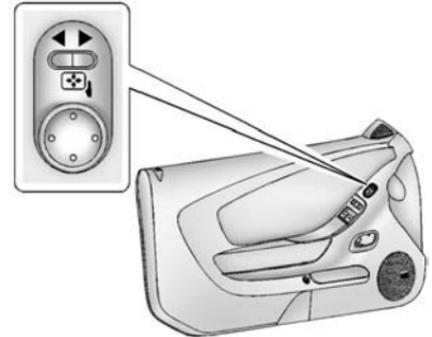
### Convex Mirrors

#### Warning

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

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

## Power Mirrors



### Coupe Shown, Convertible Similar

The power mirror controls are on the driver door armrest.

To adjust each mirror:

1. Press the switch to select the driver or passenger side mirror.
2. Press one of the four sides on the  (control pad) to adjust the mirror.
3. Adjust each outside mirror so that a little of the vehicle and the area behind it can be seen.

## 2-14 Keys, Doors, and Windows

### Indicator

If equipped, an arrow on the mirror flashes in the direction of the turn or lane change.

### Heated Mirrors

 (**Rear Window Demister**): Press to heat the outside mirrors.

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

### Automatic Dimming Mirror

The driver side outside mirror automatically dims to adjust for the glare of headlamps behind you.

## Interior Mirrors

### Automatic Dimming Rearview Mirror

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

The vehicle has an automatic dimming inside rearview mirror. Automatic dimming reduces the glare from the headlamps of the vehicle behind you. The dimming feature and the indicator light come on each time the vehicle is started.

### Cleaning the Mirror

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

## Windows

### Warning

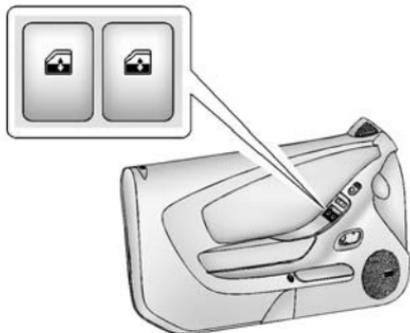
Never leave a child, a helpless adult, or a pet alone in a vehicle, especially with the windows closed in warm or hot weather. They can be overcome by the extreme heat and suffer permanent injuries or even death from heat stroke.



## Power Windows

### Warning

Children could be seriously injured or killed if caught in the path of a closing window. Never leave keys in a vehicle with children. See *Keys on page 2-1*.



### Coupe Shown, Convertible Similar

The power window switches on the driver door control all windows. The window switch on the passenger door is only for that window. Press

the front of the switch down to open the window. Pull the switch up to close it.

The switches work when the ignition is in ON/RUN or ACC/ACCESSORY, or in Retained Accessory Power (RAP). See *Retained Accessory Power (RAP) on page 9-16*.

### Window Indexing

This automatically lowers the window a small amount when the door is opened. When the door is closed, the window will raise fully.

If the vehicle loses power, you may need to reprogram the windows. Follow the procedure under "Programming the Power Windows" later in this section. If a message about the windows appears in the Driver Information Centre (DIC), see *Window Messages on page 5-36*.

If the window freezes to the door, this feature may not work. To close a door with a frozen window, push

the top of the window inward while closing the door so the top of the window goes under the roof seal.

### Express Window Operation

#### Coupe and Convertible Top

The window switches have an express-up and down feature that raises or lowers the window without holding the switch. Pull the switch up or press it down all the way and release it. Stop the window by operating the switch in the same direction.

#### Convertible Top Only

To express-up a front window, the same side rear window must be closed.

To close all the windows, pull all window switches up fully and release within four seconds. This will result in the windows closing automatically.

### Express Window Anti-Pinch Feature

When express-up is active, the window will auto-reverse if there is an obstruction or severe icing. The window returns to normal operation after the obstruction or condition is removed.

If conditions prevent a window from closing and it continues to auto-reverse, the window can be closed by having the ignition in ON/RUN and holding the window switch up until the window is closed.

### Express Window Anti-Pinch Override

 **Warning**

If express override is activated, the window will not reverse automatically. You or others could be injured and the window could be damaged. Before you use

(Continued)

### Warning (Continued)

express override, make sure that all people and obstructions are clear of the window path.

In an emergency, the anti-pinch feature can be overridden in a supervised mode. Hold the window switch all the way up to the second position. The window will rise for as long as the switch is held. Once the switch is released, the express mode is re-activated.

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

### Programming the Power Windows

If the battery on the vehicle has been recharged or disconnected, or is not working, you may need to reprogram the windows for the express-up feature to work. Before reprogramming, replace or recharge the vehicle's battery.

To program each front window:

1. With the ignition in ON/RUN, close all doors.
2. With the window partially open, pull the power window switch up until the window is fully closed.
3. Repeat Step 2 on the other window.

The windows are now reprogrammed.

### Sun Visors

The vehicle has an automatic dimming outside mirror on the driver side. The mirror will adjust for the glare of headlamps behind you.

## Roof

### Sunroof

If equipped, the sunroof switch is on the overhead console.



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

**Express-open:** Press and release the rear of the switch twice to express-open the sunroof.

**Vent:** Press and release the rear of the switch to vent the sunroof.

The sunroof only operates when the ignition is in ON/RUN or ACC/ACCESSORY, or if Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* on page 9-16.

### Express Sunroof Operation

The sunroof can be opened without holding the switch down. Push the switch in the open direction until the second pause. The sunroof will open fully.

To stop the sunroof from moving, press either the open or close sunroof switch.

Press and release the back of the switch to open the sunroof to the vent position. Press it again to express-open the sunroof. To stop the sunroof from opening, press the switch again.

A deflector automatically raises when the sunroof is opened and retracts while the sunroof closes.

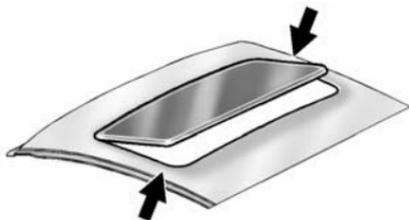
If the sunshade is closed, it opens automatically when the sunroof opens past the vented position.

### ⚠ Caution

Forcing the sunshade forward of the sliding glass panel may cause damage and the sunroof may not operate properly. Always close the glass panel before closing the sunshade.

To close the sunroof, press the front of the switch and hold it until the sunroof is closed. The sunroof will stop if the switch is released. Close the sunshade by hand.

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

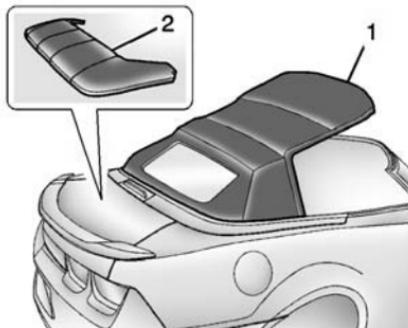


Dirt and debris may collect on the sunroof seal or in the track. This could cause an issue with sunroof operation or noise. It could also plug the water drainage system.

Periodically open the sunroof and remove any obstacles or loose debris. Wipe the sunroof seal and roof sealing area using a clean cloth, mild soap, and water. Do not remove grease from the sunroof.

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

### Convertible Top Power Operation



1. Convertible Top
2. Tonneau Cover (In the Boot)

To operate the convertible top use the following steps.

### Caution

Do not open the convertible top if:

- Objects are in the storage area that could damage it or break the glass rear window.
- The top is wet or dirty. This can cause stains, mildew or damage the inside of the vehicle. Dry the convertible top before lowering.

Always close the convertible top if leaving the vehicle outdoors.

Leaving the convertible top open and exposing the interior of the vehicle to outdoor conditions may cause damage.

Do not operate the convertible top while driving in windy conditions.

Do not leave the convertible top in a non-secure position. Keep completely closed or open.

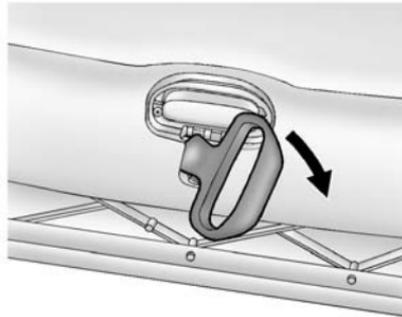
**⚠ Caution**

If you raise or lower the convertible top while the vehicle is in motion, you could damage the top or the top mechanism. The repairs would not be covered by the warranty. Always put an automatic transmission in P (Park) or a manual gearbox in Neutral before raising or lowering the convertible top.

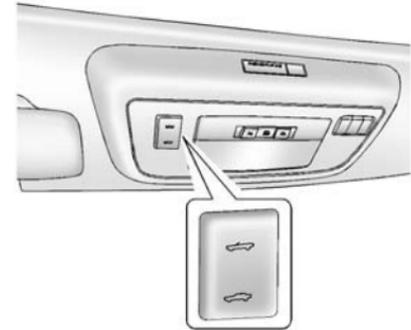
**Lowering the Convertible Top**

1. Park on a level surface. Place the vehicle in P (Park) with an automatic transmission and Neutral with a manual transmission. Set the parking brake.
2. Remove the tonneau cover from the boot.
3. The rear boot partition must be in the fastened position. See *Rear Storage on page 4-1*.

4. Remove all objects on or above the rear boot partition.
5. Close the boot.
6. Start the engine.



7. Release the convertible top front latch above the inside rearview mirror, by pulling down and turning it clockwise.
8. Return the convertible top front latch to the closed position.



9. Press and hold the rear of the convertible top button. The windows will automatically lower and the convertible top will lower into the rear of the vehicle. A chime will sound when the convertible top has lowered completely.
10. Install the tonneau cover. See *Tonneau Cover on page 4-2*.

If the convertible top is operated multiple times, the engine should be running to prevent drain on the vehicle's battery. Under certain conditions, the Driver Information

## 2-20 Keys, Doors, and Windows

Centre (DIC) may display a message regarding the convertible top. See *Convertible Top Messages on page 5-29*.

### Caution

Raising the top without removing the tonneau cover may damage the top components and the tonneau cover. Remove the tonneau cover before operating the convertible top.

### Raising the Convertible Top

1. Park on a level surface. Place the vehicle in P (Park) with an automatic transmission and Neutral with a manual transmission. Set the parking brake.
2. Remove the tonneau cover if installed. See *Tonneau Cover on page 4-2*.

3. Move any objects that have fallen against the convertible top inside the boot.
4. Close the boot.
5. Start the engine.



### Warning

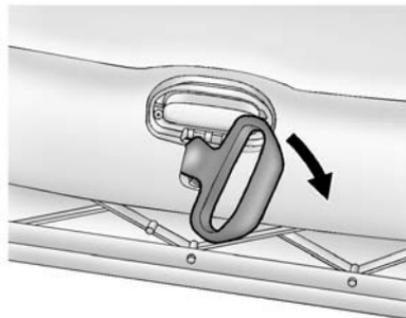
Placing hands on the top of the windscreen frame when closing the convertible soft top could cause fingers to be pinched and

(Continued)

### Warning (Continued)

may cause injury. Keep hands below the windscreen frame when closing the convertible top.

6. Press and hold the front of the convertible top button. The top will raise and the windows will lower.
7. After the convertible top is completely raised, release the convertible top button.



8. Release the convertible top front latch from the lock position by pulling down and turning it clockwise.
9. Lock the convertible top front latch by pulling down and turning it anti-clockwise, then push it up.

If the convertible top has been opened repeatedly within a short time and is not working, wait five minutes before pressing the convertible top button again.

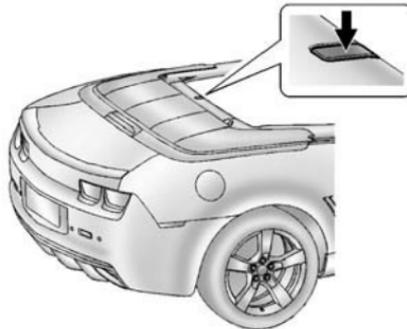
Operation of the convertible top cannot be attempted for five minutes after the last time the convertible top switch was pressed if the convertible top was opened repeatedly within a short time and the top has stopped functioning.

If the vehicle has lost power, the convertible top can still be raised by releasing pressure on the hydraulic pump.

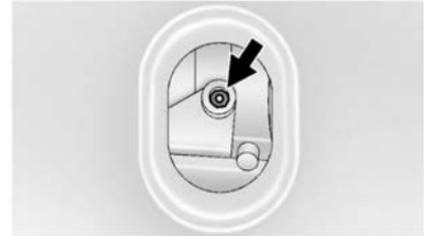
Never attempt to open or close the convertible top manually without first releasing pressure.

### Raising the Convertible Top Manually

1. Park on a level surface. Place the vehicle in P (Park) with an automatic transmission and Neutral with a manual transmission. Set the parking brake.
2. Remove the tonneau cover if installed. See *Tonneau Cover* on page 4-2.
3. Move any objects that have fallen against the convertible top inside the boot.

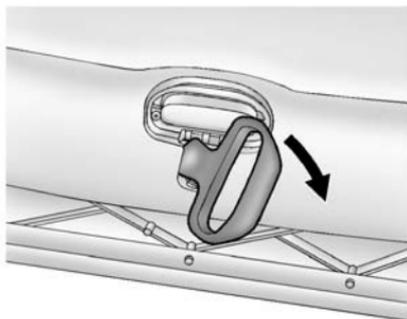


4. Remove the trim cover to access the hydraulic pressure release bolt.



5. Locate the pressure release bolt on the top of the hydraulic pump.
6. Using the provided wrench, turn the pressure release bolt anticlockwise no more than one turn.
7. Reinstall the trim cover.
8. Pull the front of the convertible top up and forward.

## 2-22 Keys, Doors, and Windows



9. After the convertible top is completely raised, release the convertible top front latch from the lock position by pulling down and turning it clockwise.
10. Lock the convertible top front latch by pulling down and turning it anti-clockwise, then push it up.

When power is restored to the vehicle, the pressure release bolt must be tightened using the provided wrench by turning it

clockwise. The convertible top button can then be used to lower or raise the convertible top.

If the convertible top is operated multiple times, the engine should be running to prevent drain on the vehicle's battery. Under certain conditions, the Driver Information Centre (DIC) may display a message regarding the convertible top. See *Convertible Top Messages on page 5-29*.

If the battery has been disconnected, the power windows must be programmed for the convertible top to operate. See *Power Windows on page 2-15*.

### **Cleaning the Convertible Top**

The convertible top should be cleaned often. High pressure car washes may cause water to enter the vehicle.

Hand wash the convertible top in the shade. Use a mild soap, lukewarm water, and a soft sponge. A chamois or cloth may leave lint on

the top and a brush can chafe the threads in the top fabric. Do not use detergents, harsh cleaners, solvents, or bleaching agents.

Wet the entire vehicle and wash the top evenly to avoid spots or rings. Let the soap remain on the fabric for a few minutes. When the top is very dirty, use a mild foam-type cleaner. Thoroughly rinse, then let the top dry in direct sunlight.

To protect the convertible top:

- After washing, the top must be completely dry before lowering.
- Do not get any cleaner on the painted finish; it could leave streaks.
- Before going through an automatic car wash, find out if the equipment could damage the convertible top.

## Seats and Restraints

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## 3-2 Seats and Restraints

### Head Restraints

If equipped with base seats, the vehicle's front seats have adjustable head restraints in the outboard seating positions.

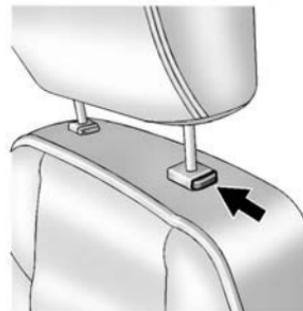
If equipped with high performance seats, the vehicle's front seats have head restraints in the outboard seating positions that cannot be adjusted.

#### **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.



If equipped with base seats, adjust the head restraint so that the top of the restraint is at the same height as the top of the occupant's head. This position reduces the chance of a neck injury in a crash.



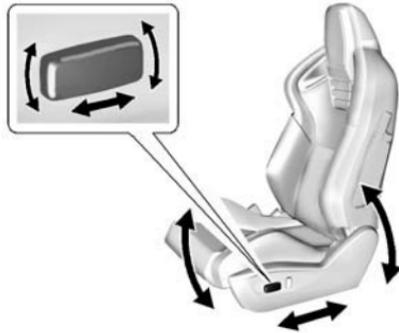
The height of the head restraint can be adjusted. Pull the head restraint up to raise it. Try to move the head restraint to make sure that it is locked in place.

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

The front seat outboard head restraints are not removable.

## Front Seats

### Power Seat Adjustment



**High Performance Seat Shown,  
Other Power Seats Similar**

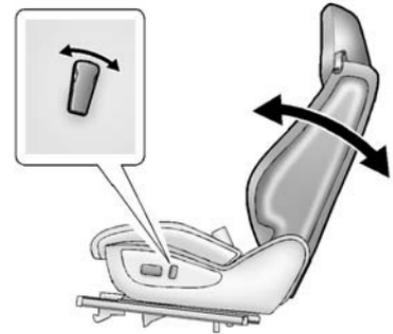
To adjust a power seat:

- Move the seat forward or rearward by sliding the horizontal control forward or rearward.

- Raise or lower the front part of the seat cushion by moving the front of the horizontal control up or down.
- Raise or lower the entire seat by moving the entire horizontal control up or down.

## Reclining Seat Backrests

### Power Reclining Seatbacks



**Base Power Seat Shown, High  
Performance Seat Similar**

To adjust the seatback:

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

## 3-4 Seats and Restraints

### Warning

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

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

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

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



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

## Seat-Back Latches



To access the rear seats, pull up on the latch on the rear of the driver or front passenger seatback. Fold the backrest forward.

### 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.

(Continued)

**Warning (Continued)**

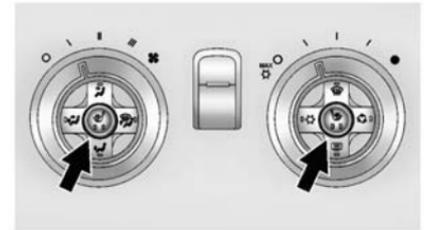
Always push and pull on the seatbacks to be sure they are locked.

To return the seatback to the upright position, lift the seatback and manually push it rearward until it locks in place. Push and pull on the backrest to make sure it is locked.

The power recline control is deactivated when the seatback is folded forward and will not function until the seatback has been manually returned to the upright, locked position. This is normal. Do not use the power recline control on the outboard side of the seat to raise the seatback. See *Reclining Seatbacks* on page 3-3.

**Heated Front Seats****Warning**

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



Press  or  to turn on the heated seat. A light indicates this feature is on.

To operate, the engine must be running.

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

The passenger seat may take longer to heat up.

## 3-6 Seats and Restraints

### Remote Start Auto Heated Seats

If equipped, when it is cold outside, the heated seats can be turned on automatically during a remote start. They are cancelled when the ignition is turned on. Press the button to use the heated seats after the vehicle is started.

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

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

The heated seats will not turn on during a remote start unless they are enabled in the vehicle personalisation menu. See *Remote Vehicle Start on page 2-5* and *Vehicle Personalisation on page 5-36*.

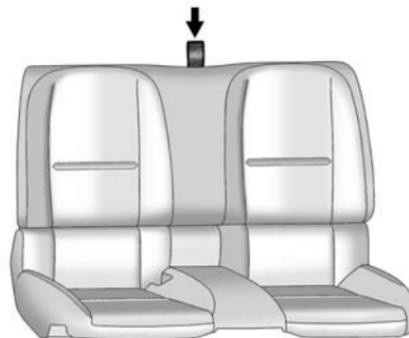
### Rear Seats

#### Caution

On convertible models, there is a speaker between the two rear seating positions on the seatback. Damage could occur if someone leans on the speaker, if cargo is loaded on it, or if liquid is spilled on it. Do not lean against the speaker, place cargo on the speaker, or spill liquids on the speaker.

The rear seat has two designated seating positions. If equipped, the coupé seat can be folded for more cargo space. Fold the seat only when the vehicle is parked.

To fold the seat backrest down:



1. Pull on the strap on the top of the rear seatback.
2. Fold the backrest down.

 **Warning**

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

Lift the seatback up to raise it, and push it back to lock it into place. Make sure the safety belt is not twisted or caught in the seatback.

## Safety Belts

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

 **Warning**

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

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

(Continued)

**Warning (Continued)**

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

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

This vehicle has indicators as a reminder to buckle the safety belts. See *Safety Belt Reminders on page 5-12*.

## 3-8 Seats and Restraints

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### Why Safety Belts Work



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

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

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

### Questions and Answers About Safety Belts

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

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

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

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

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

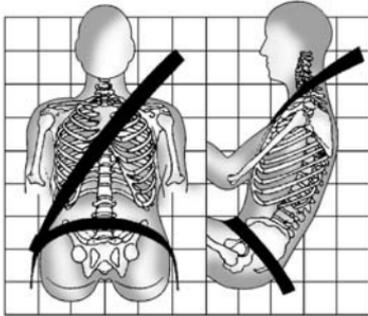
### How to Wear Safety Belts Properly

This section is only for people of adult size.

There are special things to know about safety belts and children. And there are different rules for smaller children and infants. If a child will be riding in the vehicle, see *Older Children on page 3-27* or *Infants and Young Children on page 3-29*. Follow those rules for everyone's protection.

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

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



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

would apply force on your abdomen. This could cause serious or even fatal injuries.

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

**Warning**

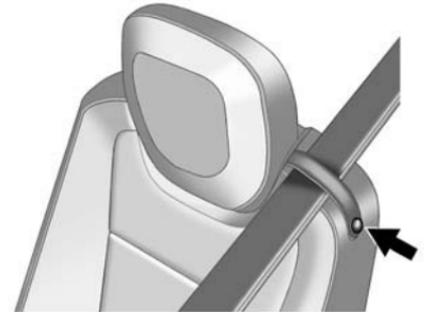
You can be seriously injured, or even killed, by not wearing your safety belt properly.

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

### Lap-Shoulder Belt

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

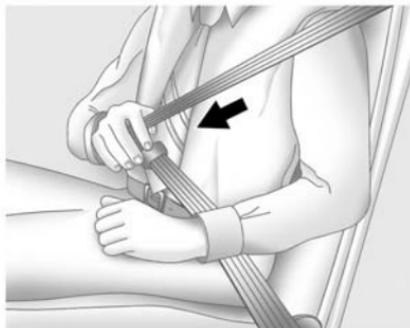
The following instructions explain how to wear a lap-shoulder belt properly.



1. If the seat has a safety belt guide, and the safety belt is not routed through the guide, snap the guide around the belt webbing. Be sure the belt is not twisted.

## 3-10 Seats and Restraints

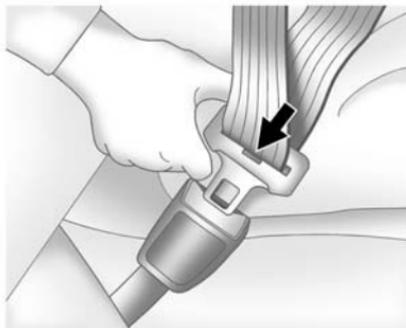
- Adjust the seat, if the seat is adjustable, so you can sit up straight. To see how, see "Seats" in the Index.



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

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

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



- 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 safety belt could be quickly unbuckled if necessary.



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

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



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

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

### Safety Belt Pretensioners

This vehicle has safety belt pretensioners for the front outboard occupants. Although the safety belt pretensioners cannot be seen, they are part of the safety belt assembly.

They can help tighten the safety belts during the early stages of a moderate to severe frontal, near-frontal, or rear crash if the threshold conditions for pretensioner activation are met. If the vehicle has side impact airbags, safety belt pretensioners can help tighten the safety belts in a side crash. And, if the vehicle has roof-rail airbags the safety belt pretensioners can help tighten the safety belts during a rollover crash.

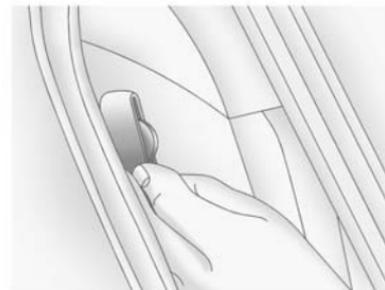
Pretensioners work only once. If the pretensioners activate in a crash, the pretensioners and probably other parts of the vehicle's safety belt system will need to be replaced. See *Replacing Safety Belt System Parts after a Crash* on page 3-14.

### Rear Safety Belt Comfort Guides

This vehicle may have rear safety belt comfort guides. If not, they may be available through your dealer.

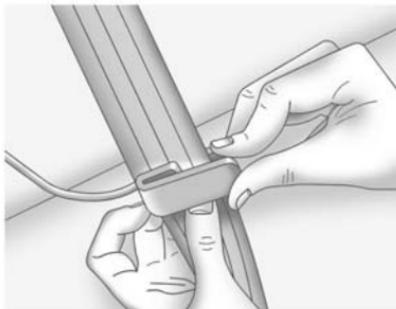
Rear shoulder belt comfort guides may provide added safety belt comfort for older children who have outgrown booster seats and for some adults. When installed on a shoulder belt, the comfort guide positions the shoulder belt away from the neck and head.

To install:

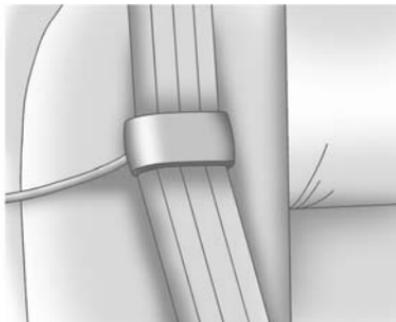


1. Pull the elastic cord out from between the edge of the backrest and the interior body to remove the guide from its storage clip.

## 3-12 Seats and Restraints



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



3. Be sure that the belt is not twisted and it lies flat. The elastic cord must be behind the belt with the plastic guide on the front.

### **Warning**

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

(Continued)

### **Warning (Continued)**

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



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

To remove and store the comfort guide, squeeze the belt edges together so that the safety belt can be removed from the guide. Slide the guide onto the clip, leaving only the loop of the elastic cord exposed.

Properly secure the guide before folding the seatback.

### **Safety Belt Use During Pregnancy**

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



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

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

### **Safety System Check**

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

Make sure the safety belt reminder light is working. See *Safety Belt Reminders on page 5-12*.

Keep safety belts clean and dry. See *Safety Belt Care on page 3-14*.

## 3-14 Seats and Restraints

### Safety Belt Care

Keep belts clean and dry.

#### Warning

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

### Replacing Safety Belt System Parts after a Crash

#### Warning

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

(Continued)

#### Warning (Continued)

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

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

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

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

#### Warning

Safety procedures must always be observed when disposing of the vehicle or vehicle parts. Disposal should only be performed by an authorised service centre, to help protect the environment and your health.

## Airbag System

The vehicle has the following airbags:

- A frontal airbag for the driver.
- A frontal airbag for the front outboard passenger.
- A seat-mounted side impact airbag for the driver.
- A seat-mounted side impact airbag for the front outboard passenger.

The vehicle may also have the following airbags:

- 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 in your vehicle will have the word AIRBAG in the trim or on a label near the deployment opening.

For frontal airbags, the word AIRBAG will appear on the middle part of the steering wheel for the driver and on the instrument panel for the front outboard passenger.

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

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

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

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

### Warning

You can be severely injured or killed in a crash if you are not wearing your safety belt, even with airbags. Airbags are designed to work with safety belts, not replace them. Also, airbags are not designed to inflate in every crash. In some crashes safety belts are the only restraint. See *When Should an Airbag Inflate?* on page 3-18.

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

### Warning

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

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

### Warning

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Always secure children properly in the vehicle. To read how, see *Older Children on page 3-27* or *Infants and Young Children on page 3-29*.



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

The system checks the airbag electrical system for malfunctions. The light tells you if there is an electrical problem. See *Airbag Readiness Light on page 5-12*.

## Where Are the Airbags?



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



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



**Coupe Models, Driver Side Shown,  
Passenger Side Similar**

On coupe models, the seat-mounted side impact airbags for the driver and front outboard passenger are in the side of the seat backs closest to the door.



**Convertible Models, Driver Side  
Shown, Passenger Side Similar**

On convertible models, the seat-mounted side impact airbags for the driver and front outboard passenger are in the side of the seat backs closest to the door.



### Coupe Models, Driver Side Shown, Passenger Side Similar

On coupe models, 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

(Continued)

#### **Warning (Continued)**

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

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

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

### **When Should an Airbag Inflate?**

This vehicle is equipped with airbags. See *Airbag System on page 3-15*. 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 frontal sensors that help the airbag system determine the severity of the impact. Deployment thresholds can vary with specific vehicle design.

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

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

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.

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

Seat-mounted side impact airbags are designed to inflate in moderate to severe side crashes, depending on the location of the impact.

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

A seat-mounted side impact airbag is designed to inflate on the side of the vehicle that is struck.

Roof-rail airbags, if equipped, are designed to inflate in moderate to severe side crashes, depending on the location of the impact. In addition, these roof-rail airbags are designed to inflate during a rollover or in a severe frontal impact.

Roof-rail airbags are not designed to inflate in rear impacts. Both roof-rail airbags will inflate when either side of the vehicle is struck 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?* on page 3-16.

## **How Does an Airbag Restrain?**

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

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

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

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

But airbags would not help in many types of collisions, primarily because the occupant's motion is not toward those airbags. See *When Should an Airbag Inflate?* on page 3-18.

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

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

After the frontal airbags and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realise an airbag inflated. Roof-rail airbags may still be at least partially inflated for some time after deployment. Some components of the airbag module may be hot for several minutes. For location of the airbags, see *Where Are the Airbags?* on page 3-16.

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 lights, and shut off the fuel system after the airbags inflate. The feature may also activate, without airbag inflation, after an event that exceeds a predetermined threshold.

You can lock the doors, and turn off the interior lamps and hazard warning lights by using the controls for those features.

### Warning

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

Use caution if attempting to restart the vehicle after a crash has occurred.

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

Additional windscreen breakage may also occur from the front 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 your vehicle covers the need to replace other parts.
- The vehicle has a crash sensing and diagnostic module which records information after a crash. See *Vehicle Data Recording and Privacy* on page 13-3.
- Let only qualified technicians work on the airbag systems. Improper service can mean that an airbag system will not work properly. See your dealer for service.

## Passenger Sensing System

The vehicle has a passenger sensing system for the front outboard passenger position. The passenger airbag status indicator will be visible 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 the symbol for off will be visible. See *Passenger Airbag Status Indicator* on page 5-13.

The passenger sensing system will turn off the front outboard passenger frontal airbag under

## 3-22 Seats and Restraints

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

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

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

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

Never put a rear-facing child 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 passenger frontal airbag inflates. This is because the back of the rear-facing child restraint would be very close to the inflating airbag. A child in a forward-facing child restraint can be seriously injured or killed if the passenger frontal airbag inflates and the passenger seat is in a forward position.

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

(Continued)

### Warning (Continued)

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

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

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

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

When the passenger sensing system has turned off the front outboard passenger frontal airbag, the off indicator will light and stay lit to remind you that the airbag is off. See *Passenger Airbag Status Indicator on page 5-13*.

The passenger sensing system is designed to turn on the front outboard passenger frontal airbag anytime the system senses that a person of adult size is sitting properly in the front outboard passenger seat. When the passenger sensing system has allowed the airbag to be enabled, the on indicator will light and stay lit to remind you that the airbag is active.

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

 **Warning**

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light on page 5-12* for more information, including important safety information.

**If the On Indicator is Lit for a Child Restraint**

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

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

## 3-24 Seats and Restraints

4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to *Securing Child Restraints (Rear Seat)* on page 3-39 or *Securing Child Restraints (Front Passenger Seat)* on page 3-41.
5. If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, turn the vehicle off. Then slightly recline the vehicle seatback and adjust the seat cushion, if adjustable, to make sure that the vehicle seatback is not pushing the child restraint into the seat cushion.

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

6. Restart the vehicle.

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

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



If a person of adult size is sitting in the front outboard passenger seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat. If this happens,

use the following steps to allow the system to detect that person and enable the front outboard passenger frontal airbag:

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

#### **Warning**

If the front outboard passenger airbag is turned off for an adult-sized occupant, the airbag

(Continued)

**Warning (Continued)**

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

**Additional Factors Affecting System Operation**

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

A thick layer of additional material, such as a blanket or cushion, or aftermarket equipment such as seat covers, seat heaters, and seat massagers can affect how well the passenger sensing system operates. We recommend that you not use seat covers or other aftermarket equipment except when approved by GM for your specific vehicle. See *Adding Equipment to the Airbag-Equipped Vehicle* on page 3-26 for more information about modifications that can affect how the system operates.

** Warning**

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

**Servicing the Airbag-Equipped Vehicle**

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

** Warning**

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

### Adding Equipment to the Airbag-Equipped Vehicle

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

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

In addition, the vehicle has a passenger sensing system for the front outboard passenger position, which includes sensors that are part of the passenger seat. The

passenger sensing system may not operate properly if the original seat trim is replaced with non-GM covers, upholstery, or trim; or with GM covers, upholstery, or trim designed for a different vehicle. Any object, such as an aftermarket seat heater or a comfort-enhancing pad or device, installed under or on top of the seat fabric, could also interfere with the operation of the passenger sensing system. This could either prevent proper deployment of the passenger airbag(s) or prevent the passenger sensing system from properly turning off the passenger airbag(s). See *Passenger Sensing System on page 3-21*.

If the vehicle has rollover roof-rail airbags, see *Different Size Tyres and Wheels on page 10-53* for additional important information.

If you have to modify your vehicle because you have a disability and you have questions about whether the modifications will affect the vehicle's airbag system, or if you

have questions about whether the airbag system will be affected if the vehicle is modified for any other reason, 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 on page 5-12*.

#### **Caution**

If an airbag covering is damaged, opened, or broken, the airbag may not work properly. Do not open or break the airbag coverings. If there are any opened or broken airbag coverings, have the airbag covering and/or airbag module replaced. For the location of the airbags, see *Where Are the Airbags? on page 3-16*. See your dealer for service.

## Replacing Airbag System Parts after a Crash

### Warning

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

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

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

### Warning

Safety procedures must always be observed when disposing of the vehicle or vehicle parts. Disposal should only be performed by an authorised service centre, to help protect the environment and your health.

## Child Restraints

### Older Children



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

## 3-28 Seats and Restraints

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.
- Fasten the lap-shoulder belt. Does the shoulder belt rest on the shoulder? If yes, continue. If no, try using the rear safety belt comfort guide, if available. See “Rear Safety Belt Comfort Guides” under *Lap-Shoulder Belt on page 3-9*. If a comfort guide is not available, or if the shoulder belt still does not rest on the shoulder, then return to the booster seat.
- Does the lap belt fit low and snug on the hips, touching the thighs? If yes, continue. If no, return to the booster seat.

- Can proper safety belt fit be maintained for the length of the trip? If yes, continue. If no, return to the booster seat.

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

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

Also see “Rear Safety Belt Comfort Guides” under *Lap-Shoulder Belt on page 3-9*.

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

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

 **Warning**

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



**⚠ Warning**

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

(Continued)

**Warning (Continued)**

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



**Infants and Young Children**

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

**⚠ Warning**

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

(Continued)

## 3-30 Seats and Restraints

### Warning (Continued)

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

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

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

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

### Warning

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



### Warning

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Never put a rear-facing child restraint in the front outboard seat. Secure a rear-facing child restraint in a rear seat. It is also better to secure a forward-facing child restraint in a rear seat. If you must secure a forward-facing child restraint in

(Continued)

**Warning (Continued)**

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



Selection of a particular restraint should take into consideration not only the child's weight, height, and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

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

The restraint manufacturer's instructions that come with the restraint state the weight and height limitations for a particular child restraint.

**⚠ Warning**

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

**⚠ Warning**

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

## Child Restraint Systems



### Rear-Facing Infant Seat

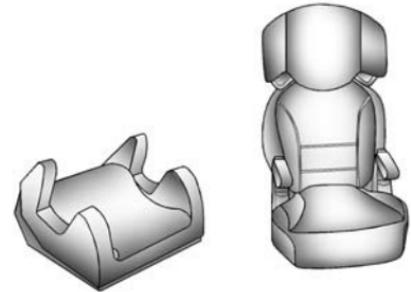
A rear-facing infant seat provides restraint with the seating surface against the back of the infant.

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



### Forward-Facing Child Seat

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



### Booster Seats

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

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

### Warning

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

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraint systems must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by the ISOFIX system. See *ISOFIX Child Restraint Systems* on page 3-39 for more information.

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

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

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

## Securing the Child within the Child Restraint

### Warning

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

## Where to Put the Restraint

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

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

## 3-34 Seats and Restraints

### Warning

Do not use a rearward facing child restraint on a seat protected by an airbag in front of it!

### Danger

When using a child restraint system on the front passenger seat, the airbag systems for the front passenger seat must be deactivated; if not, the triggering of the airbags poses a risk of fatal injury to the child.

This is especially the case if rear-facing child restraint systems are used on the front passenger seat.



DO NOT place rear-facing child seat on this seat. DEATH OR SERIOUS INJURY can occur. This is because the risk to the rear-facing child is so great, if the airbag deploys.

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

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

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

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

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

**Child Restraint Systems Installation Suitability - Coupe and Convertible**

| Mass Group               | Seating Positions |                     |                    |
|--------------------------|-------------------|---------------------|--------------------|
|                          | Front Passenger   | Rear Right Outboard | Rear Left Outboard |
| Group 0<br>Up to 10 kg   | X                 | U                   | U                  |
| Group 0 +<br>Up to 13 kg | X                 | U                   | U                  |
| Group I<br>9 to 18 kg    | X                 | U                   | U                  |
| Group II<br>15 to 25 kg  | X                 | U                   | U                  |
| Group III<br>22 to 36 kg | X                 | U                   | U                  |

U: Suitable for universal category restraints approved for use in this mass group.

X: Seat position not suitable for children in this mass group.

### 3-36 Seats and Restraints

#### ISOFIX Child Restraint Systems Installation Suitability - Coupe

| Mass Group                  | Class Size | Fixture | Vehicle ISOFIX Positions |                     |                      |
|-----------------------------|------------|---------|--------------------------|---------------------|----------------------|
|                             |            |         | Front Passenger          | Rear Left Passenger | Rear Right Passenger |
| Infant Carbed<br>(Carrycot) | F          | ISO/L1  | X                        | X                   | X                    |
|                             | G          | ISO/L2  | X                        | X                   | X                    |
| 0<br>(up to 10 kg)          | E          | ISO/R1  | X                        | IUF <sup>1</sup>    | IUF <sup>1</sup>     |
| 0+<br>(up to 13 kg)         | E          | ISO/R1  | X                        | IUF <sup>1</sup>    | IUF <sup>1</sup>     |
|                             | D          | ISO/R2  | X                        | IUF <sup>2</sup>    | IUF <sup>2</sup>     |
|                             | C          | ISO/R3  | X                        | X                   | X                    |
| I<br>(9 to 18 kg)           | D          | ISO/R2  | X                        | IUF <sup>2</sup>    | IUF <sup>2</sup>     |
|                             | C          | ISO/R3  | X                        | X                   | X                    |
|                             | B          | ISO/F2  | X                        | IUF                 | IUF                  |
|                             | B1         | ISO/F2X | X                        | IUF                 | IUF                  |
|                             | A          | ISO/F3  | X                        | X                   | X                    |

| Mass Group  | Class Size | Fixture | Vehicle ISOFIX Positions |                     |                      |
|---|------------|---------|--------------------------|---------------------|----------------------|
|   |            |         | Front Passenger          | Rear Left Passenger | Rear Right Passenger |
| IUF: Suitable for ISOFIX forward child restraint systems of universal category approved for use in this mass group.   |            |         |                          |                     |                      |
| X: ISOFIX position not suitable for ISOFIX child restraint systems in this mass group and/or size class.  |            |         |                          |                     |                      |
| 1: Seating position in front of ISOFIX position must be adjusted to 26 mm rearward of full forward seat travel.   |            |         |                          |                     |                      |
| 2: Seating position in front of ISOFIX position must be adjusted to full forward seat travel and seat back adjusted to 14.6° torso angle.   |            |         |                          |                     |                      |
| IL: Suitable for particular ISOFIX child restraint systems (CRS) given in the attached list. These ISOFIX CRS are those of the specific vehicle, restricted or semi-universal categories. |            |         |                          |                     |                      |

### 3-38 Seats and Restraints

#### ISOFIX Child Restraint Systems Installation Suitability - Convertible

| Mass Group                 | Class Size | Fixture | Vehicle ISOFIX Positions |                     |                      |
|----------------------------|------------|---------|--------------------------|---------------------|----------------------|
|                            |            |         | Front Passenger          | Rear Left Passenger | Rear Right Passenger |
| Infant Carbed<br>(Carycot) | F          | ISO/L1  | X                        | X                   | X                    |
|                            | G          | ISO/L2  | X                        | X                   | X                    |
| 0<br>(up to 10 kg)         | E          | ISO/R1  | X                        | IUF                 | IUF                  |
| 0+<br>(up to 13 kg)        | E          | ISO/R1  | X                        | IUF                 | IUF                  |
|                            | D          | ISO/R2  | X                        | X                   | X                    |
|                            | C          | ISO/R3  | X                        | X                   | X                    |
| I<br>(9 to 18 kg)          | D          | ISO/R2  | X                        | X                   | X                    |
|                            | C          | ISO/R3  | X                        | X                   | X                    |
|                            | B          | ISO/F2  | X                        | IUF                 | IUF                  |
|                            | B1         | ISO/F2X | X                        | IUF                 | IUF                  |
|                            | A          | ISO/F3  | X                        | IUF                 | IUF                  |

IUF: Suitable for ISOFIX forward child restraint systems of universal category approved for use in this mass group.

X: ISOFIX position not suitable for ISOFIX child restraint systems in this mass group and/or size class.

IL: Suitable for particular ISOFIX child restraint systems (CRS) given in the attached list. These ISOFIX CRS are those of the specific vehicle, restricted or semi-universal categories.

## ISOFIX Child Restraint Systems



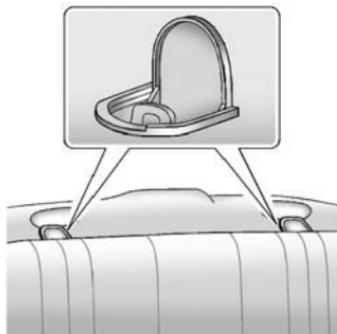
ISOFIX mounting brackets are marked by  on the seat back.

Fasten vehicle-approved ISOFIX child restraint systems to the ISOFIX mounting brackets.

Specific vehicle ISOFIX child restraint positions are marked in the “ISOFIX Child Restraint Systems Suitability” table. See *Where to Put the Restraint* on page 3-33.

No more than two ISOFIX child restraint systems can be installed on the rear seats at the same time, though not right next to each other.

### Top-Tether Fastening Eyes



#### Coupe

Convertible top models do not have top tether anchors to be used to secure a child restraint in any seating position.

Top-tether fastening eyes in the coupe are marked with  for a child seat.

In addition to the ISOFIX mounting, fasten the top-tether strap to the top-tether fastening eyes.

ISOFIX child restraint systems of universal category positions are marked in the “ISOFIX Child Restraint Systems Suitability” table by IUF. See *Where to Put the Restraint* on page 3-33.

### Securing Child Restraints (Rear Seat)

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

If the child restraint has the ISOFIX system, see *ISOFIX Child Restraint Systems* on page 3-39 for how and where to install the child restraint using ISOFIX. If a child restraint is secured in the vehicle using a safety belt and it uses a top tether, see *ISOFIX Child Restraint Systems* on page 3-39 for top tether anchor locations.

## 3-40 Seats and Restraints

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

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

If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint on page 3-33*.

1. Put the child restraint on the seat.
2. Pick up the latch plate, and run the lap and shoulder portions of the vehicle's safety belt through

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

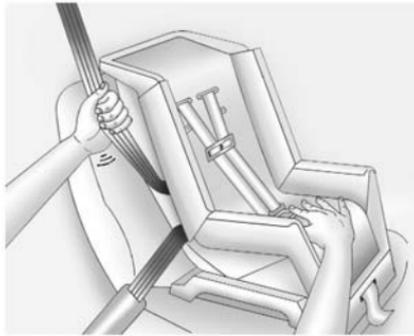


3. Push the latch plate into the buckle until it clicks.

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



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



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

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

6. If the child restraint has a top tether, follow the child restraint manufacturer's instructions regarding the use of the top tether. See *ISOFIX Child Restraint Systems* on page 3-39 for more information.
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, unfasten the vehicle safety belt and let it return to the stowed position. If the top tether is attached to a top tether anchor, disconnect it.

### Securing Child Restraints (Front Passenger Seat)

This vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See *Where to Put the Restraint* on page 3-33

In addition, the vehicle has a passenger sensing system which is designed to turn off the front outboard passenger frontal airbag under certain conditions. See *Passenger Sensing System* on page 3-21 and *Passenger Airbag Status Indicator* on page 5-13 for more information, including important safety information.

#### **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 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* on page 3-21 for additional information.

### Warning

When using a child restraint system on the front passenger seat, the airbag system for the front passenger seat must be deactivated. If not, the triggering of the airbags poses a risk of fatal injury to the child. This is especially the case if rear-facing child restraint systems are used on the front passenger seat.

### Warning

Do not use a rearward facing child restraint on a seat protected by an airbag in front of it!

If the child restraint uses a top tether, see *ISOFIX Child Restraint Systems* on page 3-39 for top tether anchor locations.

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

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

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

When the passenger sensing system has turned off the front outboard passenger frontal airbag, the off indicator on the passenger airbag status indicator should light and stay lit when the vehicle is started. See *Passenger Airbag Status Indicator* on page 5-13.

- Put the child restraint on the seat.

If the seat has a safety belt guide, remove the safety belt from the guide by unsnapping the guide on the seat. Do not secure the child restraint with the safety belt routed through the guide.

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



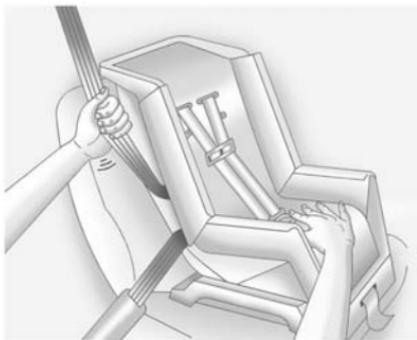
- Push the latch plate into the buckle until it clicks.  
Position the release button on the buckle, so that the safety belt could be quickly unbuckled if necessary.



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

## 3-44 Seats and Restraints

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

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

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

If a child restraint has been installed and the on indicator is lit, see “If the On Indicator is Lit for a Child Restraint” under *Passenger Sensing System* on page 3-21 for more information.

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

If the seat has a seat belt guide, return the seat belt into the guide by snapping the guide around the webbing.

## Storage

### Storage Compartments

|                              |     |
|------------------------------|-----|
| Glove Box .....              | 4-1 |
| Rear Storage .....           | 4-1 |
| Centre Console Storage ..... | 4-2 |

### Additional Storage Features

|                       |     |
|-----------------------|-----|
| Tonneau Cover .....   | 4-2 |
| Convenience Net ..... | 4-4 |

## Storage Compartments

### Glove Box

Open the glove box by lifting up the lever. Use the key to lock and unlock the glove box.

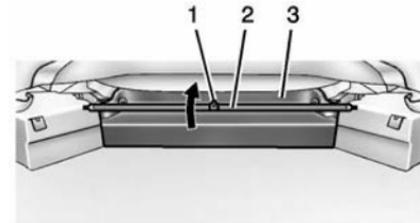
### Rear Storage

#### Rear Boot Partition

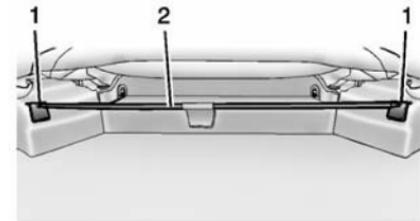
The boot partition keeps cargo away from the convertible top.

The boot partition attaches to the sides of the boot to protect the convertible top or can be rolled up and stored when the convertible top is up.

### Fastened Position



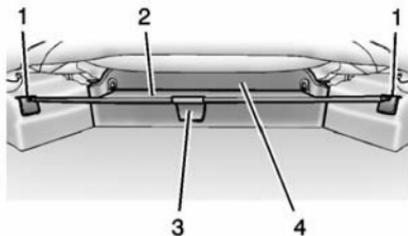
1. Pull on the handle (1) to detach and roll out the boot partition (2) at the front of the boot (3).



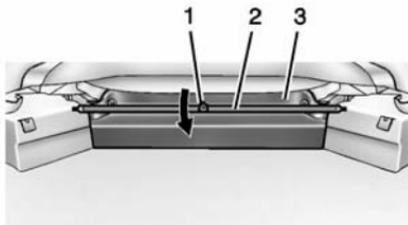
2. Attach the boot partition (2) into the brackets (1).
3. Remove any objects from the top of the boot partition (2).

## 4-2 Storage

### Stored Position



1. Pull the handle (3) toward the rear of the boot while pulling up to release the boot partition (2) from the brackets (1).
2. Hold the handle (3) and slowly let the boot partition (2) roll up toward the front of the boot (4).



3. Attach the handle (1) to the rolled-up boot partition (2) at the front of the boot (3).

See *Convertible Top Messages* on page 5-29.

### Centre Console Storage

To open, lift the latch on the front edge of the armrest.

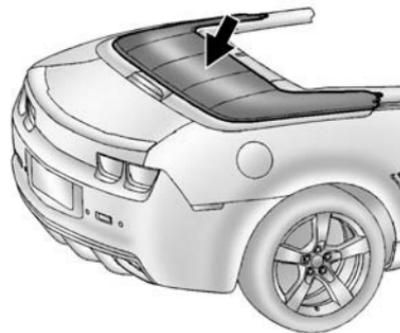
There is an accessory power outlet, a USB port, and an audio jack in the storage area. See *Power Outlets* on page 5-5. See "USB" in the infotainment manual.

## Additional Storage Features

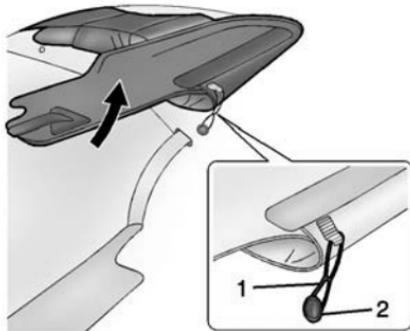
### Tonneau Cover

#### Installation

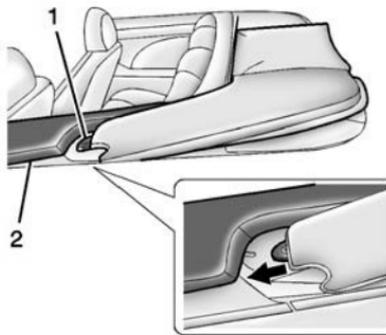
1. Remove the tonneau cover storage bag from the boot and remove the tonneau cover.



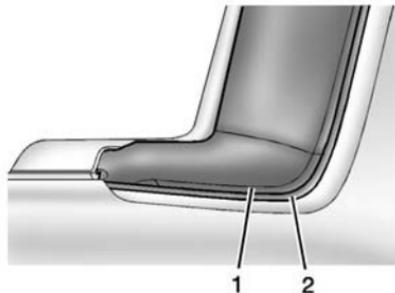
2. Unfold and place the tonneau cover on the vehicle.



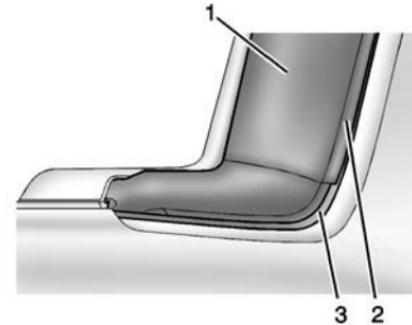
3. Fold the sides of the tonneau cover over. Attach the cord (1) at the front edge of the tonneau cover to the post (2) on the back seat rear panel on both sides.



4. Insert the tab (1) under the trim (2) on both sides.



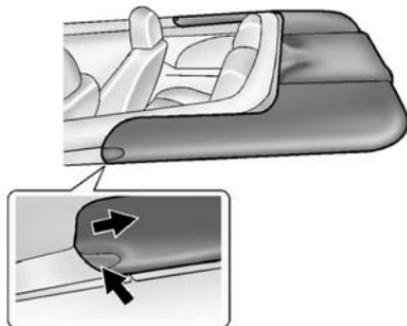
5. Push the outside rim (1) of the tonneau cover under the vehicle trim (2) on both sides.



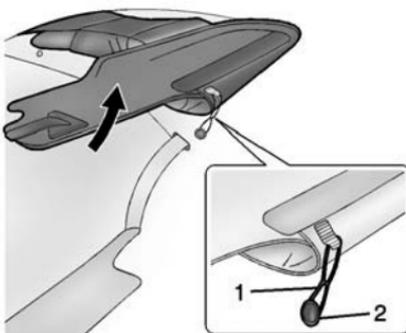
6. Push the edge (2) of the centre of the tonneau cover (1) under the vehicle trim (3).

## 4-4 Storage

### Removal



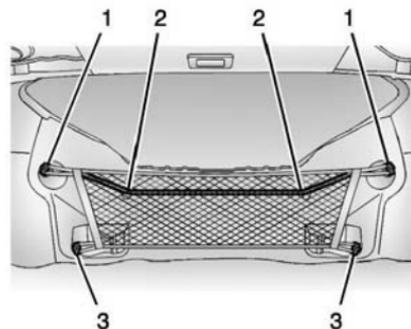
1. Grip the tonneau cover at the notch and pull back to release the tab on both sides.



2. Fold the sides of the tonneau cover over and remove the cord (1) from the post (2) on the back seat rear panel on both sides.
3. Fold the tonneau cover, place it in the storage bag, and store it in the boot.

### Convenience Net

For vehicles with a convenience net inside the boot, it can be used to secure loose items.



The upper (1) and lower (3) hooks on each side of the boot opening are provided to attach the net.

Install the opening of the net at the top and over the two middle hooks (2).

# Instruments and Controls

## Controls

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## 5-2 Instruments and Controls

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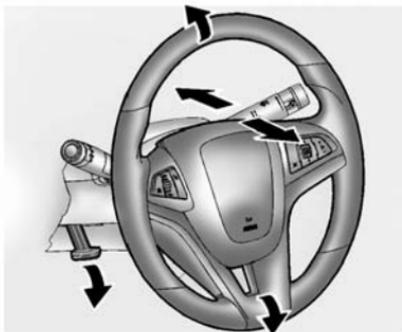
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### Vehicle Personalisation

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## Controls

### Steering Wheel Adjustment



To adjust the steering wheel:

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

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

Do not adjust the steering wheel while driving.

### Steering Wheel Controls

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

### Horn

Press  on the steering wheel pad to sound the horn.

## Windscreen Wiper/Washer



The windscreen wiper/washer lever is on the right side of the steering column. With the ignition in ACC/ACCESSORY or ON/RUN, move the windscreen wiper lever to select the wiper speed.

**HI:** Use for fast wipes.

**LO:** Use for slow wipes.



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

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

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

 **(Windscreen Washer):** Pull the windscreen wiper lever toward you to spray windscreen washer fluid and activate the wipers. The wipers will continue until the lever is released or the maximum wash time is reached. When the windscreen wiper lever is released, additional wipes may occur depending on how long the windscreen washer had been activated. See *Washer Fluid on page 10-23* for information on filling the windscreen washer fluid reservoir.

### Warning

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

Clear snow and ice from the wiper blades and windscreen before using them. If frozen to the windscreen, carefully loosen or thaw them. Damaged blades should be replaced. See *Wiper Blade Replacement on page 10-29*.

Heavy snow or ice can overload the wiper motor.

### Wiper Parking

If the ignition is turned to LOCK/OFF while the wipers are on LO, HI, or INT, they will immediately stop.

## 5-4 Instruments and Controls

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If the windscreen 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 windscreen.

If the ignition is turned to LOCK/OFF while the wipers are performing wipes due to windscreen washing, the wipers continue to run until they reach the base of the windscreen.

### Headlamp Washer

If equipped with headlamp washers, they are located to the side of the headlamps.

The headlamps must be on in order to use the headlamp washers. If the headlamps are not on, only the windscreen will be washed.

Pull the wiper lever toward you and hold briefly to activate. The headlamp washers will spray once, pause, and spray again. The headlamp washer will spray again after five windscreen wash cycles.

To refill the windscreen washer fluid, see *Washer Fluid* on page 10-23.

### Clock

The infotainment system controls are used to access the time and date settings through the menu system. The clock menu can only be used with the radio on while in ON/RUN or ACC/ACCESSORY.

#### Setting the Time and Date

1. Press the CONFIG button.
2. Select Time and Date Settings.
3. Select Set Time or Set Date.
4. Turn the MENU/SELECT knob to adjust the highlighted value.
5. Press the MENU/SELECT knob to select the next value.
6. To save the time or date and return to the Time and Date Settings menu, press the  BACK button at any time

or press the MENU/SELECT knob after adjusting the minutes or year.

#### Setting the 12/24 Hour Format

1. Press the CONFIG button.
2. Select Time and Date Settings.
3. Highlight 12/24 Hour Format.
4. Press the MENU/SELECT knob to select the 12 hour or 24 hour display format.

#### Setting the Month & Day Format

1. Press the CONFIG button.
2. Select Time and Date Settings.
3. Highlight Month & Day Format.
4. Press the MENU/SELECT knob to select MM/DD (month/day) or DD/MM (day/month).

## Power Sockets

The vehicle has two accessory power outlets; one is below the climate control system and the other is inside the centre console storage. They can be used to plug in electrical equipment, such as a mobile phone or an MP3 player.

The accessory power outlets do not work when the key is removed from the ignition and the driver door is opened. This helps to preserve the battery life of the vehicle.

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

When adding electrical equipment, ensure that you follow the proper installation instructions included with the equipment. See *Add-On Electrical Equipment on page 9-48*.

### 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 mobile phone charge cords.

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

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

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

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

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

## Instrument Cluster



### Speedometer

The speedometer shows the vehicle's speed in either kilometres per hour (km/h) or miles per hour (mph).

### Mileometer

The odometer shows how far the vehicle has been driven, in either kilometres or miles.

### Trip Odometer

The trip odometer shows how far the vehicle has been driven since the trip odometer was last reset.

The trip odometer is accessed and reset through the Driver Information Centre (DIC). See *Driver Information Centre (DIC)* on page 5-22.

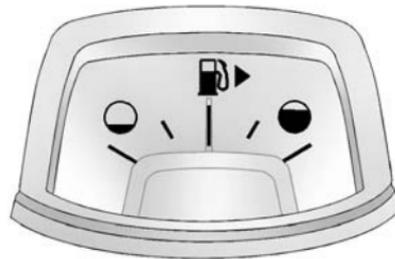
### Rev Counter

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

#### Caution

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

### Fuel Gauge



This gauge illuminates briefly when the vehicle is started.

When the ignition is on, the fuel gauge shows about how much fuel the vehicle has left in the fuel tank.

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

The gauge indicates empty and illuminates before the vehicle is out of fuel, to show that the vehicle's fuel tank should be filled soon.

When the fuel tank is low on fuel, a message appears on the Driver Information Centre (DIC). For more information see *Fuel System Messages on page 5-32*.

Here are some situations that can occur with the fuel gauge. None of these indicate a problem with the fuel gauge.

- At the gas station, the fuel pump shuts off before the gauge reads full.
- It takes a little more or less fuel to fill up than the fuel gauge indicated. For example, the gauge may have indicated the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.
- The pointer on the fuel gauge is on empty when the ignition is off.

## Engine Oil Pressure Gauge



For vehicles with the oil pressure gauge, it is located in front of the gear lever, and shows the engine oil pressure in kPa (kilopascals).

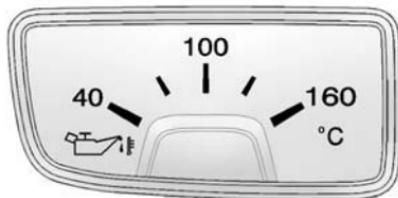
Oil pressure may vary with engine speed, outside temperature, and oil viscosity, but readings above the low pressure zone indicate the normal operating range. When the oil pressure reaches the low pressure zone, a message appears in the Driver Information Centre (DIC). See *Engine Oil Messages on page 5-31* and *Engine Oil on page 10-9*.

### Caution

Lack of proper engine oil maintenance can damage the engine. Driving with the engine oil low can also damage the engine. The repairs would not be covered by the vehicle warranty. Check the oil level as soon as possible. Add oil if required, but if the oil level is within the operating range and the oil pressure is still low, have the vehicle serviced. Always follow the maintenance schedule for changing engine oil.

A reading in the low pressure zone can be caused by a dangerously low oil level or some other problem causing low oil pressure. Check the oil as soon as possible.

### Engine Oil Temperature Gauge

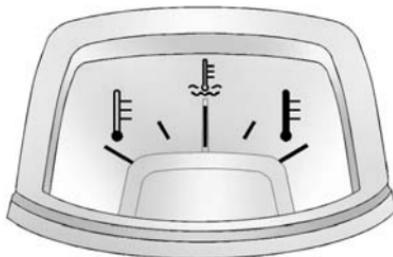


For vehicles with this gauge, it is located in front of the gear lever, and shows the engine oil temperature.

If the gauge pointer moves into the high end, it means that the engine oil has overheated. If the vehicle has been operated under normal driving conditions, pull off the road, stop the vehicle, and turn off the engine as soon as possible.

See *Engine Oil* on page 10-9 for more information.

### Engine Coolant Temperature Gauge

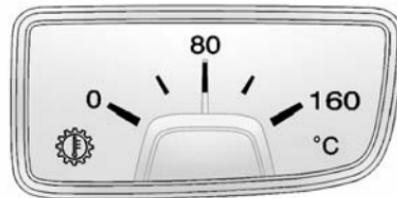


This gauge shows the engine coolant temperature.

If the gauge pointer moves toward the shaded icon, the engine is too hot.

This reading indicates the same thing as the warning message. It means that the engine coolant has overheated. If the vehicle has been operating under normal driving conditions, pull off the road, stop the vehicle, and turn off the engine as soon as possible. See *Engine Overheating* on page 10-21 for more information.

### Transmission Temperature Gauge



For vehicles with this gauge, it is located in front of the gear lever, and shows the transmission oil temperature when the ignition is on.

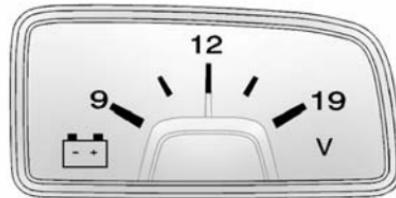
If the gauge is reading in the red area and/or a message appears in the DIC, the vehicle must be stopped and the cause checked. One possible cause is a low fluid level in the transmission.

For information on the DIC messages see *Transmission Messages* on page 5-35.

### **Caution**

Do not drive the vehicle while the transmission fluid is overheating, or the transmission can be damaged. This could lead to costly repairs that would not be covered by the warranty.

## Voltmeter Gauge



For vehicles with this gauge, it is located in front of the gear lever, and shows the battery's state of charge in DC volts.

When the engine is running, and the ignition is on, this gauge shows the condition of the charging system. The vehicle's charging system regulates voltage based on the state of charge of the battery. It is normal for the voltmeter to fluctuate. Readings between the low and high warning zones indicate the normal operating range.

Readings in the low warning zone can occur when a large number of electrical accessories are operating in the vehicle and the engine is left idling for an extended period.

If there is a problem with the battery charging system, a message appears in the Driver Information Centre (DIC) and/or the charging system light comes on. See *Battery Voltage and Charging Messages* on page 5-29 and *Charging System Light* on page 5-14 for more information.

However, readings in either warning zone can indicate a possible problem in the electrical system. Have the vehicle serviced as soon as possible.

### Seat Belt Reminders

#### Driver Safety Belt Reminder Light

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



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

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

#### Passenger Seat Belt Reminder Light

There is a passenger safety belt reminder light near the passenger airbag status indicator. See *Passenger Sensing System* on page 3-21.



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

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

The front passenger safety belt reminder light and chime may turn on if an object is put on the seat such as a briefcase, handbag, grocery bag, laptop, or other electronic device. To turn off the reminder light and/or chime, remove the object from the seat or buckle the safety belt.

#### Airbag Readiness Light

This light shows if there is an electrical problem with the airbag system. The system check includes the airbag sensor(s), passenger sensing system, the pretensioners, the airbag modules, the wiring, and the crash sensing and diagnostic module. For more information on the airbag system, see *Airbag System* on page 3-15.



The airbag readiness light comes on for several seconds when the vehicle is started. If the light does not come on then, have it fixed immediately.

### **Warning**

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

If there is a problem with the airbag system, a Driver Information Centre (DIC) message may also come on. See *Airbag System Messages on page 5-34*.

## Passenger Airbag Status Indicator

The vehicle has a passenger sensing system. See *Passenger Sensing System on page 3-21* 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. After several seconds, the status indicator will light either 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 passenger 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 retailer for service.

### **Warning**

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

(Continued)

### Warning (Continued)

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

### 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, the Driver Information Centre (DIC) also displays a message.

See *Battery Voltage and Charging Messages on page 5-29*.

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

### Malfunction Indicator Lamp

A computer system called OBD II (On-Board Diagnostics-Second Generation) monitors the operation of the vehicle to ensure emissions are at acceptable levels, helping to maintain a clean environment. The malfunction indicator lamp comes on when the vehicle is placed in

ON/RUN as a check to show it is working. If it does not, have the vehicle serviced by your dealer. See *Ignition Positions on page 9-13* for more information.



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

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

 **Caution**

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

 **Caution**

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

Modifications to these systems

(Continued)

**Caution (Continued)**

could lead to costly repairs not covered by the vehicle warranty. This could also result in a failure to pass a required Emission Inspection/Maintenance test. See *Accessories and Modifications on page 10-2*.

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

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

To prevent more serious damage to the vehicle:

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

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

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

The following may correct an emission control system malfunction:

- Check that the fuel cap is fully installed. See *Filling the Tank on page 9-41*. The diagnostic system can determine if the fuel cap has been left off or improperly installed. A loose or missing fuel cap allows fuel to evaporate into the atmosphere. A few driving trips with the cap properly installed should turn the light off.

## 5-16 Instruments and Controls

- Check that good quality fuel is used. Poor fuel quality causes the engine not to run as efficiently as designed and may cause stalling after start-up, stalling when the vehicle is changed into gear, misfiring, hesitation on acceleration, or stumbling on acceleration. These conditions might go away once the engine is warmed up.

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

See *Fuel* on page 9-40.

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

### Emissions Inspection and Maintenance Programs

Depending on where you live, your vehicle may be required to participate in an emission control system inspection and maintenance program. For the inspection, the emission system test equipment will likely connect to the vehicle's Data Link Connector (DLC).



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

The vehicle may not pass inspection if:

- The malfunction indicator lamp is on with the engine running, or if the light does not come on when

the ignition is turned to ON/RUN while the engine is off. See your dealer for assistance in verifying proper operation of the malfunction indicator lamp.

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

## Brake System Warning Light

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

If the warning light comes on, there is a brake problem. Have the brake system inspected immediately.



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

When the ignition is on, the brake system warning light also comes on when the parking brake is applied.

The light stays on if the handbrake does not fully release. If it stays on after the handbrake is fully released, it means the vehicle has a brake problem.

If, while driving, the light comes on and a brake message comes on the Driver Information Centre (DIC), pull off the road and stop carefully. The pedal could be harder to push or the pedal can go closer to the floor. It could take longer to stop. If the light is still on, have the vehicle towed for service. See *Antilock Brake System (ABS) Warning Light on page 5-17* and *Towing the Vehicle on page 10-74*.

### 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

(Continued)

### Warning (Continued)

the vehicle has been pulled off the road and carefully stopped, have the vehicle towed for service.

The Brake message remains on until the MENU button is pressed. The brake light remains until the problem is fixed. See *Brake System Messages on page 5-29* for more information.

## Antilock Brake System (ABS) Warning Light



This light comes on briefly when the engine is started.

If the light does not come on, have it fixed so it will be ready to warn if there is a problem.

If the light comes on while driving, stop as soon as it is safely possible and turn off the vehicle. Then start the engine again to reset the system. If the ABS light stays on, or comes on again while driving, the vehicle needs service. A chime may also sound when the light comes on steady.

If the ABS light is the only light on, the vehicle has regular brakes, but the anti-lock brakes are not functioning.

If both the ABS and the brake system warning light are on, the vehicle's anti-lock brakes are not functioning and there is a problem with the regular brakes. See your retailer for service.

See *Brake System Warning Light* on page 5-17 and *Brake System Messages* on page 5-29.

### Gear Shifting Light



This light comes on when an up-shift is recommended for best fuel economy. The number displayed with the arrow indicates the recommended gear.

### Traction Off Light



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

dealer. If the system is working normally, the indicator light then turns off.

The traction off light comes on when the Traction Control System (TCS) has been turned off by pressing and releasing the TCS/StabiliTrak button.

This light and the StabiliTrak OFF light come on when StabiliTrak is turned off.

If the TCS is off, wheel spin is not limited. Adjust driving accordingly.

See *Traction Control/Electronic Stability Control* on page 9-29.

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



This light comes on briefly when the engine is started.

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

If the light is on and not flashing, the TCS and potentially the StabiliTrak system have been disabled. A DIC message may display. Check the DIC messages to determine which feature(s) is no longer functioning and whether the vehicle requires service.

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

See *Traction Control/Electronic Stability Control* on page 9-29.

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



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

This light comes on when the StabiliTrak system is turned off. If the Traction Control System (TCS) is off, wheel spin is not limited. If the StabiliTrak system is off, the system

does not assist in controlling the vehicle. Turn on the TCS and the StabiliTrak system and the warning light turns off.

For SS models, if this light is on, the vehicle is in Competitive Mode. A warning also appears in the DIC for StabiliTrak Competitive Mode. See *Ride Control System Messages* on page 5-33.

See *Traction Control/Electronic Stability Control* on page 9-29.

## Tyre Pressure Light



For vehicles with the Tyre Pressure Monitor System (TPMS), this light comes on briefly when the engine is started. It provides information about tyre pressures and the TPMS.

### When the Light Is On Steady

This indicates that one or more of the tyres are significantly underinflated.

A Driver Information Centre (DIC) tyre pressure message may also display. See *Tyre Messages on page 5-34*. Stop as soon as possible, and inflate the tyres to the pressure value shown on the Tyre and Loading Information label. See *Tyre Pressure on page 10-42*.

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

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

### Engine Oil Pressure Light

#### Caution

Lack of proper engine oil maintenance can damage the engine. Driving with the engine oil low can also damage the engine. The repairs would not be covered by the vehicle warranty. Check the oil level as soon as possible. Add oil if required, but if the oil level is within the operating range and the oil pressure is still low, have the vehicle serviced. Always follow the maintenance schedule for changing engine oil.



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

If the light comes on and stays on, it means that oil is not flowing through the engine properly. The vehicle could be low on oil and might have some other system problem. See your dealer.

## Immobiliser Light



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

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

## Main-Beam On Light



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

See *Headlamp Main/Dipped-Beam Changer* on page 6-2 for more information.

## Front Fog Lamp Light



The front fog lamp light comes on when the fog lamps are in use.

The light goes out when the fog lamps are turned off. See *Front Fog Lamps* on page 6-5.

## Rear Fog Lamp Light



For vehicles with rear fog lamps, this light comes on when they are in use.

For more information see *Rear Fog Lamps* on page 6-5.

### Tail lamp Indicator Light



This light comes on when the tail lamps are in use.

### 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.

The light goes out when the cruise control is turned off. See *Cruise Control* on page 9-33.

## Information Displays

### Driver Information Centre (DIC)

The DIC displays information about your vehicle. It also displays warning messages if a system problem is detected. See *Vehicle Messages* on page 5-28. All messages appear in the DIC display in the centre of the instrument cluster.

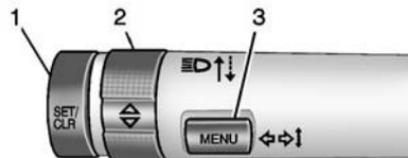
The vehicle may also have features that can be customised through the controls on the radio. See *Vehicle Personalisation* on page 5-36.

### DIC Operation and Displays

The DIC has different displays which can be accessed by using the DIC buttons on the indicator stalk on the left side of the steering wheel. The DIC displays trip, fuel, vehicle system information, and warning messages if a system problem is detected.

The bottom of the DIC display shows what position the gear lever is in and the odometer.

### DIC Buttons



1. **SET/CLR:** Use this button to set or clear the menu item when it is displayed.
2. **△ / ▽ (Thumbwheel)** Use the thumbwheel to scroll through the items in each menu.
3. **MENU:** Press this button to get to the Trip/Fuel Menu and the Vehicle Information Menu.

### **Trip/Fuel Menu Items**

Press the MENU button on the indicator stalk until Trip/Fuel Information Menu is displayed. Use the thumbwheel to scroll through the following menu items:

- Digital Speedometer
- Trip 1
- Trip 2
- Fuel Range
- Average Fuel Consumption
- Average Vehicle Speed

### **Digital Speedometer**

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

### **Trip 1 and Trip 2**

The Trip display shows the current distance travelled, in either kilometres (km) or miles (mi), since the last reset for the trip odometer. The trip odometer can be reset to

zero by pressing the trip reset stem or the SET button while the trip odometer display is showing.

### **Fuel Range**

The Fuel Range display shows the approximate distance the vehicle can be driven without refuelling. The fuel range estimate is based on an average of the vehicle's fuel economy over recent driving history and the amount of fuel remaining in the fuel tank. Fuel range cannot be reset.

### **Average Fuel Consumption**

The Average Fuel Consumption display shows the approximate average litres per 100 kilometres (L/100 km) or miles per gallon (mpg). This number is calculated based on the number of L/100 km (mpg) recorded since the last time this menu item was reset. This number reflects only the approximate average fuel consumption that the vehicle has right now, and will change as driving conditions change.

The fuel consumption can be reset by pressing the SET button while the Average Fuel Consumption display is showing.

### **Average Vehicle Speed**

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

### **Vehicle Information Menu Items**

Press the MENU button on the indicator stalk until Vehicle Information Menu is displayed. Use the thumbwheel to scroll through the following menu items:

- Unit
- Tyre Pressure

## 5-24 Instruments and Controls

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- Remaining Oil Life
- Coolant Temp
- Battery Voltage
- Speed Warning

### Unit

Move the thumbwheel up or down to switch between Metric or US when the Unit display is active. Press SET to confirm the setting. This will change the displays on the cluster and DIC to either metric or English (US) measurements.

### Tyre Pressure

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

### Remaining Oil Life

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

When the remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. See *Engine Oil Messages on page 5-31*. The oil should be changed as soon as possible. See *Engine Oil on page 10-9*. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended in the Maintenance Schedule. See *Scheduled Maintenance on page 11-1*.

Remember, the Oil Life display must be reset after each oil change. It will not reset itself. Also, be careful not to reset the Oil Life display accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the

engine oil life system press the SET button while the Oil Life display is active. See *Engine Oil Life System on page 10-11*.

### Coolant Temperature

This display shows the temperature of the engine cooling system fluid in either degrees Celsius (°C) or degrees Fahrenheit (°F).

### Battery Voltage

This display, available on some vehicles, shows the current battery voltage. If the voltage is in the normal range, the value will display. For example, the display may read Battery Voltage 15.0 Volts. The vehicle's charging system regulates voltage based on the state of the battery. The battery voltage can fluctuate while viewing this information on the DIC. This is normal. See *Charging System Light on page 5-14*. If there is a problem with the battery charging system, the DIC will display a message. See *Battery Voltage and Charging Messages on page 5-29*.

## Speed Warning

Speed Warning allows the driver to set a speed that they do not want to exceed. To set the Speed Warning press SET when Speed Warning is displayed.

## 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 the HUD, some information concerning the operation of the vehicle is projected onto the windscreen. This includes, but is not limited to, the speedometer reading, rpm reading,

transmission position, outside air temperature and a brief display of the current radio station, or CD track. The images are projected through the HUD lens located on the driver side of the instrument panel.

### 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 tap shift gear will also appear on the HUD if the vehicle has tap shift and it is active.

The language of the HUD information displayed can be changed. 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 selection is changed through the trip computer in the Driver Information Centre (DIC). See *Vehicle Personalisation* on page 5-36 and *Driver Information Centre (DIC)* on page 5-22.



### HUD Display on the Vehicle Windscreen

The HUD information appears as an image focused out toward the front of the vehicle.

## 5-26 Instruments and Controls

When the ignition key is turned to ON/RUN, the HUD will display when ready.

The following indicator lights come on the instrument panel when activated and also appear on the HUD:

- Direction Indicators
- Main-Beam Indicator Symbol

The HUD also temporarily displays the following messages on vehicles with these systems, when they are active:

- Check Tyre Pressure
- Cruise Set To
- Fuel Level Low
- Speed Limited To
- Traction Control Active
- Stabilitrak Active
- Park Distance Unavailable
- Gap Alert Off

When the HUD is on, the speedometer reading is continually displayed. The current radio station or CD track information will display for a short period of time after the radio or CD track status changes. This happens whenever radio information is changed. The speedometer size is reduced when radio, CD track information, or warnings are displayed on the HUD.

When the phone feature is activated, the HUD will briefly display phone information, if available.



The HUD control is located to the right of the steering wheel.

To adjust the HUD image so that items are properly displayed:

1. Adjust the driver seat to a comfortable position.
2. Start the engine.
3. Adjust the HUD controls.

Use the following settings to adjust the HUD.

**OFF:** Turn the HUD dimming knob fully anti-clockwise until the HUD display turns off.

**Brightness:** Turn the dimming knob clockwise or anticlockwise to brighten or dim the display. The HUD image will automatically dim and brighten to compensate for outside lighting. The HUD brightness control can also be adjusted as needed.

The HUD image can temporarily light up depending on the angle and position of the sunlight on the HUD display. This is normal. Polarised sunglasses could make the HUD image harder to see.

^ (Up): v (Down): Press the up or down arrows to centre the HUD image in your view. The HUD image can only be adjusted up and down, not side to side.

**PAGE:** Press and release to select between the different display formats until the desired display is shown on the HUD. If vehicle messages are displayed, pressing PAGE may clear the message.

The four formats are as follows:



**Format One:** This display gives the speedometer reading (in English or metric units), indicator signal indication, main beam indication, transmission positions, speed alert, and outside air temperature.



**Format Two:** This display includes the information in Format One without the transmission information, speed alert, and the outside air temperature.



**Format Three:** This display includes the information in Format One along with a circular tachometer, but without outside air temperature.



**Format Four:** This display gives the speedometer reading (in English or metric units), transmission positions (for automatic transmission vehicles only), Shift Timing Light Position and lateral acceleration (G) indicators.

The radio, CD, and phone information do not appear in the format four HUD display.

The shift timing lights at the top of the display will appear with increase in engine rpm. See *Automatic Transmission on page 9-21* or *Manual Gearbox on page 9-25* for more information.

### Care of the HUD

Clean the inside of the windscreen as needed 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.

### If You Cannot See the HUD Image When the Ignition Is On

Check that:

- Nothing is covering the HUD lens.
- HUD brightness is not too dim or too bright.
- HUD is adjusted to the proper height.
- Polarised sunglasses are not worn.
- Windscreen and HUD lens are clean.

If the HUD image is not correct, contact your dealer.

When overheated HUD turns off for about 5 minutes.

The windscreen is part of the HUD system. See *Windscreen Replacement on page 10-30*.

### Vehicle Messages

Messages are displayed on the DIC to notify the driver that the status of the vehicle has changed and that some action may be needed by the driver to correct the condition. Multiple messages may appear one after another.

Some messages may not require immediate action. For those you can press SET to acknowledge that you received the messages and to clear them. Some messages cannot be cleared because they are more urgent. These messages require action. You should take any messages that appear on the display seriously and remember that clearing the messages will only make the messages disappear, not correct the problem. Possible messages that can be displayed and some information about them, grouped by subject, are in the following information.

## Battery Voltage and Charging Messages

### BATTERY SAVER ACTIVE

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

### LOW BATTERY

This message is displayed when the battery voltage is low. See *Battery* on page 10-26.

### SERVICE BATTERY CHARGING SYSTEM

This message is displayed when there is a fault in the battery charging system. Take the vehicle to your dealer for service.

## Brake System Messages

### BRAKE FLUID LOW

This message is displayed when the brake fluid level is low; see *Brake Fluid* on page 10-25.

### HILL START ASSIST ACTIVE

This message is displayed when Hill Start Assist (HSA) is preventing the vehicle from rolling while driving off on a grade. See *Hill Start Assist (HSA)* on page 9-29.

### RELEASE PARKING BRAKE

This message is displayed as a reminder that the handbrake is on. Release it before you attempt to drive.

## Convertible Top Messages

### BATTERY VOLTAGE TOO LOW – TOP DISABLED

This message displays when the battery voltage is too low to operate the convertible top.

### EXTEND CARGO SHADE TO OPERATE

This message displays if the rear boot partition is not extended and engaged.

### CLOSE BOOT TO OPERATE TOP

This message displays if the boot is open while you are trying to operate the convertible top. Make sure the boot is closed before operating the convertible top. See *Convertible Top* on page 2-18.

### **COMPLETE TOP MOTION TO OPEN BOOT**

This message displays if attempting to open the boot before the top has been fully opened or closed.

### **REDUCE VEHICLE SPEED TO OPERATE TOP**

This message is displayed when the vehicle is moving too fast to safely operate the convertible top. Reduce the vehicle speed.

### **TEMPERATURE TOO LOW – TOP DISABLED**

This message displays and a sound will be heard when the power convertible top button is pressed and the power convertible top pump motor temperature is below 0°C (32°F). Wait for the power convertible top pump motor to warm up before using the power convertible top.

### **TOP NOT SECURE**

This message displays when the power convertible top is closed without the convertible top front catch engaged or when the folding top is not fully stowed. Press and hold the convertible top button in the open direction until a beep is heard or close the top and engage the catch.

### **TOP SYSTEM OVERHEATED, PLEASE WAIT**

This message displays and a sound will be heard when the power convertible top button is pressed and the power convertible top pump motor is overheated. Wait for the power convertible top pump motor to cool down before using the power convertible top.

### **UNLATCH TOP**

This message displays and a sound will be heard if you try to lower the convertible top without first releasing the front catch. See *Convertible Top on page 2-18*.

## **Cruise Control Messages**

### **CRUISE SET TO XXX**

This message displays when the cruise control is set and shows the speed it was set to. See *Cruise Control on page 9-33*.

## **Door Ajar Messages**

### **DRIVER DOOR OPEN**

This message will display when the driver door is open. Close the door completely.

### **BONNET OPEN**

This message will display when the bonnet is open. Close the bonnet completely.

### **PASSENGER DOOR OPEN**

This message will display when the passenger door is open. Close the door completely.

## BOOT OPEN

This message will display when the boot is open. Close the boot completely.

## Engine Cooling System Messages

### A/C OFF DUE TO HIGH ENGINE TEMP

This message displays when the engine coolant becomes hotter than the normal operating temperature. To avoid added strain on a hot engine, the air conditioning compressor automatically turns off. When the coolant temperature returns to normal, the air conditioning compressor turns back on. You can continue to drive the vehicle.

If this message continues to appear, have the system repaired by your dealer as soon as possible to avoid damage to the engine.

### COOLANT LEVEL LOW ADD COOLANT

This message will display if the coolant is low. See *Engine Coolant on page 10-16*.

### ENGINE OVERHEATED — IDLE ENGINE

This message displays when the engine coolant temperature is too hot. Stop and allow the vehicle to idle until it cools down.

### ENGINE OVERHEATED — STOP ENGINE

This message displays and a continuous chime sounds if the engine cooling system reaches unsafe temperatures for operation. Stop and turn off the vehicle as soon as it is safe to do so to avoid severe damage. This message clears when the engine has cooled to a safe operating temperature.

## Engine Oil Messages

### CHANGE ENGINE OIL SOON

This message displays when the engine oil needs to be changed. When you change the engine oil, be sure to reset the Oil Life System. See *Engine Oil Life System on page 10-11* and *Driver Information Centre (DIC) on page 5-22* for information on how to reset the system. See *Engine Oil on page 10-9* and *Scheduled Maintenance on page 11-1*.

### ENGINE OIL HOT, IDLE ENGINE

This message displays when the engine oil temperature is too hot. Stop and allow the vehicle to idle until it cools down.

### ENGINE OIL LOW — ADD OIL

On some vehicles, this message displays when the engine oil level may be too low. Check the oil level before filling to the recommended level. If the oil is not low and this

message remains on, take the vehicle to your dealer for service. See *Engine Oil on page 10-9*.

### **OIL PRESSURE LOW — STOP ENGINE**

This message displays if low oil pressure levels occur. Stop the vehicle as soon as safely possible and do not operate it until the cause of the low oil pressure has been corrected. Check the oil as soon as possible and have the vehicle serviced by your dealer.

### **Engine Power Messages**

#### **ENGINE POWER IS REDUCED**

This message displays when the vehicle's engine power is reduced. Reduced engine power can affect the vehicle's ability to accelerate. If this message is on, but there is no reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven at a reduced

speed while this message is on, but maximum acceleration and speed may be reduced. Anytime this message stays on, the vehicle should be taken to your dealer for service as soon as possible.

### **Fuel System Messages**

#### **FUEL LEVEL LOW**

This message displays when the vehicle is low on fuel. Refuel as soon as possible.

#### **TIGHTEN FUEL CAP**

This message displays when the fuel cap is not on tight. Tighten the fuel cap.

### **Key and Lock Messages**

#### **NUMBER OF KEYS PROGRAMMED**

This message displays when programming new keys to the vehicle.

### **REPLACE BATTERY IN REMOTE KEY**

This message displays when the battery in the Remote Keyless Entry (RKE) transmitter needs to be replaced.

### **Lamp Messages**

#### **AUTOMATIC LIGHT CONTROL ON**

This message is displayed when the automatic light control has been turned on. See *Automatic Headlamp System on page 6-3*.

#### **AUTOMATIC LIGHT CONTROL OFF**

This message is displayed when the automatic light control has been turned off. See *Automatic Headlamp System on page 6-3*.

**CHECK LEFT FRONT INDICATOR LAMP**

This message is displayed if the indicator bulb needs to be replaced. See *Front Indicator and Parking Lamps on page 10-31* and *Replacement Bulbs on page 10-32* for more information.

**CHECK LEFT REAR INDICATOR LAMP**

This message is displayed if the indicator bulb needs to be replaced. See *Bulb Replacement on page 10-30* for more information.

**CHECK RIGHT FRONT INDICATOR LAMP**

This message is displayed if the indicator bulb needs to be replaced. See *Front Indicator and Parking Lamps on page 10-31* and *Replacement Bulbs on page 10-32* for more information.

**CHECK RIGHT REAR INDICATOR LAMP**

This message is displayed if the indicator bulb needs to be replaced. See *Bulb Replacement on page 10-30* for more information.

**INDICATOR ON**

This message is displayed if the indicator has been left on. Turn off the indicator.

**Object Detection System Messages****PARK ASSIST OFF**

This message displays when the Rear Parking Assist (RPA) system has been turned off or when there is a temporary condition causing the system to be disabled. See *Parking Assist on page 9-36*.

**SERVICE PARK ASSIST**

This message displays if there is a problem with the Rear Parking Assist (RPA) system. Do not use this system to help you park. See *Parking Assist on page 9-36*.

**Ride Control System Messages****ESP COMPETITIVE MODE**

This message displays when Competitive Mode is selected. See *Competitive Driving Mode on page 9-31* for more information.

**SERVICE TRACTION CONTROL**

This message displays when there is a problem with the Traction Control System (TCS). When this message is displayed, the system will not limit wheel spin. Adjust your driving accordingly. See your retailer for service.

### SERVICE ESP

This message displays if there is a problem with the StabiliTrak<sup>®</sup> system. If this message appears, try to reset the system. Stop; turn off the engine and remove the key from the ignition; open and close the driver door and wait for at least one minute. During this time you should notice the lights on the cluster turn off. After a minute has passed start the engine again. If this message still comes on, it means there is a problem. See your retailer for service. The vehicle is safe to drive; however, you do not have the benefit of StabiliTrak, so reduce your speed and drive accordingly.

### Airbag System Messages

#### SERVICE AIRBAG

This message displays if there is a problem with the airbag system. Take the vehicle to your dealer for service.

### Security Messages

#### THEFT ATTEMPTED

This message displays if the vehicle detects a tamper condition.

### Service Vehicle Messages

#### SERVICE POWER STEERING

This message is displayed if there is a problem with the power steering system and a chime may sound. Take the vehicle to your dealer for service.

#### SERVICE VEHICLE SOON

This message is displayed if there is a problem with the vehicle. Take the vehicle to your dealer for service.

### Tyre Messages

#### TYRE PRESSURE LOW ADD AIR TO TYRE

This message displays if the vehicle detects low pressure in one or more tyres.

This message also displays LEFT FRONT, RIGHT FRONT, LEFT REAR, or RIGHT REAR to indicate the location of the low tyre.

The low tyre pressure warning light will also come on. See *Tyre Pressure Light* on page 5-19.

If a tyre pressure message appears on the DIC, stop as soon as you can. Inflate the tyres by adding air until the tyre pressure is equal to the values shown on the Tyre and Loading Information label. See *Tyres* on page 10-40, *Vehicle Load Limits* on page 9-10, and *Tyre Pressure* on page 10-42.

The DIC also shows the tyre pressure values. See *Driver Information Centre (DIC)* on page 5-22.

## **SERVICE TYRE MONITOR SYSTEM**

This message displays if there is a problem with the Tyre Pressure Monitor System (TPMS). See *Tyre Pressure Monitor Operation on page 10-45*.

## **TYRE LEARNING ACTIVE**

This message displays when the system is learning new tyres. See *Tyre Pressure Monitor Operation on page 10-45*.

## **Transmission Messages**

### **PRESS CLUTCH TO START**

This message displays when attempting to start a vehicle with a manual gearbox without pressing on the clutch pedal.

### **SERVICE TRANSMISSION**

This message displays if there is a problem with the transmission. See your dealer.

## **SHIFT DENIED**

This message displays when attempting to use the automatic transmission manual mode to shift to too low a gear. See *Manual Mode on page 9-24*.

## **SHIFT TO PARK**

This message displays when the transmission needs to be shifted to P (Park). This may appear when attempting to remove the key from the ignition if the vehicle is not in P (Park).

## **TRANSMISSION HOT – IDLE ENGINE**

This message displays and a chime sounds if the transmission fluid in the vehicle gets hot. Driving with the transmission fluid temperature high can cause damage to the vehicle. Stop the vehicle and let it idle to allow the transmission to cool. This message clears when the fluid temperature reaches a safe level.

## **Vehicle Reminder Messages**

### **ICE POSSIBLE DRIVE WITH CARE**

This message is displayed when ice conditions are possible.

### **TURN WIPER CONTROL TO INTERMITTENT FIRST**

This message is displayed when attempting to adjust the intermittent wiper speed without intermittent selected on the wiper control. See *Windscreen Wiper/Washer on page 5-3*.

## **Vehicle Speed Messages**

### **DRIVER SELECTED SPEED LIMIT EXCEEDED**

This message is displayed when the vehicle speed is greater than the set speed. See “Speed Warning” under *Driver Information Centre (DIC) on page 5-22*.

### Window Messages

#### OPEN, THEN CLOSE DRIVER/ PASSENGER WINDOW

This message is displayed when the window needs to be reprogrammed. If the vehicle's battery has been recharged or disconnected, you will need to program each front window for the express-up feature to work. See *Power Windows on page 2-15*.

### Vehicle Personalisation

Use the audio system controls to access the personalisation menus for customising vehicle features.

The following are all possible personalisation features. Depending on the vehicle, some may not be available.

#### Infotainment System Audio System Controls

##### Using the Faceplate

##### MENU/SELECT Knob

- Press to enter, select, or activate a highlighted menu option.
- Turn to highlight a menu option.
- Press to enable or disable a system setting.

##### ↩ **BACK**

- Press to exit a menu.
- Press to return to a previous screen.

### Using the Touch Screen

Press a screen feature to:

- View more feature options.
- Enable or disable the feature.

△ : Press to scroll up.

▽ : Press to scroll down.

**Back:** Press to return to the previous menu.

To access the personalisation menu:

1. Press Config on the Home page on the infotainment system display or CONFIG on the faceplate.
2. Select the desired feature to display a list of available options.
3. Select the desired feature setting.

## Personalisation Menus

The following list of menu items may be available:

- Languages
- Time and Date
- Radio Settings
- Phone Settings
- Navigation Settings
- Display Settings
- Vehicle Settings

Each menu is detailed in the following information.

### Languages

Select Languages, then select from the available language(s).

### Time and Date

Manually set the time and date. See *Clock on page 5-4*.

## Radio Settings

Select and the following may display:

- Auto Volume
- Gracenote Options
- Startup Volume
- Number of Favourites Pages
- Software Versions Menu

### Auto Volume

This feature adjusts the volume to minimise the effects of unwanted background noise that can result from changing road surfaces, driving speeds, or open windows. This feature works best at lower volume settings where background noise is typically louder than the sound system volume.

Select Off, Low, Medium, or High.

### Gracenote Options

Select and the following may display:

- Normalisation

## Normalisation

This feature improves voice recognition and media groupings. See “CD Player,” “USB,” “Auxiliary Devices,” and “Bluetooth Audio” in the infotainment manual.

Select to enable or disable.

### Startup Volume

This feature sets the maximum startup volume. If the vehicle is started and the volume is greater than this level, the volume is adjusted to this level.

Press + or - to increase or decrease the volume.

### Number of Favourites Pages

Press to set the number of favourites to display.

Select the desired number.

### Software Versions Menu

Press to display information about the system and update software if available.

### Phone Settings

Select and the following may display:

- Device list
- Pair device

### Device list

Select to connect to a different phone source, disconnect a phone, or delete a phone.

### Pair device

Select to pair a new device. See “Pairing a Phone/Device” in “Bluetooth” in the infotainment manual.

### Navigation Settings

See “Navigation Settings” in “Configure Menu” in the infotainment manual.

### Display Settings

Press and the following may display:

- Home Page Menu
- Rear Camera Options
- Display Off
- Map Settings

### Home Page Menu

Select and the following may display:

- Customise
- Sort
- Restore Home Page Defaults

### Customise

This feature allows the selection of what icons will be on the first Home Page.

Select and follow the screen prompts.

### Sort

This feature allows the icons on the Home Page to be moved.

Select and follow the screen prompts.

### Restore Home Page Defaults

This feature will restore the Home Page to the factory settings.

Select and follow the screen prompts.

### Rear Camera Options

For more information on Rear Camera Options, see *Rear Vision Camera (RVC) on page 9-37*.

### Display Off

Press to turn the display off. The display will return when any radio buttons are pressed or the screen is touched (if equipped).

### Map Settings

See “Map Settings” in “Configure Menu” in the infotainment manual.

## Vehicle Settings

Select and the following may display:

- Climate and Air Quality
- Comfort and Convenience
- Collision Detection Systems
- Lighting
- Power Door Locks
- Remote Lock/Unlock/Start
- Return to Factory Settings?

## Climate and Air Quality

Select and the following may display:

- Remote Start Auto Heat Seat

## Remote Start Auto Heat Seat

When on, this feature will turn the heated seats on when using remote start. See *Heated Front Seats on page 3-5*.

Select On or Off.

## Comfort and Convenience

Select and the following may display:

- Chime Volume
- Personalisation by Driver

## Chime Volume

This allows the selection of the chime volume level to be changed.

Select Normal or High.

## Personalisation by Driver

If equipped, this allows the selection of the personalisation settings that are specific to each driver or the same no matter which key was used to enter and start the vehicle.

Select On or Off.

## Collision Detection Systems

Select the following may display:

- Park Assist

## Park Assist

This allows the Parking Assist feature to be turned on or off.

Select On or Off.

## Lighting

Select and the following may display:

- Vehicle Locator Lights
- Exit Lighting

## Vehicle Locator Lights

This allows the feature to be turned on or off. When on, the headlamps, parking lamps, taillamps, and number plate lamps will illuminate at night when  is pressed on the RKE transmitter.

Select to enable or disable.

### Exit Lighting

This allows the selection of how long the exterior lamps stay on when leaving the vehicle and it is dark outside.

Select OFF, 30 seconds, 1 minute, or 2 minutes.

### Power Door Locks

Select and the following may display:

- Unlocked Door Anti Lock Out
- Auto Door Lock
- Delayed Door Lock

### Unlocked Door Anti Lock Out

When on, this feature will keep the driver's door from locking when the door is open. If off is selected, the Delayed Door Lock menu will be available.

Select On or Off.

### Auto Door Lock

When on, the doors will automatically lock when the vehicle is shifted out of P (Park) for an automatic transmission or when the vehicle first exceeds 13 km/h (8 mph) for a manual gearbox.

Select On or Off.

### Delayed Door Lock

When on, this feature will delay the locking of the doors. To override the delay, press the power door lock switch on the instrument panel. If equipped, there are also power door lock switches on the door panels.

Select to enable or disable.

### Remote Lock/Unlock/Start

Select and the following may display:

- Door Unlock Options

### Door Unlock Options

This allows selection of which doors will unlock when pressing  on the RKE transmitter.

Select Driver Door or All Doors.

### Return to Factory Settings?

This returns all of the vehicle personalisation settings to the factory settings.

Select Yes or No.

# Lighting

## Exterior Lighting

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# Exterior Lighting

## Exterior Lamp Controls



The exterior lamp control is on the instrument panel, on the outboard side of the steering wheel.

There are four positions:

**OFF:** Briefly turn to this position to turn the automatic light control off or on again. When released, the control returns to the AUTO position.

**AUTO (Automatic):** Automatically turns on the headlamps, position lamps, taillamps, number plate lamps, and instrument panel lights.

## 6-2 Lighting

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 (**Position Lamps**): Turns on the position lamps together with the taillamps, number plate lamps, and instrument panel lights.

A warning chime sounds if the driver door is opened when the ignition switch is off and the lamps are on.

 (**Headlamps**): Turns on the headlamps together with the position lamps, taillamps, number plate lamps, and instrument panel lights.

A warning chime sounds if the driver door is opened when the ignition switch is off and the headlamps are on.

 (**Front Fog Lamps**): Press to turn the front fog lamps on or off.

 (**Rear Fog Lamps**): Press to turn the rear fog lamps on or off.

See *Front Fog Lamps* on page 6-5 or *Rear Fog Lamps* on page 6-5.

### Headlamp Main/ Dipped-Beam Changer

Push the indicator lever away from you and release to turn the main beams on. To return to dipped beams, push the stalk 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

The flash-to-pass feature works with the low beams or Daytime Running Lamps (DRL) on or off.

To flash the main beams, pull the indicator lever all the way toward you, then release it.

### Daytime Running Lamps (DRL)

Daytime Running Lamps (DRL) can make it easier for others to see the front of your vehicle during the day.

A light sensor on top of the instrument panel makes the DRL work, so be sure it is not covered.

The DRL lamps will come on when the following conditions are met:

- The ignition is in the ON/RUN position.
- The exterior lamp control is in AUTO, or has been briefly turned to OFF to turn the automatic light control on again.
- The engine is running.

When the DRL are on, the headlamps, tail lamps, side markers, instrument panel, and other lamps will not be on.

The headlamps automatically change from DRL to the regular headlamps depending on the

darkness of the surroundings. The other lamps that come on with the headlamps will also come on.

When it is bright enough outside, the headlamps will switch off and the DRL will come on.

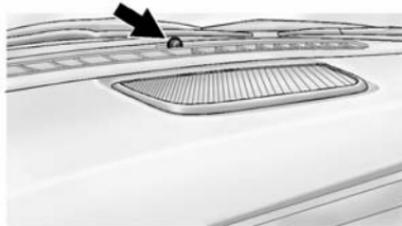
To disable the DRL, turn the exterior lamp control to the  or  position.

The regular headlamp system should be turned on when needed.

## Automatic Headlamp System

When it is dark enough outside and the exterior lamp control is in AUTO, the automatic headlamp system will turn on the headlamps at the normal brightness along with other lamps such as the tail lamps, sidemarker, parking lamps, number plate lamps, and the instrument panel lights. The radio lights will also be dim.

To turn off the automatic headlamp system, turn the exterior lamp control to the off position and then release.



The vehicle has a light sensor on the top of the instrument panel. Do not cover this sensor or the system will come on whenever the ignition is on.

The system may also turn on the headlamps when driving through a parking garage, heavy overcast weather, or a tunnel. This is normal.

There is a delay in the transition between the daytime and nighttime operation of the Daytime Running Lamps (DRL) and the automatic headlamp systems so that driving

under bridges or bright overhead street lights does not affect the system. The DRL and automatic headlamp system will only be affected when the light sensor sees a change in lighting lasting longer than the delay.

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 will be a slight delay before the automatic headlamp system changes to the DRL. During that delay, the instrument cluster may not be as bright as usual. Make sure the instrument panel brightness control is in the full bright position. See *Instrument Panel Illumination Control on page 6-6*.

## Lights On with Wipers

If the windscreen 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

## 6-4 Lighting

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.

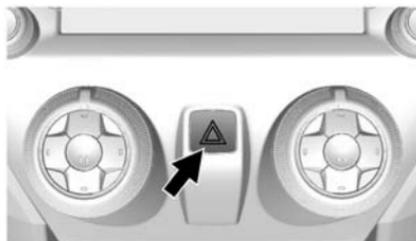
### Headlamp Levelling Control

#### Automatic Headlamp Levelling

The headlamp levelling system is controlled automatically, depending on the load the vehicle is carrying.

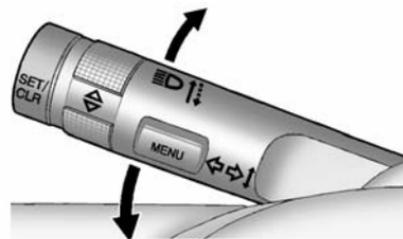
Headlamp aim is important to safe driving. If the headlights require aiming or the automatic headlight levelling system is malfunctioning, see your dealer for service.

### Hazard Lights



 **(Hazard Warning Flasher):** Press this button to make the front and rear indicator lamps flash on and off. This warns others that you are having trouble. Press again to turn the flashers off.

### 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 indicator flashes three times.

The stalk returns to its starting position whenever it is released.

If after signalling a turn or lane change the arrow flashes rapidly or does not come on, a signal bulb may be burned out.

Have any burned out bulbs replaced. If a bulb is not burned out, check the fuse. See *Electrical System Overload* on page 10-32.

## Front Fog Lamps



The front fog lamps button is on the exterior lamp control, on the outboard side of the steering wheel.

The ignition must be turned to ON/RUN to turn on the fog lamps.

**(Front Fog Lamps):** Press to turn the fog lamps on or off. An indicator light on the instrument cluster comes on when the fog lamps are on.

The fog lamps come on together with the parking and sidemarker lamps.

With High Intensity Discharge (HID) headlamps, the Daytime Running Lamps (DRL) replace the fog lamps.

Some localities have laws that require the headlamps to be on along with the fog lamps.

## Rear Fog Lamps



The rear fog lamp button is on the exterior lamp control on the outboard side of the steering wheel.

The ignition and the headlamps must be on to turn the rear fog lamp on.

**(Rear Fog Lamps):** Press to turn the rear fog lamp on or off.

There is an indicator light in the instrument cluster that illuminates when the rear fog lamp is on.

### Interior Lighting

#### Instrument Panel Illumination Control



This feature controls the brightness of the instrument panel lights.

 **(Instrument Panel Brightness):** Move the thumbwheel up or down and hold, to brighten or dim the instrument panel lights.

### Dome Lamps



To change the settings, press the following:

 **(Off):** Turns the lamp off, even when a door is open.

 **(Door):** Turns the lamp on automatically when a door is opened.

 **(On):** Turns the lamp on.

### Lighting Features

#### Entry Lighting

When it is dark enough outside or in areas of limited lighting, the interior lamps, headlamps, and parking lamps come on when  is pressed on the Remote Keyless Entry (RKE) transmitter. The lamps inside the vehicle come on when any door is opened. They stay on for about 20 seconds. When all of the doors have been closed or the ignition is turned to ON/RUN, they gradually fade out.

This feature can be changed. See "Vehicle Locator Lights" under *Vehicle Personalisation* on page 5-36.

## Exit Lighting

The headlamps, tail lamps, parking lamps, outside mirror lamps, and number plate lamps come on when the following is performed:

1. Remove the key from the ignition.
2. Open the driver door.
3. Pull the indicator lever and release.
4. Close the driver door.

The exit lighting turns off immediately if the indicator lever is pulled again with the driver door open.

The dome lamp comes on after the ignition is changed to the OFF position. The exterior lamps and interior light remain on for a set amount of time, then automatically turn off.

The exterior lamps turn off immediately by turning the exterior lamp control off.

This feature can be changed. See *Vehicle Personalisation on page 5-36*.

## Theatre Dimming

This feature allows for a three to five second fade out of the courtesy lamps instead of having them turn off immediately.

## Battery Load Management

The vehicle has Electric Power Management (EPM) that estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly bring the charge back up. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. If the vehicle has a voltmeter gauge or a voltage display on the Driver Information Centre (DIC), you may see the

voltage move up or down. This is normal. If there is a problem, an alert will be displayed.

The battery can be discharged at idle if the electrical loads are very high. This is true for all vehicles. This is because the generator (alternator) may not be spinning fast enough at idle to produce all of the power needed for very high electrical loads.

A high electrical load occurs when several of the following are on, such as: headlamps, main beams, rear window demister, climate control fan at high speed, heated seats, engine cooling fans, trailer loads, and loads plugged into accessory power outlets.

EPM works to prevent excessive discharge of the battery. It does this by balancing the generator's output and the vehicle's electrical needs. It can increase engine idle speed to generate more power whenever

## 6-8 Lighting

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needed. It can temporarily reduce the power demands of some accessories.

Normally, these actions occur in steps or levels, without being noticeable. In rare cases at the highest levels of corrective action, this action may be noticeable to the driver. If so, a DIC message might be displayed, such as BATTERY SAVER ACTIVE, BATTERY VOLTAGE LOW, or LOW BATTERY. If one of these messages displays, it is recommended that the driver reduce the electrical loads as much as possible. See *Driver Information Centre (DIC)* on page 5-22.

### **Battery Power Protection**

This feature shuts off the interior lamp if it is left on for more than 10 minutes when the ignition is in LOCK/OFF. This helps to prevent the battery from running down.

# Infotainment System

## Introduction

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## Introduction

### Infotainment

See the infotainment manual for information on the radio and available features.



## Climate Controls

### Climate Control Systems

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### Air Vents

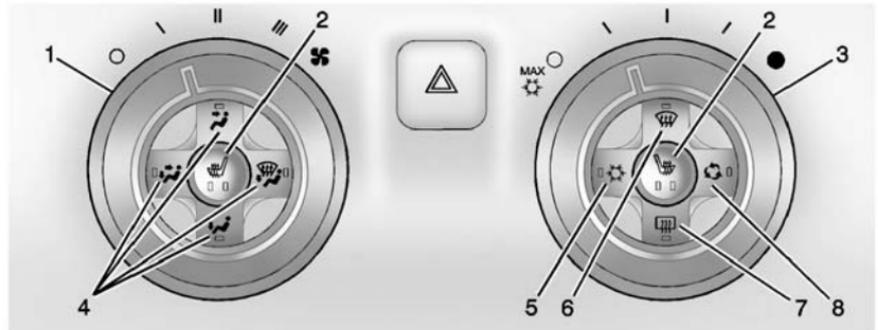
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## Climate Control Systems

The heating, cooling, defrosting, and ventilation for the vehicle can be controlled with this system.



1. Fan Control
2. Heated Seats (If Equipped)
3. Temperature Control
4. Air Delivery Mode Controls
5. Air Conditioning

6. Defrost
7. Rear Window Demister
8. Recirculation

**☪ (Fan Control):** Turn to increase or decrease the fan speed. Turn the knob to O to turn the fan off.

## 8-2 Climate Controls

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**Temperature Control:** Turn to increase or decrease the temperature inside the vehicle. Maximum cooling occurs when the temperature knob is turned to MAX  and the air conditioning system is turned on and air is recirculated inside the vehicle.

**Air Delivery Mode Control:** To change the current mode, press one of the following:

 **(Vent):** Air is directed to the instrument panel outlets.

 **(Bi-Level):** Air is directed to the instrument panel outlets and the floor outlets.

 **(Floor):** Air is directed to the floor outlets.

 **(Demist):** Clears the windows of mist or moisture. Air is directed to the windshield and floor outlets.

 **(Defrost):** Clears the windshield of mist or frost more quickly. Air is directed to the windshield and side window outlets.

For best results, clear all snow and ice from the windshield before defrosting.

Do not drive the vehicle until all windows are clear.

### Air Conditioning

 **(Air Conditioning):** Press to turn the air conditioning on or off. An indicator light turns on. If the fan is turned off or the outside temperature falls below freezing, the air conditioning will not work.

The air conditioning might automatically come on when  is selected.

 **(Recirculation):** Press to turn on the recirculation. An indicator light comes on. Air is recirculated inside the vehicle. It helps to quickly cool the air inside the vehicle and reduce the outside air and odours that may enter.

Operation in the recirculation mode while the air conditioner is off increases humidity and may cause the windows to mist.

Recirculation is not available in the defrost or demist modes.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather. The recirculation light will not come on. Press the  to select recirculation; press it again to select outside air.

### Rear Window Demister

 **(Rear Demister):** Press to turn the rear window demister on or off. An indicator light on the button comes on to show that the rear window demister is on. The demister turns off if the ignition is turned to ACC/ACCESSORY or LOCK/OFF.

Do not drive the vehicle until all windows are clear.

 **Caution**

Do not use a razor blade or sharp object to clear the inside rear window. Do not adhere anything to the demister grid lines in the rear glass. These actions may damage the rear demister. Repairs would not be covered by the vehicle warranty.

 **(Heated Seats, If Equipped):** Press to turn on or off. See *Heated Front Seats* on page 3-5.

## Air Vents

Use the air outlets in the centre and on the side of the instrument panel to direct the airflow. Use the thumbwheels near the centre air outlets to direct airflow to the left or right.

### Operation Tips

- In demist or defrost mode, warm air flows from some air outlets. To improve side window demisting or defrosting, direct side air outlets toward the side windows.

- Clear away any ice, snow, or leaves from air inlets at the base of the windscreen that could block the flow of air into the vehicle.
- Keep the path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.
- Use of non-GM approved bonnet air flow deflectors can adversely affect the performance of the system. Check with your dealer before adding equipment to the outside of the vehicle.

### Maintenance

#### Passenger Compartment Air Filter

The passenger compartment air filter removes most of the pollen and dust from the air that enters the vehicle. The filter will need to be replaced periodically. See *Scheduled Maintenance on page 11-1*.

Using the climate control system without an air filter is not recommended. Water or other debris could enter the system and result in leaks or noises. Always install a new filter when removing the old filter.

For more information, see your dealer.

# Driving and Operating

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### Driving Information

#### Defensive Driving

Defensive driving means "always expect the unexpected." The first step in driving defensively is to wear the safety belt. See *Safety Belts on page 3-7*.

- Assume that other road users (pedestrians, bicyclists, and other drivers) are going to be careless and make mistakes. Anticipate what they might do and be ready.
- Allow enough following distance between you and the driver in front of you.
- Focus on the task of driving.

#### Control of a Vehicle

Braking, steering, and accelerating are important factors in helping to control a vehicle while driving.

#### Braking

Braking action involves perception time and reaction time. Deciding to push the brake pedal is perception time. Actually doing it is reaction time.

Average driver reaction time is about three-quarters of a second. In that time, a vehicle moving at 100 km/h (60 mph) travels 20 m (66 ft), which could be a lot of distance in an emergency.

Helpful braking tips to keep in mind include:

- Keep enough distance between you and the vehicle in front of you.
- Avoid needless heavy braking.
- Keep pace with traffic.

If the engine ever stops while the vehicle is being driven, brake normally but do not pump the brakes. Doing so could make the pedal harder to push down. If the engine stops, there will be some

power brake assist but it will be used when the brake is applied. Once the power assist is used up, it can take longer to stop and the brake pedal will be harder to push.

#### Steering

##### Electric Power Steering

If the vehicle has electric power steering, it does not have power steering fluid. Regular maintenance is not required.

If power steering assist is lost due to a system malfunction, the vehicle can be steered, but may require increased effort. See your dealer if there is a problem.

If the steering wheel is turned until it reaches the end of its travel, and is held against that position for an extended period of time, power steering assistance may be reduced.

If the steering assistance is used for an extended period of time, power assistance may be reduced.

Normal use of the power steering assist should return when the system cools down.

See specific vehicle steering messages under *Vehicle Messages* on page 5-28.

### Hydraulic Power Steering

If the vehicle has hydraulic power steering, it may require maintenance. See *Power Steering Fluid (SS models)* on page 10-22 or *Power Steering Fluid (non-SS model)* on page 10-22.

If power steering assist is lost because the engine stops or because of a system malfunction, the vehicle can be steered but may require increased effort.

See your dealer if there is a problem.

### Caution

If the steering wheel is turned until it reaches the end of its travel, and is held in that position for more than 15 seconds, damage may occur to the power steering system and there may be loss of power steering assist.

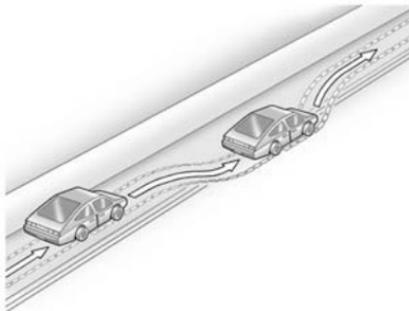
### Bend Tips

- Take bends at a reasonable speed.
- Reduce speed before entering a bend.
- Maintain a reasonable steady speed through the bend.
- Wait until the vehicle is out of the bend before accelerating gently into the straight.

### 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 tyre 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 bend causes tyres 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 recognise 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 tyres to slide.

Remember: Antilock brakes help avoid only the braking skid.

## Track Events and Competitive Driving

Track events and competitive driving may affect the vehicle warranty. See the warranty manual before using the vehicle for racing or other competitive driving.

The new vehicle run-in must be performed before the vehicle is used for competitive driving. See *New Vehicle Run-In* on page 9-12.

### Engine Oil

#### Caution

If you use the vehicle for racing or other competitive driving, the engine may use more oil than it would with normal use. Low oil levels can damage the engine. For information on how to add oil, see *Engine Oil* on page 10-9.

(Continued)

#### Caution (Continued)

Be sure to check the oil level often during racing or other competitive driving and keep the level at or near the upper mark that shows the proper operating range on the engine oil dipstick.

For track events and competitive driving, it is recommended that the brake fluid be replaced with a high performance brake fluid that has a dry boiling point greater than 279°C (534°F). After conversion to the high performance brake fluid, follow the brake fluid service recommendations outlined by the fluid manufacturer. Do not use silicone or DOT-5 brake fluids.

For track use only, it is recommended that the oil control kit be installed to prevent excessive oil consumption. This kit is available through your dealer.

#### Caution

Extended track operation without this kit installed may result in a low oil level and could result in engine damage.

### Rear Axle

The rear axle fluid temperatures may be higher than when driving in severe conditions. Drain and refill with new fluid after the first racing or competitive driving event, and then after every 24 hours of racing or competitive driving. See *Recommended Fluids and Lubricants* on page 11-4.

#### Caution

During a first time track or racing event, high rear axle temperatures can occur. Damage could be caused to the rear axle and would not be covered by the

(Continued)

### Caution (Continued)

vehicle warranty. Do not drive as long or as fast the first time the vehicle is driven on the track or raced.

Regularly inspect the drive shaft/prop. shaft couplings and half shaft boots for cracking or grease leakage. It is not recommended that the vehicle be used for ongoing race track/competitive driving.

For extended track use, GM recommends installing a rear differential cooler to protect the rear axle.

### 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.

### Aquaplaning

Aquaplaning is dangerous. Water can build up under the vehicle's tyres 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 aquaplaning, it has little or no contact with the road.

There is no hard and fast rule about aquaplaning. 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.
- Overtake with caution.
- Keep windscreen wiping equipment in good condition.
- Keep the windscreen washer fluid reservoir filled.

- Have good tyres with proper tread depth. See *Tyres on page 10-40*.
- Turn off cruise control.

## Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips for driving in these conditions include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, tyres, 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  
(Continued)

### Warning (Continued)

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. Always have the engine running and the vehicle in gear.

- Stay in your own lane. Do not swing wide or cut across the centre of the road. Drive at speeds that let you stay in your own lane.
- Be alert on top of hills; something could be in your lane (stalled car, accident).

- Pay attention to special road signs (falling rocks area, winding roads, long grades, overtaking or no-overtaking zones) and take appropriate action.

## Winter Driving

### Driving on Snow or Ice

Drive carefully when there is snow or ice between the tyres and the road, creating less traction or grip. Wet ice can occur at about 0°C (32°F) when freezing rain begins to fall, resulting in even less traction. Avoid driving on wet ice or in freezing rain until roads can be treated with salt or sand.

Drive with caution, whatever the condition. Accelerate gently so traction is not lost. Accelerating too quickly causes the wheels to spin and makes the surface under the tyres slick, so there is even less traction.

## 9-8 Driving and Operating

If equipped, Traction Control should be turned on. See *Traction Control/Electronic Stability Control* on page 9-29.

The *Antilock Brake System (ABS)* on page 9-27 improves vehicle stability during hard stops on slippery roads, but apply the brakes sooner than when on dry pavement.

Allow greater following distance on any slippery road and watch for slippery spots. Icy patches can occur on otherwise clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering manoeuvres and braking while on ice.

Turn off cruise control on slippery surfaces.

### Blizzard Conditions

Being stuck in snow can be a serious situation. Stay with the vehicle unless there is help nearby. To get help and keep everyone in the vehicle safe:

- Turn on the hazard warning lights.
- 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.

(Continued)

#### **Warning (Continued)**

If the vehicle is stuck in the snow:

- Clear away snow from around the base of your vehicle, especially any that is blocking the exhaust pipe.
- Check again from time to time to be sure snow does not collect there.
- Open a window about 5 cm (2 in) on the side of the vehicle that is away from the wind to bring in fresh air.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to a setting that circulates the air inside the vehicle and set the fan speed to the highest setting. See “Climate Control Systems.”

(Continued)

**Warning (Continued)**

For more information about carbon monoxide, see *Engine Exhaust* on page 9-20.

To save fuel, run the engine for only short periods as needed to warm the vehicle and then shut the engine off and close the window most of the way to save heat. Repeat this until help arrives but only when you feel really uncomfortable from the cold. Moving about to keep warm also helps.

If it takes some time for help to arrive, now and then when you run the engine, push the accelerator pedal slightly so the engine runs faster than the idle speed. This keeps the battery charged to restart the vehicle and to signal for help with the headlamps. Do this as little as possible to save fuel.

**If the Vehicle Is Stuck**

Slowly and cautiously spin the wheels to free the vehicle when stuck in sand, mud, ice, or snow.

If stuck too severely for the traction system to free the vehicle, turn the traction system off and use the rocking method. See *Traction Control/Electronic Stability Control* on page 9-29.

** Warning**

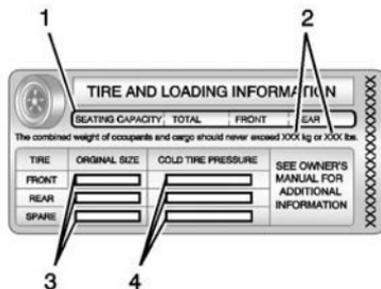
If the vehicle's tyres spin at high speed, they can explode, and you or others could be injured. The vehicle can overheat, causing an engine compartment fire or other damage. Spin the wheels as little as possible and avoid going above 56 km/h (35 mph).

**Rocking the Vehicle to Get it Out**

Turn the steering wheel left and right to clear the area around the front wheels. Turn off any traction system. Shift back and forth between R (Reverse) and a low forward gear, spinning the wheels as little as possible. To prevent transmission wear, wait until the wheels stop spinning before shifting gears. Release the accelerator pedal while shifting, and press lightly on the accelerator pedal when the transmission is in gear. Slowly spinning the wheels in the forward and reverse directions causes a rocking motion that could free the vehicle. If that does not get the vehicle out after a few tries, it might need to be towed out. If the vehicle does need to be towed out, see *Towing the Vehicle* on page 10-74.

### Vehicle Load Limits

#### Tyre and Loading Information Label



#### Label Example

The Tyre and Loading Information label shows the tyre size of the original equipment tyres (3) and the recommended cold tyre inflation pressures (4). For more information on tyres and inflation see *Tyres* on page 10-40 and *Tyre Pressure* on page 10-42.

This label is located near the door lock mechanism on the rear frame of the left front door. The Tyre and Loading Information label shows the number of occupant seating positions (1), and the maximum vehicle capacity weight (2) in kilograms and pounds.

Do not exceed the maximum vehicle capacity when loading the vehicle.

See "Certification Label" for additional loading information.

#### Certification Label

A vehicle specific Certification label is located below the door lock mechanism on the rear frame of the left door or the rear edge of the left front door. The label tells the gross weight

capacity of the vehicle, called the Gross Vehicle Weight Rating (GVWR). The GVWR includes the weight of the vehicle, all occupants, fuel, and cargo. Never exceed the GVWR for the vehicle or the Gross Axle Weight Rating (GAWR) for either the front or rear axle.

This vehicle may have two certification labels: one U.S. label and one European label. Be sure to reference the European label for information.

Using heavier suspension components for extra durability may not change the weight rating. Ask your dealer to help you load the vehicle correctly.

**Maximum Front and Rear Axle Weights**

The label also shows the maximum weight the front axle can carry (front Gross Axle Weight Rating) and the maximum weight the rear axle can carry (rear Gross Axle Weight Rating).

The weight of the cargo load must be properly distributed over both the front and rear axles.

If you are unsure of the vehicle's front, rear or total weight, weigh the vehicle at a weigh station. Your dealer can assist with this.

Never exceed the Gross Vehicle Weight Rating or the Gross Axle Weight Ratings.

 **Warning**

Things inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. In the cargo area, put them as far forward as possible. Try to spread the weight evenly.
- Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.

(Continued)

**Warning (Continued)**

- Do not leave an unsecured child restraint in the vehicle.
- Secure loose items in the vehicle.
- Do not leave a seat folded down unless needed.

### Starting and Operating

#### New Vehicle Run-In

 **Caution**

Follow these recommended guidelines during the first 2 414 km (1 500 mi) of driving this vehicle. Parts have a running-in period and performance will be better in the long run.

- For the first 2 414 km (1 500 mi):
- Avoid full throttle starts and abrupt stops.
- Do not exceed 4000 engine rpm.
- Avoid driving at any one constant speed, fast or slow.
- Do not drive above 129 km/h (80 mph).

(Continued)

#### Caution (Continued)

- Avoid downshifting to brake or slow the vehicle when the engine speed will exceed 4,000 rpm.
- Do not let the engine labour. Never lug the engine in high gear at low speeds. With a manual gearbox, shift to the next lower gear. This rule applies at all times, not just during the running-in period.
- Do not participate in racing events, sport driving schools, or similar activities during this running-in period.
- Check engine oil with every refuelling and add if necessary. Oil and fuel consumption may be higher than normal during the first 2 414 km (1 500 mi).

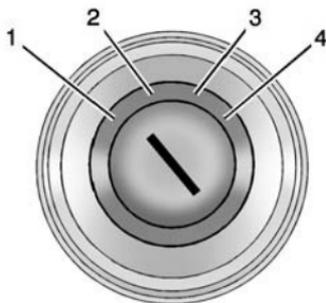
(Continued)

#### Caution (Continued)

- To run in new tyres, drive at moderate speeds and avoid hard cornering for the first 322 km (200 mi). New tyres do not have maximum traction and may tend to slip.
- New brake linings also need a running-in period. Avoid braking hard during the first 322 km (200 mi). This is recommended every time brake linings are replaced.
- Should the vehicle be used for racing or competitive driving (after run-in), the rear axle lubricant must be replaced beforehand.

See *Track Events and Competitive Driving on page 9-5.*

## Ignition Positions



The ignition switch has four different positions.

### Caution

Using a tool to force the key to turn in the ignition could cause damage to the switch or break the key. Use the correct key, make sure it is all the way in, and turn it only with your hand. If the key cannot be turned by hand, see your dealer.

The key must be fully extended to start the vehicle.

To shift out of P (Park), turn the ignition to ON/RUN and apply the brake pedal.

**1 (STOPPING THE ENGINE/LOCK/OFF):** When the vehicle is stopped, turn the ignition switch to LOCK/OFF to turn the engine off. Retained Accessory Power (RAP) will remain active. See *Retained Accessory Power (RAP)* on page 9-16.

This is the only position from which the key can be removed. This locks the steering wheel, ignition, and automatic transmission.

On vehicles with an automatic transmission, the shift lever must be in P (Park) to turn the ignition switch to the LOCK/OFF position.

Do not turn the engine off when the vehicle is moving. This will cause a loss of power assist in the brake and steering systems and disable the airbags.

The ignition switch can bind in the LOCK/OFF position with the wheels turned off centre. If this happens, move the steering wheel from right to left while turning the key to ACC/ACCESSORY. If this does not work, then the vehicle needs service.

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 neutral. This can be done while the vehicle is moving. After shifting to neutral, continue to firmly apply the brakes and steer the vehicle to a safe location.
3. Come to a complete stop. Shift to P (Park) with an automatic transmission or Neutral with a manual gearbox. Turn the ignition to LOCK/OFF.

## 9-14 Driving and Operating

4. Apply the parking brake. See *Parking Brake on page 9-28*.

### Warning

Turning off the vehicle while moving may cause loss of power assistance in the brake and steering systems and disable the airbags. While driving, only shut the vehicle off in an emergency.

If the vehicle cannot be pulled over, and must be shut off while driving, turn the ignition to ACC/ACCESSORY.

**2 (ACC/ACCESSORY):** This position provides power to some of the electrical accessories. It unlocks the steering wheel and ignition. To move the key from ACC/ACCESSORY to LOCK/OFF, push in the key and then turn it to LOCK/OFF.

**3 (ON/RUN):** The ignition switch stays in this position when the engine is running. This position can be used to operate the electrical accessories, including the ventilation fan and 12-volt power outlet, as well as to display some warning and indicator lights. This position can also be used for service and diagnostics, and to verify the proper operation of the malfunction indicator lamp as may be required for emission inspection purposes. The transmission is also unlocked in this position on automatic transmission vehicles.

The battery could be drained if the key is left in the ACC/ACCESSORY or ON/RUN position with the engine off. The vehicle might not start if the battery is allowed to drain for an extended period of time.

**4 (START):** This position starts the engine. When the engine starts, release the key. The ignition switch will return to ON/RUN for normal driving.

A warning tone sounds when the driver door is opened if the ignition is still in ACC/ACCESSORY and the key is in the ignition. If the ignition becomes difficult to turn, see *Keys on page 2-1*.

## Starting the Engine

Place the transmission in the proper gear.

### Caution

If you add electrical parts or accessories, you could change the way the engine operates. Any resulting damage would not be covered by the vehicle warranty. See *Add-On Electrical Equipment on page 9-48*.

**⚠ Caution**

If the steering wheel is turned until it reaches the end of its travel, and is held in that position while starting the vehicle, damage may occur to the hydraulic power steering system and there may be loss of power steering assist.

**Automatic Transmission**

Move the shift lever to P (Park) or N (Neutral). To restart the vehicle when it is already moving, use N (Neutral) only.

**⚠ Caution**

Do not try to shift to P (Park) if the vehicle is moving. If you do, you could damage the transmission. Shift to P (Park) only when the vehicle is stopped.

**Manual Gearbox**

The shift lever should be in Neutral and the parking brake engaged. Hold the clutch pedal down to the floor and start the engine.

**Starting Procedure**

1. With your foot off the accelerator pedal, turn the ignition key to START. When the engine starts, let go of the key. The idle speed will go down as the engine warms. Do not race the engine immediately after starting it. Allow the oil to warm up and lubricate all moving parts.

**⚠ Caution**

Cranking the engine for long periods of time, by returning the ignition to the START position immediately after cranking has ended, can overheat and damage the cranking motor, and drain the  
(Continued)

**Caution (Continued)**

battery. Wait at least 15 seconds between each try, to let the cranking motor cool down.

2. If the engine does not start after five to 10 seconds, especially in very cold weather (below  $-18^{\circ}\text{C}$  or  $0^{\circ}\text{F}$ ), it could be flooded with too much petrol. Push the accelerator pedal all the way to the floor and hold it there as you hold the key in START for a maximum of 15 seconds. Wait at least 15 seconds between each attempt, to allow the starter motor to cool. When the engine starts, let go of the key and accelerator. If the vehicle starts briefly but then stops again, repeat the procedure. This clears the extra petrol from the engine. Do not race the engine immediately after starting it. Operate the engine and

## 9-16 Driving and Operating

transmission gently until the oil warms up and lubricates all moving parts.

### Retained Accessory Power (RAP)

These vehicle accessories may be used for up to 10 minutes after the engine is turned off:

- Audio System
- Power Windows
- Sunroof (if equipped)

The power windows and sunroof will continue to work for up to 10 minutes or until any door is opened. The radio will work when the key is in ON/RUN or ACC/ACCESSORY. Once the key is turned from ON/RUN to LOCK/OFF, the radio will continue to work for 10 minutes, or until the driver door is opened or the key is removed from the ignition.

### Shifting Into Park

Use this procedure to shift into P (Park):

1. Hold the brake pedal down and set the parking brake.

See *Parking Brake* on page 9-28 for more information.

2. Hold the button on the shift lever and push the lever toward the front of the vehicle into P (Park).
3. Turn the ignition to LOCK/OFF.
4. Remove the key.

### 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.

(Continued)

#### Warning (Continued)

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly applied. The vehicle can roll.

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park* on page 9-16. If you are towing a trailer, see *Driving Characteristics and Towing Tips* on page 9-43.

If you have to leave the vehicle with the engine running, the vehicle must be in P (Park) and the parking brake set.

Release the button and check that the shift lever cannot be moved out of P (Park).

### Torque Lock

Torque lock is when the weight of the vehicle puts too much force on the parking pawl in the transmission. This happens when parking on a hill and shifting the transmission into P (Park) is not done properly and then it is difficult to shift out of P (Park). To prevent torque lock, set the parking brake and then shift into P (Park). To find out how, see “Shifting Into Park” listed previously.

If torque lock does occur, the vehicle may need to be pushed uphill by another vehicle to relieve the parking pawl pressure, so you can shift out of P (Park).

### Shifting out of Park

This vehicle is equipped with an electronic shift lock control system. The shift lock release is designed to:

- Prevent ignition key removal unless the shift lever is in P (Park) with the shift lever button fully released.
- Prevent movement of the shift lever out of P (Park), unless the ignition is in ON/RUN and the brake pedal is applied.

The shift lock release is always functional except in the case of an uncharged or low voltage (less than 9-volt) battery.

If the vehicle has an uncharged battery or a battery with low voltage, try charging or jump starting the battery. See *Jump Starting on page 10-72*.

To shift out of P (Park):

1. Apply the brake pedal.
2. Turn the key to the ON/RUN position.
3. Release the parking brake. See *Parking Brake on page 9-28*.
4. Press the shift lever button.
5. Move the shift lever to the desired position.

If still unable to shift out of P (Park):

1. Fully release the shift lever button.
2. Hold the brake pedal down and press the gear lever button again.
3. Move the shift lever to the desired position.

If the shift lever still cannot be moved from P (Park), see “Shift Lock Manual Release” following.

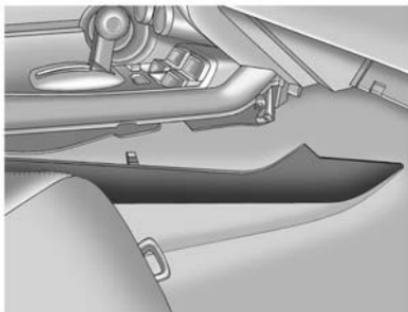
## 9-18 Driving and Operating

### Shift Lock Manual Release

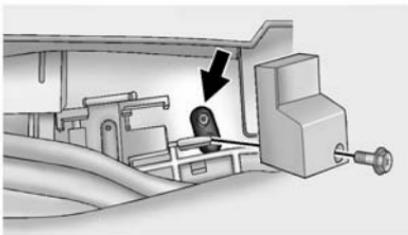
The transmission has an electric park lock called a shift lock manual release. The key must be in the ON/RUN position, and the brake pedal pressed so the gear lever can be moved from the P (Park) position. If the battery has lost power, the gear lever cannot be moved from P (Park) unless the shift lock manual release is disengaged manually.

To access the shift lock manual release:

1. Apply the parking brake.



2. Pull the passenger side console trim away from the front half of the console to expose the shift lever mechanism.



3. Remove the retainer and the shift lock manual release cover.

4. Push and hold the manual release lever toward the rear of the vehicle.
5. Press the select button and move the gear lever to the N (Neutral) position.
6. Release the lever.
7. After the vehicle has been moved, align the shift lock manual release cover plate and install the retainer so the automatic transmission can operate properly.
8. Place the console trim panel in the original position, aligning the fasteners on the trim panel with the slots in the console. Press in the side trim until it clicks in place.

The gear lever locks if it is moved back to the P (Park) position.

## Parking

### Warning

Do not park the vehicle on an easily ignitable surface. The high temperature of the exhaust system could ignite the surface.

Always apply parking brake. See Parking Brake or Electric Parking Brake.

Switch off the engine.

If the vehicle is on a level surface or uphill slope, engage 1 (First) gear or set the selector lever to P (Park) before switching off the ignition. On an uphill slope, turn the front wheels away from the curb.

If the vehicle is on a downhill slope, engage R (Reverse) gear or set the selector lever to

(Continued)

### Warning (Continued)

P (Park) before switching off the ignition. Turn the front wheels towards the curb.

Switch off the ignition. Turn the steering wheel until the steering wheel lock engages. Turn the ignition key to position OFF and remove it. Turn the steering wheel until the steering wheel lock is felt to engage.

For vehicles with automatic transmission, the key can only be removed when the selector lever is in the P (Park) position.

## 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®

Vehicles with V8 engines and an automatic transmission have Active Fuel Management®. This system allows the engine to operate on either all or half of its cylinders, depending on the driving conditions.

When less power is required, such as cruising at a constant vehicle speed, the system will operate in the half cylinder mode, allowing the vehicle to achieve better fuel economy. When greater power demands are required, such as accelerating from a stop, overtaking, or merging onto a freeway, the system will maintain full-cylinder operation.

## 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 exhaust pipes).
- The exhaust smells or sounds strange or different.
- The exhaust system leaks due to corrosion or damage.
- The vehicle exhaust system has been modified, damaged, or improperly repaired.

(Continued)

### Warning (Continued)

- There are holes or openings in the vehicle body from damage or aftermarket modifications that are not completely sealed.

If unusual fumes are detected or if it is suspected that exhaust is coming into the vehicle:

- Drive it only with the windows completely down.
- Have the vehicle repaired immediately.

Never park the vehicle with the engine running in an enclosed area such as a garage or a building that has no fresh air ventilation.

## Running the Vehicle While Parked

It is better not to park with the engine running.

If the vehicle is left with the engine running, follow the proper steps to be sure the vehicle will not move. See *Shifting Into Park* on page 9-16 and *Engine Exhaust* on page 9-20. If the vehicle has a manual gearbox, see *Parking* on page 9-19.

If parking on a hill and pulling a trailer, see *Driving Characteristics and Towing Tips* on page 9-43.

## Automatic Transmission

The Driver Information Centre (DIC) displays the current gear selected in the lower left corner. When Sport Mode is active, an S is displayed. If Manual Mode is active, an M and the current gear selected are displayed.



**P (Park):** This position locks the rear wheels. It is the best position to use when starting the engine because the vehicle cannot move easily.

### Warning

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly applied. The vehicle can roll.

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See *Shifting Into Park* on page 9-16 and *Driving Characteristics and Towing Tips* on page 9-43.

## 9-22 Driving and Operating

Make sure the shift lever is fully in P (Park) before starting the engine. The vehicle has an automatic transmission shift lock control system. The regular brake must be fully applied first and then the shift lever button pressed before shifting from P (Park) when the ignition key is in ON/RUN. If you cannot shift out of P (Park), ease pressure on the shift lever, then push the shift lever all the way into P (Park) as you maintain brake application. Then press the shift lever button and move the shift lever into another gear. See *Shifting out of Park on page 9-17*.

**R (Reverse):** Use this gear to reverse.

### Caution

Shifting to R (Reverse) while the vehicle is moving forward could damage the transmission. The repairs would not be covered by

(Continued)

### Caution (Continued)

the vehicle warranty. Shift to R (Reverse) only after the vehicle is stopped.

To rock the vehicle back and forth to get out of snow, ice, or sand without damaging the transmission, see *If the Vehicle Is Stuck on page 9-9*.

**N (Neutral):** In this position, the engine does not connect with the wheels. To restart the engine when the vehicle is already moving, use N (Neutral) only. Also, use N (Neutral) when the vehicle is being towed.

### Warning

Shifting into a drive gear while the engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, the vehicle could move very rapidly.

(Continued)

### Warning (Continued)

You could lose control and hit people or objects. Do not shift into a drive gear while the engine is running at high speed.

### Caution

Shifting out of P (Park) or N (Neutral) with the engine running at high speed may damage the transmission. The repairs would not be covered by the vehicle warranty. Be sure the engine is not running at high speed when shifting the vehicle.

**D (Drive):** This position is for normal driving. It provides the best fuel economy.

If more power is needed for passing, and the vehicle is:

- Going less than 56 km/h (35 mph), push the accelerator pedal about halfway down.
- Going about 56 km/h (35 mph) or more, push the accelerator all the way down.

### Powertrain Braking (V6 and V8 Engines)

When driving on steep descents with the gear lever in D (Drive) or M (Manual Mode) where frequent braking is required, the transmission will shift down a gear to help hold vehicle speed and reduce brake wear. If the driver continues to press the brake, the transmission will downshift until 3 (Third) gear is reached.

If the brake is released for some time, the transmission will up-shift a gear. If the road levels out and the accelerator pedal is pressed, the transmission will up-shift until the appropriate gear is reached.

### Caution

If the vehicle accelerates slowly, or does not shift gears, the transmission could be damaged. Have the vehicle serviced right away.

**M (Manual Mode):** This position allows the driver to select gears appropriate for current driving conditions.

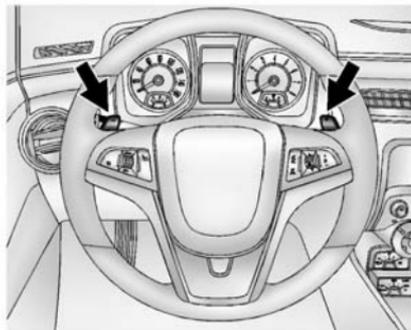
With the gear lever in M (Manual Mode) position, and without using the Tap Shift controls on the steering wheel, the vehicle will be in Sport Mode. Sport Mode provides firmer, quicker shifting. The transmission will shift automatically until the Tap Shift controls are used. Tap Shift activates driver manual gear selection. See *Manual Mode on page 9-24*.

### V6 models, V8 models

While driving in Sport Mode, if Tap Shift has not been activated, the transmission determines when the vehicle is being driven in a competitive manner. The transmission may remain in a gear longer than it would in the normal driving mode based on throttle input and vehicle lateral acceleration. If there is a rapid reduction in throttle from a heavy throttle position, the transmission will maintain the current gear up to near red line rpm. While braking, the transmission will automatically downshift to the next lower gear keeping engine speed above approximately 3000 rpm. If the vehicle is then driven for a short time at a steady speed, and without high cornering loads, the transmission will up-shift one gear at a time, until 6 (Sixth) gear. After shifting to 6 (Sixth) gear, or coming to a complete stop, the transmission will return to normal Sport Mode shifting.

### Manual Mode

#### Tap Shift



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

While in M (Manual Mode), the transmission will prevent shifting to a lower gear if the engine speed is too high. If the tap down – (Minus) paddle is held while the vehicle slows down, the M in the DIC will flash, and the downshift will be allowed when vehicle speed is low enough. Continuing to hold the tap down – (Minus) paddle will not cause the transmission to continue downshifting. Each downshift must be requested separately by releasing and reapplying the tap down – (Minus) paddle.



Vehicles equipped with a Head-Up Display (HUD) also have shift timing lights across the top of the display. As you approach a shift point, the rows of lights grow closer together. The transmission should be shifted

before the lights come together in the middle of the display. If the lights begin flashing, you have exceeded the shift point. Shift immediately.

See *Driver Information Centre (DIC)* on page 5-22 and *Head-Up Display (HUD)* on page 5-25.

When in Tap Shift Mode, the driver can exit Tap Shift by holding the right (upshift) control for two seconds. The transmission will return to automatic shifting.

The driver may choose to briefly enter Tap Shift Mode while in D (Drive). Tapping either the upshift or downshift control will place the transmission in Tap Shift Mode. The driver may then exit Tap Shift Mode by holding the upshift control for two seconds. The system will return to automatic shifting after 10 seconds of cruising at a steady speed, or when the vehicle comes to a stop.

The driver may use this 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 you to shift into gears appropriate for the vehicle speed and engine revolutions per minute (rpm). The transmission will not automatically shift to the next higher gear if the engine rpm is too high. If shifting is prevented for any reason, the message SHIFT DENIED will appear in the DIC, indicating that the transmission has not shifted gears. While in the Tap Shift Mode, the transmission will not automatically downshift on hard acceleration.

When coasting to a stop in Tap Shift Mode, the V6 transmission will automatically downshift to 1 (First) gear, and the V8 transmission will automatically downshift to 2 (Second) gear. A 1 (First) gear start can be selected using the Tap Shift controls on V8 models. When accelerating from a stop, the transmissions will hold these gears

until the driver manually selects higher gears using the Tap Shift controls.

When accelerating the vehicle from a stop in snowy and icy conditions, you may want to shift into 2 (Second) gear. A higher gear ratio allows you to gain more traction on slippery surfaces.

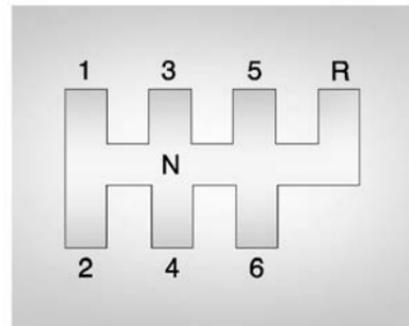
### Shift Indicator



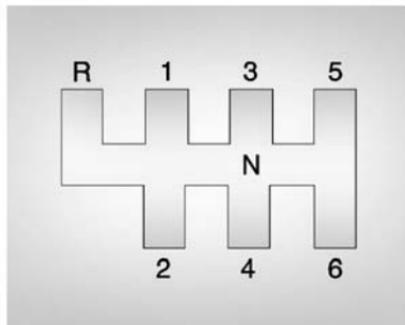
The shift indicator illuminates in the instrument cluster when a gear shift is recommended for best fuel economy. When the arrow is pointed up, an upshift is recommended. The number displayed with the arrow indicates the recommended gear.

## Manual Gearbox

### Shift Pattern (V8 Engines)



### Shift Pattern (V6 Engine)



These are the shift patterns for the 6-speed manual gearboxes.

To operate the transmission:

**1 (First):** Press the clutch pedal and shift into 1 (First). Then slowly let up on the clutch pedal as you press the accelerator pedal.

You can shift into 1 (First) when you are going less than 64 km/h (40 mph). If you come to a complete stop and it is hard to shift into 1 (First), put the shift lever in

Neutral and let up on the clutch. Press the clutch pedal back down. Then shift into 1 (First).

**2 (Second):** Press the clutch pedal as you let up on the accelerator pedal and shift into 2 (Second). Then, slowly let up on the clutch pedal as you press the accelerator pedal.

**3 (Third), 4 (Fourth), 5 (Fifth) and 6 (Sixth):** Shift into 3 (Third), 4 (Fourth), 5 (Fifth), and 6 (Sixth) the same way you do for 2 (Second). Slowly let up on the clutch pedal as you press the accelerator pedal.

To stop, let up on the accelerator pedal and press the brake pedal. Just before the vehicle stops, press the clutch pedal and the brake pedal and shift to Neutral.

**Neutral:** Use this position when you start or idle the engine. The shift lever is in Neutral when it is centred in the shift pattern, not in any gear.

**R (Reverse):** To reverse, press down the clutch pedal and shift into R (Reverse). On V8 models, apply pressure to get the lever past 5 (Fifth) and 6 (Sixth) into R (Reverse). Let up on the clutch pedal slowly while pressing the accelerator pedal.



Vehicles equipped with a Head-Up Display (HUD) may also have shift timing lights across the top of the display. As you approach a shift point, the rows of lights grow closer together. The transmission should be shifted before the lights come together in the middle of the display. If the lights begin flashing, you have exceeded the shift point. Shift immediately.

See *Driver Information Centre (DIC)* on page 5-22 and *Head-Up Display (HUD)* on page 5-25.

### Shift Indicator



The shift indicator illuminates in the instrument cluster when a gear shift is recommended for best fuel economy. When the arrow is pointed up, an upshift is recommended. The number displayed with the arrow indicates the recommended gear.

## Brakes

### Antilock Brake System (ABS)

This vehicle has ABS, an advanced electronic braking system that helps prevent a braking skid.

When the vehicle begins to drive away, ABS checks itself. A momentary motor or clicking noise might be heard while this test is going on, and it might even be noticed that the brake pedal moves a little. This is normal.



If there is a problem with ABS, this warning light stays on. See *Antilock Brake System (ABS) Warning Light* on page 5-17.

If driving safely on a wet road and it becomes necessary to slam on the brakes and continue braking to avoid a sudden obstacle, a computer senses the wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each wheel.

ABS can change the brake pressure to each wheel, as required, faster than any driver could. This can help you steer around the obstacle while braking hard.

As the brakes are applied, the computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: ABS does not change the time needed to get a foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, there will not be enough time to apply the brakes if that vehicle

## 9-28 Driving and Operating

suddenly slows or stops. Always leave enough room up ahead to stop, even with ABS.

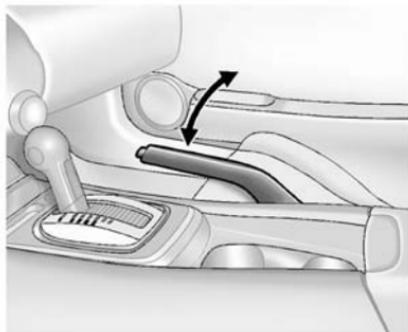
### Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let ABS work. You may hear the ABS pump or motor operating and feel the brake pedal pulsate. This is normal.

### Braking in Emergencies

ABS allows you to steer and brake at the same time. In many emergencies, steering can help more than even the very best braking.

### Parking Brake



To apply the parking brake, pull up on the parking brake handle. It is not necessary to press the release button in while applying the parking brake. If the ignition is in the ON/RUN position, the brake system warning light will come on. See *Brake System Warning Light* on page 5-17.

To release the parking brake:

1. Hold the brake pedal down.

2. Pull the parking brake handle up until you can press the release button.
3. Hold the release button in as you move the brake handle all the way down.

#### **Caution**

Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Make sure that the parking brake is fully released and the brake warning light is off before driving.

Driving with the parking brake applied will cause a warning chime to sound and the **RELEASE PARKING BRAKE** message to appear in the DIC. The message will remain on until:

- The parking brake is released.
- The vehicle comes to a stop.

If you are towing a trailer and parking on a hill, see *Driving Characteristics and Towing Tips on page 9-43*.

## Brake Assist

The Brake Assist feature is designed to assist the driver in stopping or decreasing vehicle speed in emergency driving conditions. This feature uses the stability system hydraulic brake control module to supplement the power brake system under conditions where the driver has quickly and forcefully applied the brake pedal in an attempt to quickly stop or slow down the vehicle. The stability system hydraulic brake control module increases brake pressure at each corner of the vehicle until the ABS activates. Minor brake pedal pulsation or pedal movement during this time is normal and the driver should continue to apply the brake pedal as the driving situation dictates.

The Brake Assist feature will automatically disengage when the brake pedal is released or brake pedal pressure is quickly decreased.

## Hill Start Assist (HSA)

If equipped, HSA may automatically activate when the vehicle is stopped on a gradient. This feature is designed to prevent the vehicle from rolling, either forward or rearward, during vehicle drive off. During the transition from releasing the brake pedal to accelerating to drive off on a grade, HSA holds the braking pressure to prevent rolling. HSA will not activate if the vehicle is in a drive gear and facing downhill or if the vehicle is facing uphill and in R (Reverse).

## Ride Control Systems

### Traction Control/ Electronic Stability Control

#### System Operation

The vehicle has a Traction Control System (TCS) and StabiliTrak<sup>®</sup>, an electronic stability control system. These systems help limit wheel slip and assist the driver in maintaining control, especially on slippery road conditions.

TCS activates if it senses that any of the drive wheels are spinning or beginning to lose traction. When this happens, TCS applies the brakes to the spinning wheels and reduces engine power to limit wheel spin.

StabiliTrak activates when the vehicle senses a difference between the intended path and the direction the vehicle is actually travelling. StabiliTrak selectively applies braking pressure to any one of the

## 9-30 Driving and Operating

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vehicle wheel brakes to assist the driver in keeping the vehicle on the intended path.

If cruise control is being used and traction control or StabiliTrak begins to limit wheel spin, cruise control will disengage. Cruise control may be turned back on when road conditions allow.

Both systems come on automatically when the vehicle is started and begins to move. The systems may be heard or felt while they are operating or while performing diagnostic checks. This is normal and does not mean there is a problem with the vehicle.

It is recommended to leave both systems on for normal driving conditions, but it may be necessary to turn TCS off if the vehicle gets stuck in sand, mud, ice, or snow. See *If the Vehicle Is Stuck on page 9-9* and "Turning the Systems Off and On" later in this section.



The indicator light for both systems is in the instrument cluster. This light will:

- Flash when TCS is limiting wheel spin.
- Flash when StabiliTrak is activated.
- Turn on and stay on when either system is not working.

If either system fails to turn on or to activate, a message displays in the Driver Information Centre (DIC), and  comes on and stays on to indicate that the system is inactive and is not assisting the driver in maintaining control. The vehicle is safe to drive, but driving should be adjusted accordingly.

If  comes on and stays on:

1. Stop the vehicle.
2. Turn the engine off and wait 15 seconds.
3. Start the engine.

Drive the vehicle. If  comes on and stays on, the vehicle may need more time to diagnose the problem. If the condition persists, see your dealer.

### Turning the Systems Off and On



The button for TCS and StabiliTrak is on the centre console in front of the gear lever.

 **Caution**

Do not repeatedly brake or accelerate heavily when TCS is off. The vehicle driveline could be damaged.

To turn off only TCS, press and release the  button. The traction off light  displays in the instrument cluster.

To turn TCS on again, press and release the  button. The traction off light  displayed in the instrument cluster will turn off.

If TCS is limiting wheel spin when the  button is pressed, the system will not turn off until the wheels stop spinning.

To turn off both TCS and StabiliTrak, press and hold the  button until the traction off light  and

StabiliTrak OFF light  come on and stay on in the instrument cluster.

To turn TCS and StabiliTrak on again, press and release the  button. The traction off light  and StabiliTrak OFF light  in the instrument cluster turn off.

Adding accessories can affect the vehicle performance. See *Accessories and Modifications on page 10-2*.

### Engine Drag Control (EDC)

EDC improves vehicle stability by sensing if there is a difference in speed between the free rolling front wheels and the rear drive wheels that often occurs when the drivers take their foot off the accelerator pedal on slippery surfaces (snow, ice, etc.). When this is detected, EDC sends more torque to the rear wheels to make sure all four wheels are spinning at similar speeds, making the vehicle more stable.

## Competitive Driving Mode

Competitive Driving Mode and Launch Control are systems designed to allow increased performance while accelerating and/or cornering. This is accomplished by regulating and optimising engine and brake performance. These modes are for use at a closed course race track and are not intended for use on public roads. They will not compensate for driver inexperience or lack of familiarity with the race track. Drivers who prefer to allow the system to have more control of the engine and brake systems are advised to turn the normal TCS and StabiliTrak systems on.

 **Caution**

Attempting to shift when the drive wheels are spinning and do not have traction may cause damage to the transmission. Damage

(Continued)

### Caution (Continued)

caused by misuse of the vehicle is not covered by the vehicle warranty. Do not attempt to shift when the drive wheels do not have traction.

### Competitive Driving Mode (SS Only)

Competitive Driving Mode allows full engine power while the StabiliTrak system helps maintain directional control of the vehicle by selective brake application. In this mode, TCS is off and Launch Control is available. Adjust your driving style to account for the available engine power. See “Launch Control” later in this section.



These lights are on when the vehicle is in the Competitive Driving Mode.

This optional handling mode can be selected by pressing the TCS/StabiliTrak button on the console quickly two times. The appropriate message displays in the Driver Information Centre (DIC). See *Ride Control System Messages on page 5-33* for more information.

When the TCS/StabiliTrak button is pressed again, the TCS and StabiliTrak systems are on. The appropriate message displays briefly in the DIC.

### Launch Control (V8 with Manual Gearboxes Only)

A Launch Control feature is available, within Competitive Driving Mode on vehicles with a manual gearbox to allow the driver to achieve high levels of vehicle acceleration in a straight line. Launch Control is a form of traction control that manages tyre spin while launching the vehicle. This feature is intended for use during closed course race events where consistent zero to sixty and quarter mile times are desirable.

Launch Control is only available when the following criteria are met:

- Competitive Driving Mode is selected.
- The vehicle is not moving.

- The steering wheel is pointing straight.
- The clutch is pressed and the vehicle is in first gear.
- The accelerator pedal is rapidly applied to wide open throttle.

The Launch Control feature will initially limit engine speed as the driver rapidly applies the accelerator pedal to wide open throttle. A smooth, quick release of the clutch, while maintaining the fully pressed accelerator pedal, will manage wheel slip. Complete shifts are described in *Manual Gearbox on page 9-25*.

After the vehicle is launched, the system continues in Competitive Driving Mode.

Competitive Driving Mode and Launch Control are systems designed for a closed course race track and not intended for use on public roads. The systems are not intended to compensate for lack of driver experience or familiarity with the race track.

### Limited-Slip Rear Axle

Vehicles with a limited-slip rear axle can give more traction on snow, mud, ice, sand or gravel. When traction is low, this feature allows the drive wheel with the most traction to move the vehicle. The limited-slip rear axle also gives the driver enhanced control when cornering hard or completing a manoeuvre, such as a lane change.

## Cruise Control

With cruise control, the vehicle can maintain a speed of about 40 km/h (25 mph) or more without your having to keep your foot on the accelerator. Cruise control does not work at speeds below 40 km/h (25 mph).

### Warning

Cruise control can be dangerous where you cannot drive safely at a steady speed. Do not use cruise control on winding roads or in heavy traffic.

Cruise control can be dangerous on slippery roads. On such roads, fast changes in tyre traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

## 9-34 Driving and Operating

If the StabiliTrak<sup>®</sup> system begins to limit wheel spin while using cruise control, the cruise control automatically disengages. See *Traction Control/Electronic Stability Control on page 9-29*. When road conditions allow you to safely use it again, cruise control can be turned back on.

If the brakes are applied, cruise control disengages.



**⏻ (On/Off):** Press to turn the system on and off. A white indicator appears in the instrument cluster when cruise is turned on.

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

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

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

### Setting Cruise Control

If **⏻** is on when not in use, SET/- or RES/+ could get bumped and go into cruise when not desired. Keep **⏻** off when cruise control is not being used.

1. Press **⏻** to turn cruise control on.
2. Get up to the speed desired.
3. Press the thumbwheel toward SET/- and release it.
4. Remove your foot from the accelerator.

The cruise control indicator on the instrument cluster turns green after cruise control has been set to the desired speed. See *Instrument Cluster on page 5-7*.

### Resuming a Set Speed

If the cruise control is set at a desired speed and then the brakes are applied or **⊗** is pressed, the cruise control is disengaged without erasing the set speed from memory.

Once the vehicle speed reaches about 40 km/h (25 mph) or more, press 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:

- Press the thumbwheel up toward RES/+ and hold it until the desired speed is reached, and then release it.
- To increase the vehicle speed in small increments, press the thumbwheel up toward RES/+ briefly. For each press, the vehicle goes about 1.6 km/h (1 mph) faster.

The speedometer reading can be displayed in either English or metric units. See *Driver Information Centre (DIC)* on page 5-22. The increment value used depends on the units displayed.

### **Reducing Speed While Using Cruise Control**

If the cruise control system is already activated:

- Press the thumbwheel toward SET/- and hold until the desired lower speed is reached, then release it.
- To decrease the vehicle speed in small increments, press the thumbwheel toward SET/- briefly. For each press, the vehicle goes about 1.6 km/h (1 mph) slower.

The speedometer reading can be displayed in either English or metric units. See *Driver Information Centre (DIC)* on page 5-22. The increment value used depends on the units displayed.

### **Overtaking Another Vehicle While Using Cruise Control**

Use the accelerator pedal to increase the vehicle speed. When you take your foot off the pedal, the vehicle slows down to the previously

set cruise control speed. While pressing the accelerator pedal or shortly following the release to override cruise control, briefly moving the thumbwheel toward SET/- will result in cruise control set to the current vehicle speed.

### **Using Cruise Control on Hills**

How well the cruise control works on hills depends upon the vehicle speed, load and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain the vehicle speed. When going downhill, you might have to brake or change to a lower gear to keep your speed down. If the brake pedal is applied, cruise control will disengage.

### Ending Cruise Control

There are four ways to end cruise control:

- To disengage cruise control, step lightly on the brake pedal or clutch. The indicator light on the instrument cluster goes out.
- Press .
- Shift the transmission to N (Neutral).
- To turn off cruise control, press .

### Erasing Speed Memory

The cruise control set speed is erased from memory if  is pressed or if the vehicle is turned off.

## Driver Assistance Systems

### Parking Assist

If equipped, the Rear Parking Assist (RPA) system assists the driver with parking and avoiding objects while in R (Reverse). RPA operates at speeds less than 8 km/h (5 mph). The sensors on the rear bumper detect objects up to 2.5 m (8 ft) behind the vehicle, and at least 20 cm (8 in) off the ground. The distance objects can be detected may be less during warmer or humid weather.

#### Warning

The parking assist system does not detect children, pedestrians, bicyclists, animals, or objects below the bumper or that are too close or too far from the vehicle. It is not available at speeds

(Continued)

#### Warning (Continued)

greater than 8 km/h (5 mph). To prevent injury, death, or vehicle damage, even with parking assist, always check the area around the vehicle and check all mirrors before reversing.

### How the System Works

RPA comes on automatically when the gear lever is moved into R (Reverse). A single beep sounds to indicate the system is working.

An obstacle detection is indicated by beeps. The time between the beeps becomes shorter as the vehicle gets closer to the obstacle. When the distance is less than 30 cm (12 in), the beeping is a continuous beep for five seconds.

### Turning the System On and Off

The RPA system can be turned on and off using the infotainment system controls. See *Vehicle Personalisation on page 5-36*.

When the system is off, PARK ASSIST OFF displays on the Driver Information Centre (DIC). The message disappears after a short period of time.

RPA defaults to the on setting each time the vehicle is started.

Turn off RPA when towing a trailer.

### When the System Does Not Seem to Work Properly

The following messages may be displayed on the DIC:

**SERVICE PARKING ASSIST:** If this message occurs, check the following conditions:

- The sensors are not clean. Keep the vehicle's rear bumper free of mud, dirt, snow, ice, and slush. For cleaning instructions, see *Exterior Care on page 10-75*.

- The park assist sensors are covered by frost or ice. Frost or ice can form around and behind the sensors and may not always be seen; this can occur after washing the vehicle in cold weather. The message may not clear until the frost or ice has melted.

If the above conditions do not exist, take the vehicle to your dealer to repair the system.

**PARK ASSIST OFF:** If the RPA system does not activate due to a temporary condition, the message displays on the DIC. This can occur under the following conditions:

- The driver has disabled the system.
- An object was hanging out of the trunk during the last drive cycle. Once the object is removed, RPA will return to normal operation.
- The bumper is damaged. Take the vehicle to your dealer to repair the system.

- Other conditions, such as vibrations from a jackhammer or the compression of air brakes on a very large truck, are affecting system performance.

### Rear Vision Camera (RVC)



#### Warning

The RVC system does not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object located outside the camera's field of view, below the bumper, or under the vehicle. Perceived distances may be different from actual distances. Do not reverse the vehicle using only the RVC screen. Failure to use proper care before reversing may result in injury, death, or vehicle damage. Always check behind and around the vehicle before reversing.

## 9-38 Driving and Operating

If equipped, the RVC system is designed to help the driver when reversing by displaying a view of the area behind the vehicle. When the key is in ON/RUN and the driver shifts the vehicle into R (Reverse), the video image automatically appears on the infotainment screen. The infotainment screen goes to the previous screen after approximately four seconds once the vehicle is shifted out of R (Reverse).

To see the previous screen sooner, do one of the following:

- Press a hard key on the infotainment system.
- Shift into P (Park).

### Symbols and Guidelines

The RVC system may have a feature that lets the driver view symbols on the infotainment screen while using the RVC. The Rear Park Assist (RPA) system must not be disabled to use the caution symbols. The error message Rear Parking Assist Symbols Unavailable may

display if RPA has been disabled and the symbols have been turned on. See *Parking Assist on page 9-36*.

The symbols appear and may cover an object when viewing the infotainment screen when an object is detected by the RPA system.

The RVC system may also have a guideline overlay that can help the driver align the vehicle when backing into a parking spot.

To turn the symbols or guidelines on or off:

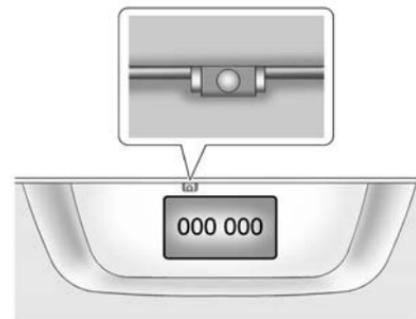
1. Shift into P (Park).
2. Press the CONFIG button.
3. Select Display Settings and then Rear Camera Options.
4. Select Symbols or Guidelines. The feature is on when a check mark appears next to it.

### Rear Vision Camera Error Messages

**SERVICE REAR VISION CAMERA SYSTEM:** This message can display on the infotainment screen when the system is not working properly.

If any other problem occurs or if a problem persists, see your dealer.

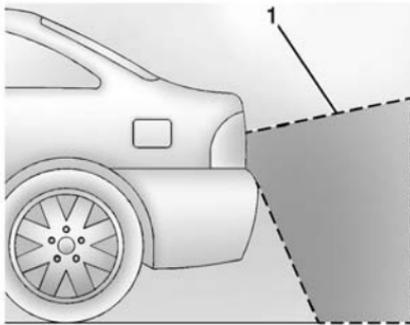
### Rear Vision Camera Location



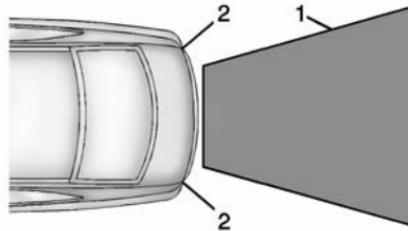
The camera is above the number plate.

The area displayed by the camera is limited. It does not display objects that are close to either corner or under the bumper and can vary depending on vehicle orientation or road conditions. Displayed images may be further or closer than they appear.

The following illustrations show the field of view that the camera provides.



1. View displayed by the camera.



1. View displayed by the camera.
2. Corner of the rear bumper.

### When the System Does Not Seem to Work Properly

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

- It is dark.
- The sun or the beam of headlamps are shining directly into the camera lens.

- Ice, snow, mud, or anything else builds up on the camera lens. Clean the lens, rinse it with water, and wipe it with a soft cloth.
- The back of the vehicle is in an accident. The position and mounting angle of the camera can change or the camera can be affected. Be sure to have the camera and its position and mounting angle checked at your dealer.

### Fuel

Use the recommended fuel for proper vehicle maintenance.

If the vehicle has a V6 engine, use regular unleaded petrol with a posted octane rating of 95 RON or higher, otherwise an audible knocking noise may be heard. If heavy knocking is heard when using petrol rated at 95 RON or higher, the engine needs service.

If the vehicle has a V8 engine, use premium unleaded petrol with a posted octane rating of 97 RON or higher. Regular unleaded petrol rated at 95 RON or higher can be used, but acceleration and fuel economy will be reduced, and an audible knocking noise may be heard. If this occurs, use a petrol rated at 97 RON or higher as soon as possible. Otherwise, the engine could be damaged. If heavy knocking is heard when using petrol rated at 97 RON or higher, the engine needs service.

### Use of Seasonal Fuels

Use summer and winter fuels in the appropriate season. The fuels industry automatically modifies the fuel for the appropriate season. If fuel is left in the vehicle tank for long periods of time, driving or starting could be affected. Drive the vehicle until the fuel is at one-half tank or less, then refuel with the current seasonal fuel.

### Prohibited Fuels

Petrols containing oxygenates such as ethers and ethanol, as well as reformulated petrols, are available in some cities. If these petrols comply with the previously described specification, then they are acceptable to use. However, E85 (85% ethanol) and other fuels containing more than 15% ethanol must be used only in FlexFuel vehicles.

### Caution

Do not use fuel containing methanol. It can corrode metal parts in the fuel system and also damage plastic and rubber parts. That damage would not be covered under the vehicle warranty.

Some petrols, mainly high octane racing petrols, can contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). Do not use petrols and/or fuel additives with MMT as they can reduce spark plug life and affect emission control system performance. The malfunction indicator lamp may turn on. If this occurs, see your dealer for service.

### Fuel Additives

Petrol should contain detergent additives that help prevent engine and fuel system deposits from

forming. Clean fuel injectors and intake valves will allow the emission control system to work properly. Some petrol does not contain sufficient quantities of additive to keep fuel injectors and intake valves clean. To make up for this lack of detergency, add Fuel System Treatment PLUS to the fuel tank at every engine oil change or every 15,000 km, whichever occurs first. It is available at your dealer.

## Filling the Tank

### Warning

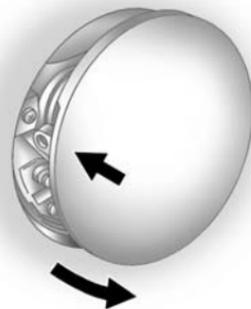
Fuel vapours and fuel fires burn violently and can cause injury or death.

- To help avoid injuries to you and others, read and follow all the instructions on the fuel pump island.
- Turn off the engine when refuelling.

(Continued)

### Warning (Continued)

- Keep sparks, flames, and smoking materials away from fuel.
- Do not leave the fuel pump unattended.
- Do not reenter the vehicle while pumping fuel.
- Keep children away from the fuel pump and never let children pump fuel.
- Fuel can spray out if the fuel cap is opened too quickly. This spray can happen if the tank is nearly full, and is more likely in hot weather. Open the fuel cap slowly and wait for any hiss noise to stop then unscrew the cap all the way.



The fuel cap is behind a hinged fuel door on the passenger side of the vehicle. If equipped, the fuel door is locked when the vehicle doors are locked. Press  on the RKE transmitter to unlock. To open the fuel filler flap, push and release the rearward centre edge of the flap.

Be careful not to spill fuel. Do not top off or overfill the tank and wait a few seconds after you have finished pumping before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See *Exterior Care* on page 10-75.

When replacing the fuel cap, turn it clockwise until it clicks, otherwise the malfunction indicator lamp may turn on. The diagnostic system can determine if the fuel cap has been left off or improperly installed. This would allow fuel to evaporate into the atmosphere. See *Malfunction Indicator Lamp on page 5-14*.

### **Warning**

If a fire starts while you are refuelling, do not remove the nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.

### **Caution**

If a new fuel cap is needed, be sure to get the right type of cap from your dealer. The wrong type of fuel cap may not fit properly,

(Continued)

### **Caution (Continued)**

may cause the malfunction indicator lamp to light, and could damage the fuel tank and emissions system. See *Malfunction Indicator Lamp on page 5-14*.

## Filling a Portable Fuel Container

### **Warning**

Filling a portable fuel container while it is in the vehicle can cause fuel vapours that can ignite either by static electricity or other means. You or others could be badly burned and the vehicle could be damaged. Always:

- Use approved fuel containers.

(Continued)

### **Warning (Continued)**

- Remove the container from the vehicle, boot, or pickup bed before filling.
- Place the container on the ground.
- Place the nozzle inside the fill opening of the container before dispensing fuel, and keep it in contact with the fill opening until filling is complete.
- Fill the container no more than 95% full to allow for expansion.
- Do not smoke, light matches, or use lighters while pumping fuel.
- Avoid using mobile phones or other electronic devices.

## Towing

### General Towing Information

Only use towing equipment that has been designed for the vehicle. Contact your dealer or trailering dealer for assistance with preparing the vehicle for towing a trailer. Read the entire section before towing a trailer.

For towing a disabled vehicle, see *Towing the Vehicle on page 10-74*. For towing the vehicle behind another vehicle such as a motor home, see *Recreational Vehicle Towing on page 10-75*.

### Driving Characteristics and Towing Tips

#### Driving with a Trailer

When towing a trailer:

- Become familiar with the state and local laws that apply specifically to trailer towing.

- Do not tow a trailer during the first 800 km (500 mi), to prevent damage to the engine, axle or other parts.
- Then, during the first 800 km (500 mi) trailer towing, do not drive over 80 km/h (50 mph) and do not make starts at full throttle.
- Vehicles with automatic transmissions can tow in D (Drive) but M (Manual Mode) is recommended. See *Manual Mode on page 9-24*. Use a lower gear if the transmission shifts too often. For vehicles with a manual gearbox, it is better not to use the highest gear.
- Turn off Park Assist when towing.

#### Warning

When towing a trailer, exhaust gases may collect at the rear of the vehicle and enter if the tailgate, boot/hatch, or rear-most window is open.

When towing a trailer:

- Do not drive with the tailgate, boot/hatch, or rear-most window open.
- Fully open the air outlets on or under the instrument panel.
- Also adjust the Climate Control system to a setting that brings in only outside air. See "Climate Control Systems" in the Index.

For more information about Carbon Monoxide, see *Engine Exhaust on page 9-20*.

Towing a trailer requires a certain amount of experience. The combination you are driving is longer and not as responsive as the vehicle itself. Get acquainted with the handling and braking of the rig before setting out for the open road.

Before starting, check all trailer hitch parts and attachments, safety chains, electrical connectors, lamps, tyres and mirrors. If the trailer has electric brakes, start the combination moving and then apply the trailer brake controller by hand to be sure the brakes work.

During the trip, check occasionally to be sure that the load is secure and the lamps and any trailer brakes still work.

### **Towing with a Stability Control System**

When towing, the sound of the stability control system might be heard. The system is reacting to the vehicle movement caused by the

trailer, which mainly occurs during cornering. This is normal when towing heavier trailers.

### **Following Distance**

Stay at least twice as far behind the vehicle ahead as you would when driving the vehicle without a trailer. This can help to avoid situations that require heavy braking and sudden turns.

### **Overtaking**

More overtaking distance is needed when towing a trailer. Because the rig is longer, it is necessary to go farther beyond the passed vehicle before returning to the lane.

### **Reversing**

Hold the bottom of the steering wheel with one hand. To move the trailer to the left, move your hand to the left. To move the trailer to the right, move your hand to the right. Always reverse slowly and, if possible, have someone guide you.

## **Making Turns**



Making very sharp turns while trailering could cause the trailer to come in contact with the vehicle. The vehicle could be damaged. Avoid making very sharp turns while trailering.

When turning with a trailer, make wider turns than normal so the trailer will not strike soft shoulders, curbs, road signs, trees or other objects. Use the indicators well in advance and avoid jerky or sudden manoeuvres.

### **Turn Signals When Towing a Trailer**

The indicator indicators on the instrument cluster flash whenever signalling a turn or lane change. Properly hooked up, the trailer

lamps also flash, telling other drivers the vehicle is turning, changing lanes or stopping.

When towing a trailer, the arrows on the instrument cluster flash for turns even if the bulbs on the trailer are burned out. Check occasionally to be sure the trailer bulbs are still working.

### Driving on Grades

Reduce speed and shift to a lower gear before starting down a long or steep downhill gradient. If the transmission is not shifted down, the brakes might have to be used so much that they would get hot and no longer work well.

The vehicle can tow in D (Drive). Use a lower gear if the transmission shifts too often.

When towing at high altitude on steep uphill grades, engine coolant boils at a lower temperature than at normal altitudes. If the engine is turned off immediately after towing at high altitude on steep uphill

grades, the vehicle could show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground, with the transmission in P (Park) for a few minutes before turning the engine off. If the overheat warning comes on, see *Engine Overheating on page 10-21*.

### Parking on Hills

#### Warning

Parking the vehicle on a hill with the trailer attached can be dangerous. If something goes wrong, the rig could start to move. People can be injured, and both the vehicle and the trailer can be damaged. When possible, always park the rig on a flat surface.

If parking the rig on a hill:

1. Press the brake pedal, but do not shift into P (Park) yet. Turn the wheels into the curb if facing downhill or into traffic if facing uphill.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the brake pedal until the chocks absorb the load.
4. Reapply the brake pedal. Then apply the parking brake and shift into P (Park) for vehicles with an automatic transmission or into gear for vehicles with a manual gearbox.
5. Release the brake pedal.

### Leaving After Parking on a Hill

1. Apply and hold the brake pedal while you:
  - Start the engine.
  - Shift into a gear.
  - Release the parking brake.

## 9-46 Driving and Operating

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2. Release the brake pedal.
3. Drive slowly until the trailer is clear of the chocks.
4. Stop and have someone pick up and store the chocks.

### Maintenance When Trailer Towing

The vehicle needs service more often when pulling a trailer. See the *Scheduled Maintenance on page 11-1*. Things that are especially important in trailer operation are automatic transmission fluid, engine oil, axle lubricant, belts, cooling system and brake system. Inspect these before and during the trip.

Check periodically to see that all hitch nuts and bolts are tight.

### Engine Cooling When Trailer Towing

The cooling system may temporarily overheat during severe operating conditions. See *Engine Overheating on page 10-21*.

### Trailer Towing

Before pulling a trailer, there are three important considerations that have to do with weight:

- The weight of the trailer.
- The weight of the trailer tongue.
- The total weight on your vehicle's tyres.

### Weight of the Trailer

How heavy can a trailer safely be?

It should never weigh more than 454 kg (1,000 lb). But even that can be too heavy.

It depends on how the rig is used. For example, speed, altitude, road grades, outside temperature, and how much the vehicle is used to pull a trailer are all important. It can depend on any special equipment on the vehicle, and the amount of tongue weight the vehicle can carry. See "Weight of the Trailer Tongue" later in this section.

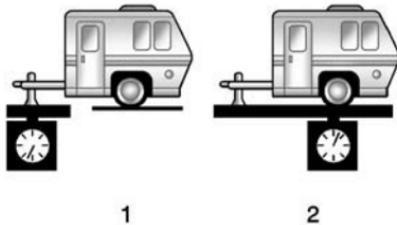
Maximum trailer weight is calculated assuming only the driver is in the tow vehicle and it has all the required trailering equipment. The weight of additional optional equipment, passengers, and cargo in the tow vehicle must be subtracted from the maximum trailer weight.

Ask your dealer for trailering information or advice.

### Weight of the Trailer Tongue

The tongue load (1) of any trailer is an important weight to measure because it affects the total gross weight of the vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo carried in it and the people who will be riding in the vehicle. If there are a lot of options, equipment, passengers, or cargo in the vehicle, it will reduce the tongue weight the vehicle can carry, which will also reduce the trailer weight the vehicle can tow. If towing a trailer, the nose weight must be added to

the GVW because the vehicle will be carrying that weight, too. See *Vehicle Load Limits* on page 9-10.



The trailer tongue (1) should weigh 10 to 15 percent of the total loaded trailer weight (2).

After loading the trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, adjustments might be made by moving some items around in the trailer.

## Total Weight on Your Vehicle's Tyres

Be sure the vehicle's tyres are inflated to the upper limit for cold tyres. These numbers can be found on the Tyre and Loading Information label. See *Vehicle Load Limits* on page 9-10. Make sure not to go over the GVW limit for the vehicle, including the weight of the trailer tongue.

## Towing Equipment

### Hitches

Use the correct hitch equipment. See your dealer or a hitch dealer for assistance.

- The rear bumper on the vehicle is not intended for hitches. Do not attach rental hitches or other bumper-type hitches to it. Use only a frame-mounted hitch that does not attach to the bumper.

- Will any holes be made in the body of the vehicle when the trailer hitch is installed? If so, seal the holes when the hitch is removed. If the holes are not sealed, dirt, water and deadly carbon monoxide (CO) from the exhaust can get into the vehicle. See *Engine Exhaust* on page 9-20.

### Safety Chains

Always attach chains between the vehicle and the trailer. Cross the safety chains under the tongue of the trailer to help prevent the tongue from contacting the road if it becomes separated from the hitch. Leave enough slack so the rig can turn. Never allow safety chains to drag on the ground.

### Trailer Brakes

Does the trailer have its own brakes? Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted and maintained properly.

Because the vehicle has antilock brakes, do not tap into the vehicle's brake system. If this is done, both brake systems will not work well or at all.

### Conversions and Add-Ons

#### Add-On Electrical Equipment



Some electrical equipment can damage the vehicle or cause components to not work and would not be covered by the warranty. Always check with your dealer before adding electrical equipment.

Add-on equipment can drain the vehicle's 12-volt battery, even if the vehicle is not operating.

The vehicle has an airbag system. Before attempting to add anything electrical to the vehicle, see *Servicing the Airbag-Equipped Vehicle* on page 3-25 and *Adding Equipment to the Airbag-Equipped Vehicle* on page 3-26.

## Vehicle Care

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### 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, and electronic systems like anti-lock brakes, traction control, and stability control. These accessories or modifications could even cause malfunction or damage not covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorise the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see *Adding Equipment to the Airbag-Equipped Vehicle* on page 3-26.

## Vehicle Checks

### Doing Your Own Service Work

 **Warning**

It can be dangerous to work on your vehicle if you do not have the proper knowledge, service manual, tools, or parts. Always follow owner manual procedures and consult the service manual for your vehicle before doing any service work.

If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can.

This vehicle has an airbag system. Before attempting to do your own service work, see *Servicing the Airbag-Equipped Vehicle* on page 3-25.

Keep a record with all parts receipts and list the mileage and the date of any service work performed.

 **Caution**

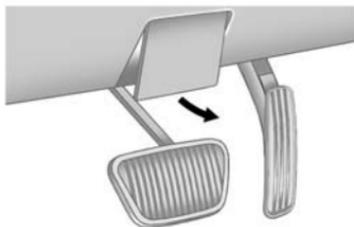
Even small amounts of contamination can cause damage to vehicle systems. Do not allow contaminants to contact the fluids, reservoir caps, or dipsticks.

## 10-4 Vehicle Care

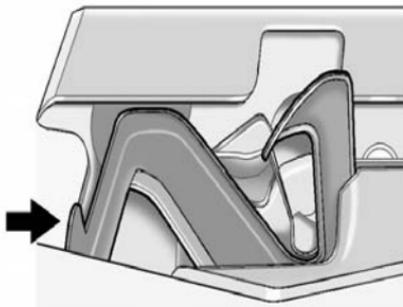
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### Bonnet

To open the bonnet:



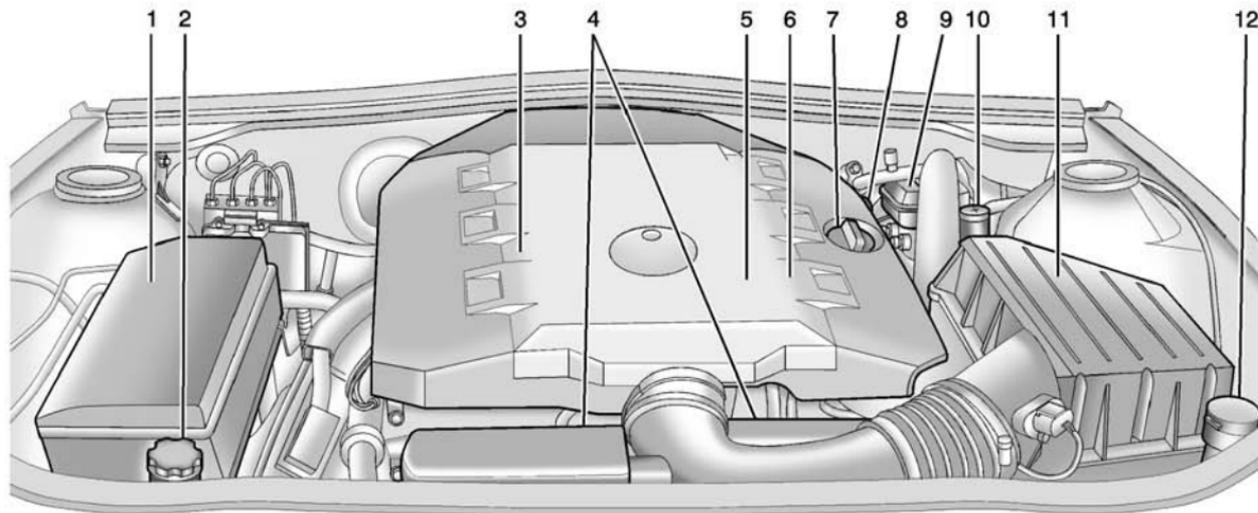
1. Pull the release handle below the instrument panel to the left of the steering wheel.



2. Push the secondary bonnet release to the right. The lever is near the middle of the bonnet.
3. Lift the bonnet.

Before closing the bonnet, be sure all filler caps are on properly. Then lift the bonnet to relieve pressure. Pull the bonnet down on the passenger side to close it firmly.

## Engine Compartment Overview

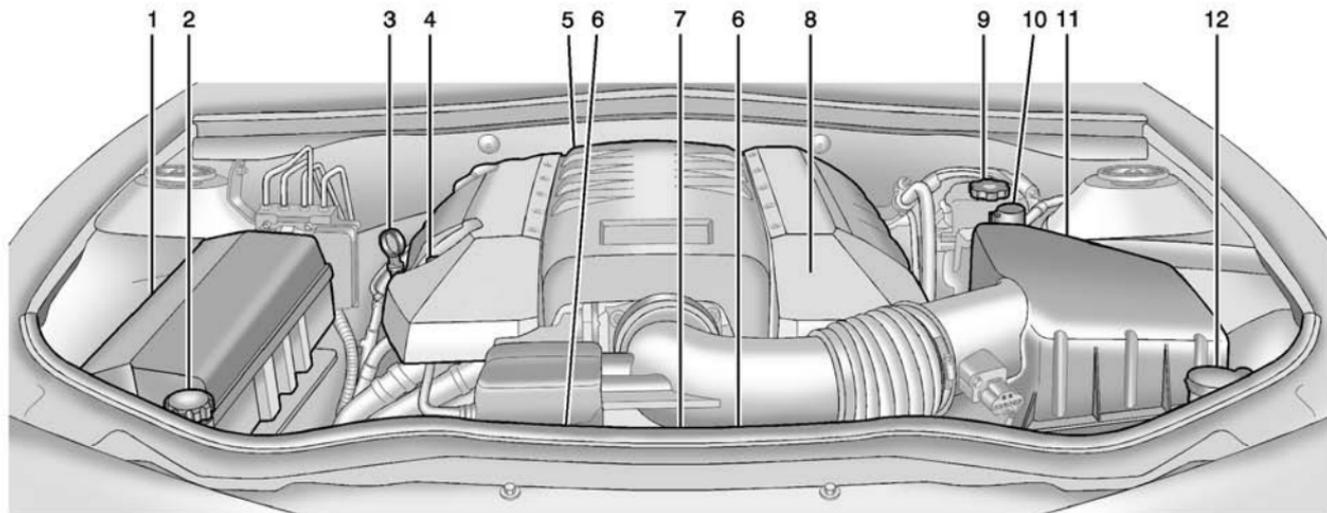


3.6L V6 Engine

## 10-6 Vehicle Care

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1. Under-bonnet Electrical Centre. See *Engine Compartment Fuse Block* on page 10-33.
2. Engine Coolant Recovery Bottle and Cap. See *Engine Coolant* on page 10-16.
3. *Engine Cover* on page 10-8.
4. Engine Cooling Fans (Out of View). See *Cooling System* on page 10-15.
5. Radiator Filler Cap (Out of View). See *Engine Coolant* on page 10-16.
6. Power Steering Reservoir and Cap (Out of View). See *Power Steering Fluid (SS models)* on page 10-22 or *Power Steering Fluid (non-SS model)* on page 10-22.
7. Engine Oil Fill Cap. See *Engine Oil* on page 10-9.
8. Engine Oil Dipstick (Out of View). See *Engine Oil* on page 10-9.
9. Brake Master Cylinder and Hydraulic Clutch Reservoir (if equipped with manual transmission). See *Brakes* on page 10-24 or *Hydraulic Clutch* on page 10-12.
10. Remote Positive (+) Terminal. See *Battery* on page 10-26.
11. *Engine Air Cleaner/Filter* on page 10-13.
12. Windscreen Washer Fluid Reservoir. See *Washer Fluid* on page 10-23.



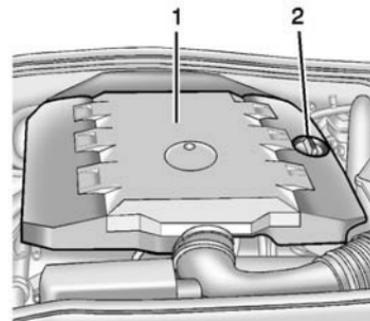
6.2L V8 Engine (L99 Engine Shown, LS3 Similar)

## 10-8 Vehicle Care

1. Under-bonnet Electrical Centre. See *Engine Compartment Fuse Block* on page 10-33.
2. Engine Coolant Recovery Bottle and Cap. See *Engine Coolant* on page 10-16.
3. Engine Oil Dipstick. See *Engine Oil* on page 10-9.
4. Engine Oil Fill Cap (Out of View). See *Engine Oil* on page 10-9.
5. *Engine Cover* on page 10-8.
6. Engine Cooling Fans (Out of View). See *Cooling System* on page 10-15.
7. Radiator Filler Cap (Out of View). See *Engine Coolant* on page 10-16.
8. Power Steering Reservoir and Cap (Under Engine Cover) (if equipped). See *Power Steering Fluid (SS models)* on page 10-22 or *Power Steering Fluid (non-SS model)* on page 10-22.
9. Brake Master Cylinder and Hydraulic Clutch Reservoir (if equipped with manual transmission). See *Brakes* on page 10-24 or *Hydraulic Clutch* on page 10-12.
10. Remote Positive (+) Terminal. See *Battery* on page 10-26.
11. *Engine Air Cleaner/Filter* on page 10-13.
12. Windscreen Washer Fluid Reservoir. See *Washer Fluid* on page 10-23.

## Engine Cover

### 3.6L V6 Engine Cover



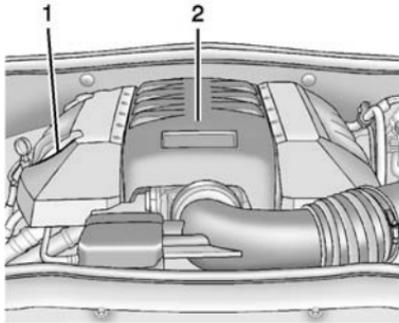
1. Engine Cover
2. Engine Oil Fill Cap

To remove:

1. Remove the engine oil filler cap (2).
2. Lift the engine cover (1) to disengage one front attachment point.

3. Pull the engine cover forward to disengage it from the two rear tabs.
4. Reverse Steps 1–3 to reinstall the engine cover.

### 6.2L V8 Engine Cover (L99 Engine Shown, LS3 Similar)



1. Engine Oil Fill Cap
2. Engine Cover

To remove:

1. Remove the engine oil filler cap (1).

2. Lift the engine cover (2) to disengage the two front attachment points.
3. Pull the engine cover forward to disengage it from the horizontal rear attachments.
4. Reverse Steps 1–3 to reinstall the engine cover.

### Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Always use engine oil approved to the proper specification and of the proper viscosity grade. See “Selecting the Right Engine Oil” in this section.
- Check the engine oil level regularly and maintain the proper oil level. See “Checking Engine Oil” and “When to Add Engine Oil” in this section.

- Change the engine oil at the appropriate time. See *Engine Oil Life System* on page 10-11.
- Always dispose of engine oil properly. See “What to Do with Used Oil” in this section.

### Checking Engine Oil

It is a good idea to check the engine oil level at each fuel fill. In order to get an accurate reading, the vehicle must be on level ground. The engine oil dipstick handle is a loop. See *Engine Compartment Overview* on page 10-5 for the location of the engine oil dipstick.

Obtaining an accurate oil level reading is essential:

1. If the engine has been running recently, turn off the engine and allow several minutes for the oil to drain back into the oil sump. Checking the oil level too soon after engine shutoff will not provide an accurate oil level reading.

### Warning

The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

2. Pull out the dipstick and 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, add 1 L (1 qt) of the recommended oil and then recheck the level. See “Selecting the Right Engine Oil” in this section for an explanation of

what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications on page 12-3*.

### Caution

Do not add too much oil. Oil levels above or below the acceptable operating range shown on the dipstick are harmful to the engine. If you find that you have an oil level above the operating range, i.e., the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range, the engine could be damaged. You should drain out the excess oil or limit driving of the vehicle and seek a service professional to remove the excess amount of oil.

See *Engine Compartment Overview on page 10-5* for the location of the engine oil fill cap.

Add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when done.

### Selecting the Right Engine Oil

Selecting the right engine oil depends on both the proper oil specification and viscosity grade. See *Recommended Fluids and Lubricants on page 11-4*.

#### Specification

Ask for and use engine oils that meet the dexos2™ specification.

Engine oils that have been approved by GM as meeting the dexos2 specification are marked with the dexos2 approved logo.

Use of Substitute Engine Oils if dexos2 is unavailable: In the event that dexos2-approved engine oil is not available at an oil change or for maintaining proper oil level, you may use substitute engine oil that meets ACEA C3 of the appropriate viscosity grade.



### ⚠ Caution

Use only engine oil that is approved to the dexos2 specification or equivalent engine oil as defined in the preceding paragraph. Failure to use the recommended engine oil can result in engine damage not covered by the vehicle warranty.

### Viscosity Grade

Use SAE 5W-30 viscosity grade engine oil.

**Cold Temperature Operation:** In an area of extreme cold, where the temperature falls below  $-29^{\circ}\text{C}$  ( $-20^{\circ}\text{F}$ ), an SAE 0W-30 oil may be used. An oil of this viscosity grade will provide easier cold starting for

the engine at extremely low temperatures. When selecting an oil of the appropriate viscosity grade, always select an oil of the correct specification. See “Specification” earlier in this section for more information.

### Engine Oil Additives/Engine Oil Flushes

Do not add anything to the oil. The recommended oils meeting the dexos2 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. See *Engine Oil Messages on page 5-31*. Change the oil as soon as possible within the next 1 000 km (600 mi). It is possible that, if driving under the best conditions, the oil life system might indicate that an oil change is not necessary for up to a year. The engine oil and filter must be changed at least once a year and, at this time, the system must be reset. Your dealer has trained service people who will perform this work and reset the system. It is also important to check the oil regularly over the course of an oil drain interval and keep it at the proper level.

If the system is ever reset accidentally, the oil must be changed at 5 000 km (3,000 mi)

since the last oil change. Remember to reset the oil life system whenever the oil is changed.

After you change the oil, the oil life monitor will need to be reset. See your dealer for service.

See REMAINING OIL LIFE under *Driver Information Centre (DIC) on page 5-22* for information on the engine oil life monitor.

### **Automatic Transmission Fluid**

#### **How to Check Automatic Transmission Fluid**

It is not necessary to check the transmission fluid level. A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to your dealer and have it repaired as soon as possible.

The vehicle is not equipped with a transmission fluid level dipstick. There is a special procedure for checking and changing the

transmission fluid. Because this procedure is difficult, this should be done at the dealer.

Change the fluid and filter at the intervals listed in *Scheduled Maintenance on page 11-1*, and be sure to use the fluid listed in *Recommended Fluids and Lubricants on page 11-4*.

### **Manual Gearbox Fluid**

It is not necessary to check the manual gearbox fluid level. A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to your dealer and have it repaired as soon as possible. See *Recommended Fluids and Lubricants on page 11-4* for the proper fluid to use.

### **Hydraulic Clutch**

For vehicles with a manual transmission, it is not necessary to regularly check brake/clutch fluid unless there is a leak suspected. Adding fluid will not correct a leak.

A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

### When to Check and What to Use



The brake/hydraulic clutch fluid reservoir cap has this symbol on it. The common hydraulic clutch and brake master cylinder fluid reservoir is filled with DOT 3 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview on page 10-5* for reservoir location.

### How to Check and Add Fluid

Visually check the brake/clutch fluid reservoir to make sure the fluid level is at the MIN (minimum) line on the side of the reservoir. The brake/hydraulic clutch fluid system should be closed and sealed.

Do not remove the cap to check the fluid level or to top-off the fluid level. Remove the cap only when necessary to add the proper fluid until the level reaches the MIN line.

### Engine Air Cleaner/Filter

See *Engine Compartment Overview on page 10-5* for the location of the engine air cleaner/filter.

### When to Inspect the Engine Air Cleaner/Filter

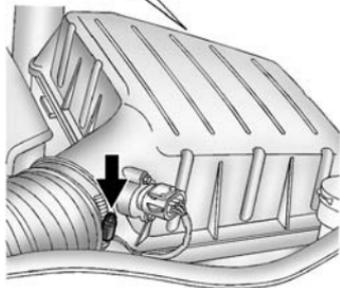
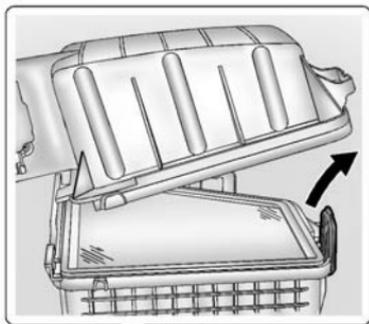
Inspect the air cleaner/filter at the scheduled maintenance intervals and replace it at the appropriate interval. See *Scheduled Maintenance on page 11-1*. If driving in dusty/dirty conditions, inspect the filter at each engine oil change.

### How to Inspect the Engine Air Cleaner/Filter

To inspect the air cleaner/filter, remove the filter from the vehicle and lightly shake the filter to release loose dust and dirt. If the filter remains covered with dirt, a new filter is required.

To inspect or replace the engine air cleaner/filter:

1. Open the bonnet. See *Bonnet on page 10-4*.
2. Locate the air filter housing on the front of the driver side of the engine compartment. See *Engine Compartment Overview on page 10-5*.



**3.6L V6 Engine Air Cleaner/Filter Housing Shown (6.2L V8 Engines Similar)**

3. Loosen the clamp at the duct of the air cleaner/filter housing.
4. Unlatch the retaining clips on the air cleaner/filter housing.
5. Lift the cover at the retaining clip location high enough to clear the retaining clips and pull the cover outward to remove it from the air cleaner/filter housing hinges.
6. Pull straight up on the cover; while holding the cover, remove the air filter.
7. Inspect or replace the air filter. See *Maintenance Replacement Parts* on page 11-5.
8. Reverse Steps 1–6 to reinstall the cover.

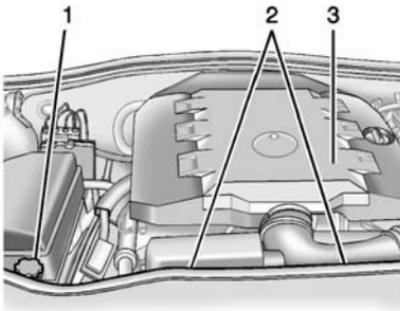
### **Warning**

Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air; it helps to stop flames if the engine backfires. Use caution when working on the engine and do not drive with the air cleaner/filter off.

### **Caution**

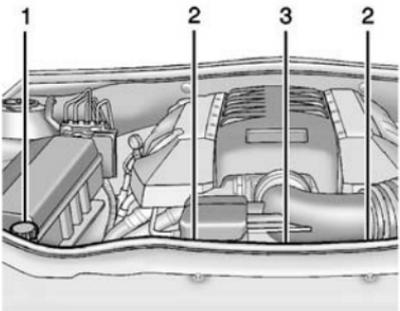
If the air cleaner/filter is off, dirt can easily get into the engine, which could damage it. Always have the air cleaner/filter in place when you are driving.

### Cooling System



3.6L V6 Engine

- 1. Engine Coolant Recovery Bottle
- 2. Electric Cooling Fans (Out of View)
- 3. Radiator Cap (Under Engine Cover)



6.2L V8 Engines (L99 Shown, LS3 Similar)

- 1. Engine Coolant Recovery Bottle
- 2. Electric Cooling Fans (Out of View)
- 3. Radiator Cap (Out of View)

**⚠ Warning**

An electric engine cooling fan under the bonnet can start up even when the engine is not

(Continued)

**Warning (Continued)**

running and can cause injury. Keep hands, clothing, and tools away from any underbonnet electric fan.

If the coolant inside the engine coolant recovery bottle is boiling, do not do anything else until it cools down. The vehicle should be parked on a level surface.

The coolant level should be between the MIN and MAX lines. If it is not, the vehicle may have a leak at the radiator hoses, heater hoses, radiator, water pump, or somewhere else in the cooling system.

### Warning

Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned.

Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.

If there seems to be no leak, with the engine on, check to see if the electric engine cooling fans are running. If the engine is overheating, the fans should be running. If it is not, the vehicle needs service. Turn off the engine.

### Caution

Using coolant other than DEX-COOL<sup>®</sup> can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner. Any repairs would not be covered by the vehicle warranty. Always use DEX-COOL (silicate-free) coolant in the vehicle.

## Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL<sup>®</sup> engine coolant. This coolant is designed to remain in the vehicle for 5 years or 240 000 km (150,000 mi), whichever occurs first.

The following explains the cooling system and how to check and add coolant when it is low. If there is a problem with engine overheating, see *Engine Overheating* on page 10-21.

## What to Use

### Warning

Adding only plain water or some other liquid to the cooling system can be dangerous. Plain water and other liquids, can boil before the proper coolant mixture will. The coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, the engine could get too hot but you would not get the overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant.

Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant. If using this mixture, nothing else needs to be added. 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 aluminium parts.
- Helps keep the proper engine temperature.

**⚠ Caution**

If improper coolant mixture, inhibitors, or additives are used in the vehicle cooling system, the engine could overheat and be

(Continued)

**Caution (Continued)**

damaged. Too much water in the mixture can freeze and crack engine cooling parts. The repairs would not be covered by the vehicle warranty. Use only the proper mixture of engine coolant for the cooling system. See *Recommended Fluids and Lubricants* on page 11-4.

Never dispose of engine coolant by putting it in the refuse, pouring it on the ground, or into sewers, streams, or bodies of water. Have the coolant changed by an authorised service centre, 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 coolant as follows:

1. Turn the ignition off.
2. Locate the engine coolant recovery bottle. See *Engine Compartment Overview* on page 10-5.



3. Turn the coolant dipstick cap counterclockwise and slowly pull out the dipstick.



- There are maximum and minimum markings on the dipstick. When the engine is cold, the coolant level should be at or above the MIN mark on the dipstick. After the vehicle has been driven and the engine is at normal operating temperature, the level should be somewhere between half full and the maximum mark.
- If the coolant level is correct, replace the dipstick and turn the cap clockwise to secure.

### How to Add Coolant to the Coolant Recovery Bottle

#### Warning

You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.

#### Caution

This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause the engine to overheat and be severely damaged.

Add coolant as follows:

- Turn the engine coolant recovery bottle dipstick cap counterclockwise and slowly pull out the dipstick.

- Pour the coolant into the engine coolant recovery bottle.
- When the level is correct, replace the dipstick and turn the cap clockwise to secure.

### How to Add Coolant to the Radiator

#### Warning

You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.

#### Caution

This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause the engine to overheat and be severely damaged.

**Warning**

An electric engine cooling fan under the bonnet can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underbonnet electric fan.

**Warning**

Steam and scalding liquids from a hot cooling system can blow out and burn you badly. They are under pressure, and if you turn the surge tank pressure cap - even a little - they can come out at high speed. Never turn the cap when the cooling system, including the surge tank pressure cap, is hot. Wait for the cooling system and surge tank pressure cap to cool if you ever have to turn the pressure cap.

If coolant is needed, add the proper mixture directly to the radiator, but be sure the cooling system is cool before this is done.

If no coolant is visible in the engine coolant recovery bottle, add coolant as follows:

**3.6L V6 Engine Fill Procedure**

1. Locate the radiator cap. See *Engine Compartment Overview on page 10-5.*
2. Remove the engine cover to access the radiator cap. See *Engine Cover on page 10-8.*



3. Cover the radiator cap with a thick cloth and turn it slowly counterclockwise and remove.

4. If there is no coolant visible or the level is low, slowly fill the system through the radiator cap opening with a 50/50 mixture of DEX-COOL and clean drinkable water.

Wait 30 seconds for coolant to settle and continue filling if the level drops.

Do not spill coolant on the accessory drive belts.

If a spill occurs, rinse the belt with fresh water.

5. Start the engine.
6. With the engine idling, continue to add coolant through the radiator cap opening until full. Wait 30 seconds for the coolant to settle and top up, if the level drops.
7. Once the system is full, put the radiator cap back on by turning clockwise.

## 10-20 Vehicle Care

- With the engine still running, raise the engine to 2500 rpm for 30–40 seconds.
- Turn the engine off.
- Repeat Steps 2–7 then turn the engine off.
- Allow engine to cool for 45 minutes. Top off coolant through the radiator cap opening and reinstall the radiator cap.
- Reinstall the engine cover. See *Engine Cover on page 10-8*.



- Check the coolant level in the engine coolant recovery bottle and fill it until the level is at the top symbol on the dipstick.

### 6.2L V8 Engine Fill Procedure

- Locate the radiator cap. See *Engine Compartment Overview on page 10-5*.



- Cover the radiator cap with a thick cloth and turn it slowly counterclockwise and remove.
- If there is no coolant visible or the level is low, slowly fill the system through the radiator cap opening with a 50/50 mixture of clean, drinkable water and DEX-COOL coolant until full.

Wait 30 seconds for coolant to settle and top up if the level drops.

Do not spill coolant on the accessory drive belts.

If a spill occurs, rinse the belt with fresh water.

- Start the engine.
- With the engine idling, top up the coolant through the radiator cap opening until full.  
  
Wait 30 seconds for the coolant to settle and top up, if the level drops.
- Once the system is full, put the radiator cap back on by turning clockwise.
- Turn the engine off.



8. Check the coolant level in the engine coolant recovery bottle and fill it until the level is at the top mark on the dipstick.

**⚠ Caution**

If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.

## Engine Overheating

The vehicle has an indicator to warn of engine overheating.

There is an engine coolant temperature gauge on the vehicle instrument panel. See *Engine Coolant Temperature Gauge* on page 5-10.

If the decision is made not to lift the bonnet when this warning appears, but instead get service help right away.

If the decision is made to lift the bonnet, make sure the vehicle is parked on a level surface.

Then check to see if the engine cooling fans are running. If the engine is overheating, both fans should be running. If they are not, do not continue to run the engine and have the vehicle serviced.

**⚠ Caution**

Running the engine without coolant may cause damage or a fire. Vehicle damage would not be covered by the vehicle warranty.

### If Steam Is Coming from the Engine Compartment

**⚠ Warning**

Steam from an overheated engine can burn you badly, even if you just open the bonnet. Stay away from the engine if you see or hear steam coming from it. Just turn it off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the bonnet.

(Continued)

### Warning (Continued)

If you keep driving when the engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop the engine if it overheats, and get out of the vehicle until the engine is cool.

### If No Steam Is Coming from the Engine Compartment

If an engine overheat warning is displayed but no steam can be seen or heard, the problem may not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day.
- Stops after high-speed driving.
- Idles for long periods in traffic.
- Tows a trailer.

If the overheat warning is displayed with no sign of steam:

1. Turn the air conditioning off.
2. Turn the heater on to the highest temperature and to the highest fan speed. Open the windows as necessary.
3. 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 temperature overheat gauge is no longer in the overheat zone or an overheat warning no longer displays, the vehicle can be driven. Continue to drive the vehicle slowly for about 10 minutes. Keep a safe vehicle distance from the vehicle in front. If the warning does not come back on, continue to drive normally and have the cooling system checked for proper fill and function.

If the warning continues, pull over, stop, and park the vehicle right away.

If there is no sign of steam, idle the engine for three minutes while parked. If the warning is still displayed, turn off the engine until it cools down.

### Power Steering Fluid (SS models)

The vehicle has electric power steering and does not use power steering fluid.

### Power Steering Fluid (non-SS model)



The power steering fluid reservoir is under the engine cover on the driver side toward the front of the engine compartment. See *Engine Compartment Overview* on page 10-5.

## When to Check Power Steering Fluid

It is not necessary to regularly check power steering fluid unless you suspect there is a leak in the system or an unusual noise is heard. A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

## How to Check Power Steering Fluid

Check the level after the vehicle has been driven for at least 20 minutes so the fluid is warm.

To check the power steering fluid:

1. Turn the ignition key to LOCK/OFF and let the engine compartment cool down.
2. Remove the engine cover. See *Engine Cover* on page 10-8.
3. Wipe the cap and the top of the reservoir clean.
4. Turn the cap counterclockwise and pull it straight up.

5. Wipe the dipstick with a clean rag.
6. Replace the cap and completely tighten it.
7. Remove the cap again and look at the fluid level on the dipstick.



When the engine is hot, the level should be at the hot MAX level. When the engine is cold, the fluid level should be between MIN and MAX on the dipstick.

## What to Use

To determine what kind of fluid to use, see *Recommended Fluids and Lubricants* on page 11-4. Always use the proper fluid.

## Washer Fluid

### What to Use

When windscreen washer fluid is needed, be sure to read the manufacturer's instructions before use. If operating the vehicle in an area where the temperature can fall below freezing, use a fluid that has sufficient protection against freezing.

### Adding Washer Fluid



Open the cap with the washer symbol on it. Add washer fluid until the reservoir is full. See *Engine Compartment Overview* on page 10-5 for reservoir location.

### Caution

- Do not use engine coolant (antifreeze) in the windscreen washer. It can damage the windscreen washer system and paint.
- Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage the washer fluid tank and other parts of the washer system.
- When using concentrated washer fluid, follow the manufacturer instructions for adding water.
- Fill the washer fluid tank only three-quarters full when it is very cold. This allows for fluid expansion if freezing occurs, which could damage the tank if it is completely full.

## Brakes

Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed. The sound can come and go or be heard all the time when the vehicle is moving, except when applying the brake pedal firmly.

### Warning

The brake wear warning sound means that soon the brakes will not work well. That could lead to a crash. When the brake wear warning sound is heard, have the vehicle serviced.

### Caution

Continuing to drive with worn-out brake pads could result in costly brake repair.

Some driving conditions or climates can cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with the brakes.

Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tyres are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to torque specifications. See *Capacities and Specifications on page 12-3*.

Brake pads should be replaced as complete sets.

### Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign that brake service may be required.

### Replacing Brake System Parts

Always replace brake system parts with new, approved replacement parts. If this is not done, the brakes may not work properly. The braking

performance expected can change in many other ways if the wrong replacement brake parts are installed or parts are improperly installed.

## Brake Fluid



The brake/clutch master cylinder reservoir is filled with DOT 3 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview* on page 10-5 for the location of the reservoir.

There are only two reasons why the fluid level in the reservoir might go down:

- The fluid level goes down because of normal brake lining wear. When new linings are installed, the fluid level goes back up.
- A fluid leak in the brake/clutch hydraulic system can also cause a low fluid level. Repair the brake/clutch hydraulic system, since a leak means that sooner or later the brakes and/or clutch will not work well.

Do not top up the brake/clutch fluid. Adding fluid does not correct a leak. If fluid is added when the linings are worn, there will be too much fluid when new brake linings are installed. Add or remove brake fluid, as necessary, only when work is done on the brake/clutch 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/clutch hydraulic system.

When the brake/clutch fluid falls to a low level, the brake warning light comes on. See *Brake System Warning Light* on page 5-17.

### What to Add

Use only new DOT 3 brake fluid from a sealed container. See *Recommended Fluids and Lubricants* on page 11-4.

Always clean the brake/clutch fluid reservoir cap and the area around the cap before removing it. This helps keep dirt from entering the reservoir.

 **Warning**

With the wrong kind of fluid in the brake/clutch hydraulic system, the brakes might not work well. This could cause a crash. Always use the proper brake/clutch fluid.

 **Caution**

- Using the wrong fluid can badly damage brake/clutch hydraulic system parts. For example, just a few drops of mineral-based oil, such as engine oil, in the brake hydraulic system can damage brake hydraulic system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.

(Continued)

**Caution (Continued)**

- If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Be careful not to spill brake fluid on the vehicle. If you do, wash it off immediately.

**Battery**

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

The battery is in the boot, under the floor panel. Refer to the replacement number shown on the original battery label when a new battery is needed.

 **Warning**

Batteries should not be disposed of with regular refuse. Make sure that you dispose of old batteries in accordance with environmental protection regulations to help protect the environment and your health.



 **Warning**

Do not use a match or flame near a vehicle's battery. If you need more light, use a torch.

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.

(Continued)

**Warning (Continued)**

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.

**Rear Axle**

**When to Check Lubricant**

It is not necessary to regularly check the rear axle fluid, unless a leak is suspected or an unusual noise is heard. A fluid loss could

indicate a problem. Have it inspected and repaired by your dealer.

See *Scheduled Maintenance on page 11-1* and *Recommended Fluids and Lubricants on page 11-4*.

**Starter Switch Check**

 **Warning**

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle.
2. Apply both the parking brake and the regular brake.

Do not use the accelerator pedal, and be ready to turn off the engine immediately if it starts.

3. For automatic transmission vehicles, try to start the engine in each gear. The vehicle should start only in P (Park) or N (Neutral). If the vehicle starts in any other position, contact your dealer for service.

For manual gearbox vehicles, put the shift lever in Neutral, push the clutch pedal down halfway and try to start the engine. The vehicle should start only when the clutch pedal is pushed down all the way to the floor. If the vehicle starts when the clutch pedal is not pushed all the way down, contact your dealer for service.

### Automatic Transmission Shift Lock Control Function Check

 **Warning**

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle. It should be parked on a level surface.
2. Apply the parking brake. Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the ignition on, but do not start the engine. Without applying the regular brake, try to move the gear lever out of P (Park) with

normal effort. If the shift lever moves out of P (Park), contact your dealer for service.

### Ignition Transmission Lock Check

While parked and with the parking brake set, try to turn the ignition to LOCK/OFF in each shift lever position.

- The ignition should turn to LOCK/OFF only when the shift lever is in P (Park).
- The ignition key should come out only in LOCK/OFF.

Contact your dealer if service is required.

## Park Brake and P (Park) Mechanism Check

### Warning

When you are doing this check, the vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of the vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, apply 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.

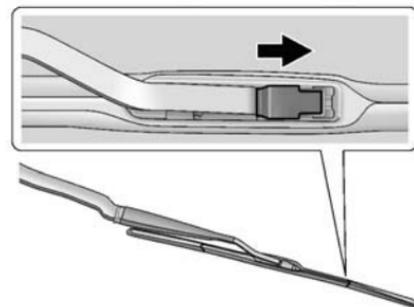
## Wiper Blade Replacement

Windscreen wiper blades should be inspected for wear and cracking. See *Scheduled Maintenance on page 11-1*.

Replacement blades come in different types and are removed in different ways. For proper type and length, see *Maintenance Replacement Parts on page 11-5*.

To replace the windscreen wiper blade:

1. Pull the windscreen wiper assembly away from the windscreen.



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 towards the windshield far enough to release it from the J-hooked end of the wiper arm.

4. Remove the wiper blade.

Allowing the wiper blade arm to touch the windshield when no wiper blade is installed could damage the windshield. Any damage that occurs would not be covered by the vehicle warranty. Do not allow the wiper blade arm to touch the windshield.

5. Reverse Steps 1–3 for wiper blade replacement.

### Windscreen Replacement

If the Head-Up display (HUD) system and the windshield need to be replaced, get one that is designed for HUD or the HUD image may look out of focus.

### Headlamp Aiming

Headlamp alignment has been preset and should need no further adjustment.

If the vehicle is damaged in a crash, the headlamp alignment may be affected. If adjustment to the headlamps is necessary, see your dealer.

### Bulb Replacement

For the proper type of replacement bulbs, see *Replacement Bulbs on page 10-32*.

For any bulb-changing procedure not listed in this section, contact your dealer.

### High Intensity Discharge (HID) Lighting



The high intensity discharge lighting system operates at a very high voltage. If you try to service any of the system components, you could be seriously injured. Have your dealer or a qualified technician service them.

After an HID headlamp bulb has been replaced, the beam might be a slightly different shade than it was originally. This is normal.

## LED Lighting

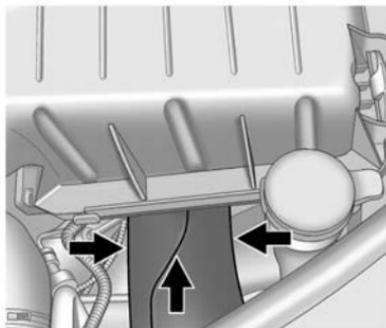
This vehicle has several LED lamps. For replacement of any LED lighting assembly, contact your dealer.

## Front Turn Signal and Parking Lamps

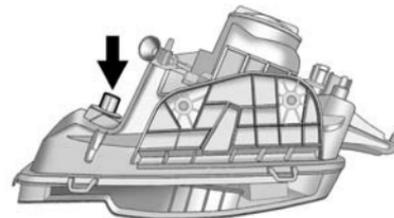
This vehicle has an HID headlamp and a turn signal lamp on the headlamp assembly. The parking lamp is also the function of the HID headlamp. See *High Intensity Discharge (HID) Lighting* on page 10-30 for more information.

To replace the turn signal bulb:

1. Open the bonnet. See *Bonnet* on page 10-4.



2. Press in on the tabs located on the sides of the duct and then push the duct rearward into the air cleaner/filter housing.

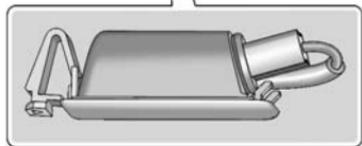


3. Disconnect the wiring harness and turn the bulb socket counterclockwise to remove it from the headlamp assembly.
4. Pull the bulb straight out from the socket.
5. Push the new bulb into the socket and reinstall the socket into the headlamp assembly by turning it clockwise.
6. Reconnect the electrical connector.

- Pull the duct back out of the air cleaner/filter housing until the tabs snap the duct back into position.

### Number Plate Lamp

To replace one of these bulbs:



- Unclip the license plate lamp from the apron opening.
- Pull the license plate lamp down through the apron opening.

- Turn the bulb socket counterclockwise and pull the bulb straight out of the lamp socket.
- Install the new bulb.
- Push the bulb straight into the socket and turn clockwise to reinstall.
- Reinstall the license plate lamp by lifting it through the apron opening until the clip is in place.

### Replacement Bulbs

| Exterior Lamp           | Bulb Number   |
|-------------------------|---------------|
| Front Turn Signal Light | PY21W<br>T-20 |
| Number Plate Lamp       | W5WLL         |

For replacement bulbs not listed here, contact your dealer.

## Electrical System

### Electrical System Overload

The vehicle has fuses and circuit breakers to protect against an electrical system overload.

When the current electrical load is too heavy, the circuit breaker opens and closes, protecting the circuit until the current load returns to normal or the problem is fixed. This greatly reduces the chance of circuit overload and fire caused by electrical problems.

Fuses and circuit breakers protect power devices in the vehicle.

Replace a bad fuse with a new one of the identical size and rating.

If there is a problem on the road and a fuse needs to be replaced, the same amperage fuse can be borrowed. Choose some feature of the vehicle that is not needed to use and replace it as soon as possible.

## Headlamp Wiring

An electrical overload may cause the lamps to go on and off, or in some cases to remain off. Have the headlamp wiring checked right away if the lamps go on and off or remain off.

## Windscreen Wipers

If the wiper motor overheats due to heavy snow or ice, the windscreen 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 windscreen before using the windscreen wipers.

If the overload is caused by an electrical problem and not snow or ice, be sure to get it fixed.

## Fuses and Circuit Breakers

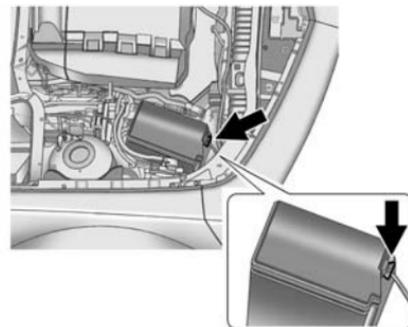
The wiring circuits in the vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of damage caused by electrical problems.

To check a fuse, look at the silver-coloured band inside the fuse. If the band is broken or melted, replace the fuse. Be sure to replace a bad fuse with a new one of the identical size and rating.

Fuses of the same amperage can be temporarily borrowed from another fuse location, if a fuse goes out. Replace the fuse as soon as possible.

To identify and check fuses, circuit breakers, and relays, see *Engine Compartment Fuse Block on page 10-33*, *Instrument Panel Fuse Block on page 10-36*, and *Rear Compartment Fuse Block on page 10-39*.

## Engine Compartment Fuse Block



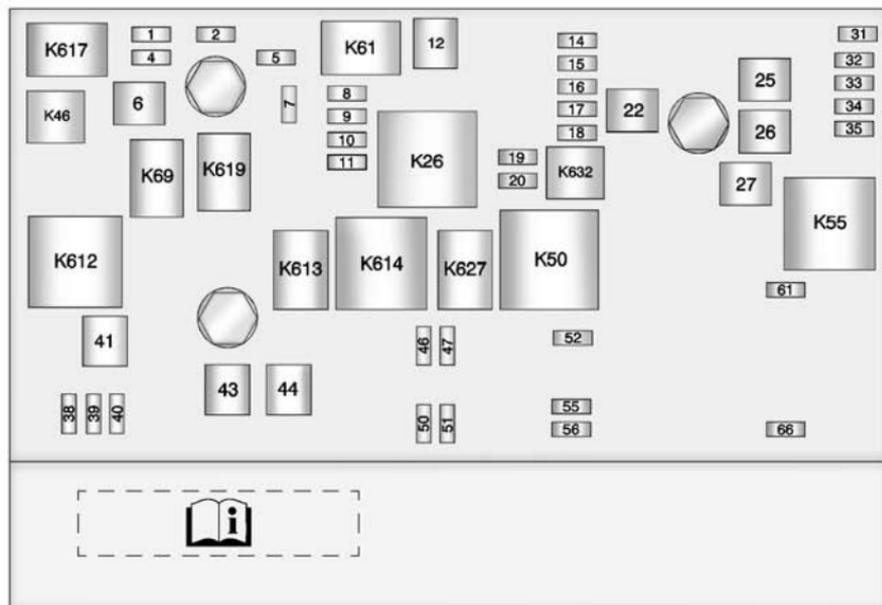
To remove the hinged fuse block cover, press the clip at the front of the cover, and swing it up.

### Caution

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.

## 10-34 Vehicle Care

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The vehicle may not be equipped with all of the fuses, relays, and features shown.

| J-Case Fuses | Usage                      |
|--------------|----------------------------|
| 6            | Wiper                      |
| 12           | Starter                    |
| 22           | Brake Vacuum Pump          |
| 25           | Power Windows Rear         |
| 26           | Power Windows Front        |
| 27           | Rear Defog                 |
| 41           | Cooling Fan High           |
| 43           | Antilock Brake System Pump |
| 44           | Cooling Fan Low            |

| MiniFuses | Usage                                  |
|-----------|--|
| 1         | Air Conditioning Compressor Clutch     |
| 2         | Transmission Control Module            |
| 4         | Headlamp Washer                        |
| 5         | Engine Control Module Main             |
| 7         | Pre-Catalytic Converter Oxygen Sensor  |
| 8         | Post-Catalytic Converter Oxygen Sensor |
| 9         | Fuel Injectors - Even                  |
| 10        | Fuel Injectors - Odd                   |
| 11        | Cooling Fan Relay                      |
| 14        | Manifold Air Flow/ Chassis Control     |
| 15        | Ignition                               |
| 16        | Run/Crank IP                           |

| MiniFuses | Usage   |
|-----------|---|
| 17        | Sensing Diagnostic Module/Ignition                          |
| 18        | Run/Crank Body  |
| 19        | Transmission Control Module/ Ignition                       |
| 20        | Engine Control Module/Ignition                              |
| 31        | Outside Rearview Mirror                                     |
| 32        | Canister Vent Solenoid                                      |
| 33        | Body Control Module #6                                      |
| 34        | Sunroof   |
| 35        | Front Heated Seats  |
| 38        | Washer Pump Front   |
| 39        | Adaptive Forward Lighting/Active Headlamp Levelling Battery |

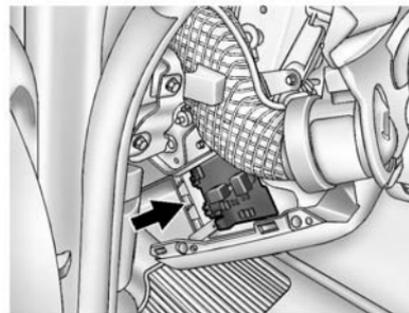
## 10-36 Vehicle Care

| MiniFuses | Usage                            |
|-----------|----------------------------------|
| 40        | Anti-locking Brake System Valves |
| 46        | HID Headlamp - Left Front        |
| 47        | HID Headlamp - Right Front       |
| 50        | Fog Lamps                        |
| 51        | Horn                             |
| 52        | Spare                            |
| 55        | High-Beam Headlamp - Right Front |
| 56        | High-Beam Headlamp - Left Front  |
| 61        | Heated Mirror                    |
| 66        | Anti-Theft Warning Siren         |

| Mini Relays | Usage               |
|-------------|---------------------|
| K26         | Powertrain          |
| K50         | Run/Crank           |
| K55         | Rear Defog          |
| K612        | Cooling Fan High    |
| K614        | Cooling Fan Control |

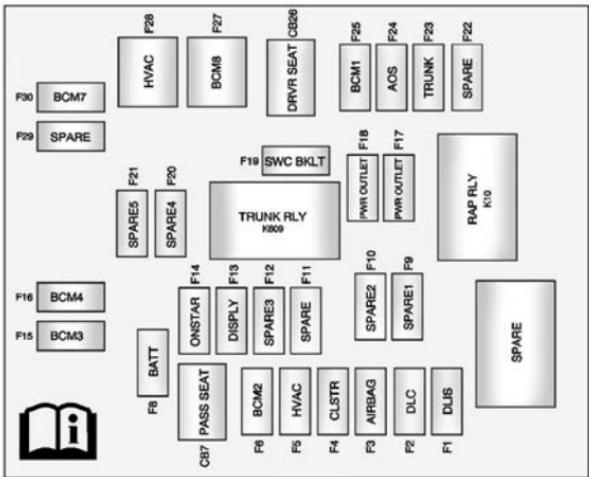
| Micro Relays | Usage                              |
|--------------|------------------------------------|
| K46          | Headlamp Washer                    |
| K61          | Starter                            |
| K69          | Wiper Control                      |
| K613         | Cooling Fan Low                    |
| K617         | Air Conditioning Compressor Clutch |
| K619         | Wiper Speed                        |
| K627         | High Intensity Discharge Headlamps |
| K632         | Brake Vacuum Pump                  |

## Instrument Panel Fuse Block



The instrument panel fuse block is on the end of the instrument panel, on the driver side of the vehicle. To access the fuses, open the fuse panel door by pulling out.

To reinstall the door, push the door back into its original location.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

| Fuses | Usage                          |
|-------|--------------------------------|
| F1    | Discrete Logic Ignition Switch |
| F2    | Diagnostic Link Connector      |

| Fuses | Usage  |
|-------|--|
| F3    | Airbag   |
| F4    | Cluster  |
| F5    | Heating Ventilation Air Conditioning Controller  |
| F6    | Body Control Module 2                            |
| F8    | Battery  |
| F9    | Spare  |
| F10   | Spare  |
| F11   | Spare  |
| F12   | Spare  |
| F13   | Display  |
| F14   | OnStar® Universal Hands-Free Phone (If Equipped) |
| F15   | Body Control Module 3                            |

## 10-38 Vehicle Care

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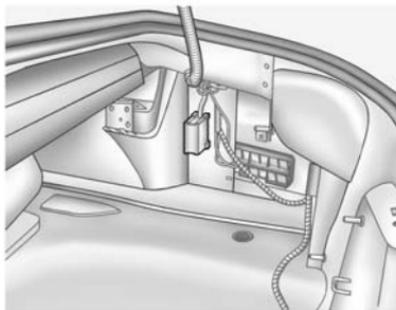
| Fuses | Usage                             |
|-------|-----------------------------------|
| F16   | Body Control Module 4             |
| F17   | Power Outlet 1                    |
| F18   | Power Outlet 2                    |
| F19   | Steering Wheel Controls Backlight |
| F20   | Spare                             |
| F21   | Spare                             |
| F22   | Spare                             |
| F23   | Boot                              |
| F24   | Automatic Occupant Sensing        |
| F25   | Body Control Module 1             |

| Fuses | Usage   |
|-------|---|
| F27   | Body Control Module 8                           |
| F28   | Front Heater, Ventilation, and Air Conditioning |
| F29   | Spare   |
| F30   | Body Control Module 7                           |

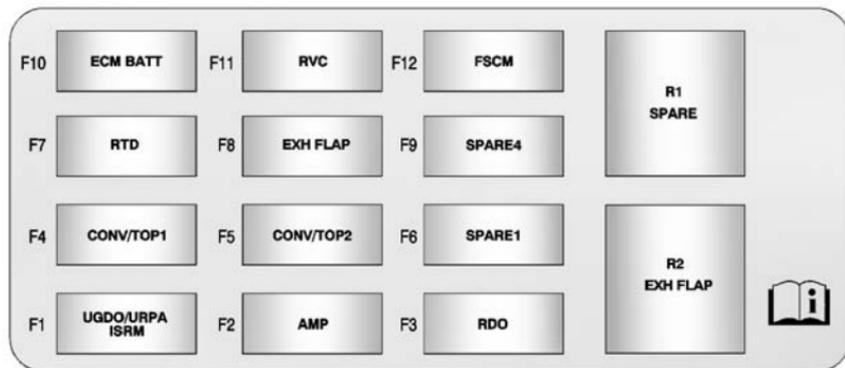
| Circuit Breakers | Usage          |
|------------------|----------------|
| CB7              | Passenger Seat |
| CB26             | Driver Seat    |

| Relays | Usage                    |
|--------|--------------------------|
| K10    | Retained Accessory Power |
| K609   | Boot                     |
| SPARE  | SPARE                    |

## Rear Compartment Fuse Block



The rear compartment fuse block is on the right side of the boot behind a cover. Remove the convenience net retainers, the rear sill plate, and the passenger side trim retainers, then swing the trim out of the way.



The vehicle may not be equipped with all of the fuses, relays, and features shown.

| Fuses | Usage   |
|-------|---|
| F1    | Universal Remote System/Rear Parking Assist/ Inside Rearview Mirror |
| F2    | Amplifier   |
| F3    | Radio   |

| Fuses | Usage                         |
|-------|-------------------------------|
| F4    | Convertible Top 1             |
| F5    | Convertible Top 2             |
| F6    | Spare 1                       |
| F7    | Real Time Damping             |
| F8    | Active Exhaust Flap           |
| F9    | Spare 4                       |
| F10   | Engine Control Module/Battery |
| F11   | Regulated Voltage Control     |
| F12   | Fuel System Control Module    |

| Relays | Usage               |
|--------|---------------------|
| R1     | Spare               |
| R2     | Active Exhaust Flap |

## Wheels and Tyres

### Tyres

Every new GM vehicle has high-quality tyres made by a leading tyre manufacturer. See the warranty manual for information regarding the tyre warranty and where to get service. For additional information refer to the tyre manufacturer.

#### Warning

- Poorly maintained and improperly used tyres are dangerous.
- Overloading the tyres can cause overheating as a result of too much flexing. There could be a blowout

(Continued)

#### Warning (Continued)

and a serious crash. See *Vehicle Load Limits on page 9-10*.

- Underinflated tyres pose the same danger as overloaded tyres. The resulting crash could cause serious injury. Check all tyres frequently to maintain the recommended pressure. Tyre pressure should be checked when the tyres are cold.
- Overinflated tyres are more likely to be cut, punctured, or broken by a sudden impact - such as when hitting a pothole. Keep tyres at the recommended pressure.

(Continued)

**Warning (Continued)**

- Worn or old tyres can cause a crash. If the tread is badly worn, replace them.
- Replace any tyres that have been damaged by impacts with potholes, curbs, etc.
- Improperly repaired tyres can cause a crash. Only the dealer or an authorised tyre service centre should repair, replace, dismount, and mount the tyres.
- Do not spin the tyres in excess of 56 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tyres to explode.

**All-Season Tyres**

This vehicle may come with all-season tyres. These tyres are designed to provide good overall performance on most road surfaces and weather conditions. Original equipment tyres designed to GM's specific tyre performance criteria have a TPC specification code moulded onto the sidewall. Original equipment all-season tyres can be identified by the last two characters of this TPC code, which will be "MS."

Consider installing winter tyres on the vehicle if frequent driving on snow or ice-covered roads is expected. All-season tyres provide adequate performance for most winter driving conditions, but they may not offer the same level of traction or performance as winter tyres on snow or ice-covered roads. See *Winter Tyres on page 10-41*.

**Winter Tyres**

This vehicle was not originally equipped with winter tyres. Winter tyres are designed for increased traction on snow and ice-covered roads. Consider installing winter tyres on the vehicle if frequent driving on ice or snow covered roads is expected. See your dealer for details regarding winter tyre availability and proper tyre selection. Also, see *Buying New Tyres on page 10-51*.

With winter tyres, there may be decreased dry road traction, increased road noise and shorter tread life. After changing to winter tyres, be alert for changes in the vehicle handling and braking.

If using winter tyres:

- Use tyres of the same brand and tread type on all four wheel positions.

## 10-42 Vehicle Care

- Use only radial ply tyres of the same size, load range and speed rating as the original equipment tyres.

Winter tyres with the same speed rating as the original equipment tyres may not be available for H, V, W, Y and ZR speed rated tyres. If winter tyres with a lower speed rating are chosen, never exceed the tyre's maximum speed capability.

### Summer Tyres

#### High Performance Summer Tyres

This vehicle may come with 245/45ZR20 and 275/40ZR20, 245/40ZR21 and 275/35ZR21, or 285/35ZR20 and 305/35ZR20 high performance summer tyres. These tyres have a special tread and compound that are optimised for maximum dry and wet road performance. This special tread and compound will have decreased performance in cold climates, and on ice and snow. We recommend installing winter tyres 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 Tyres on page 10-41*.

#### Caution

High performance summer tyres 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 tyres indoors and at temperatures above -7°C (20°F) when not in use. If the tyres 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

(Continued)

#### Caution (Continued)

directly on the tyres. Always inspect tyres before use. See *Tyre Inspection on page 10-48*.

### Tyre Pressure

Tyres need the correct amount of air pressure to operate effectively.

#### Caution

Neither tyre underinflation nor overinflation is good. Underinflated tyres, or tyres that do not have enough air, can result in:

- Tyre overloading and overheating which could lead to a blowout.
- Premature or irregular wear.

(Continued)

**Caution (Continued)**

- Poor handling.
- Reduced fuel economy.

Overinflated tyres, or tyres that have too much air, can result in:

- Unusual wear.
- Poor handling.
- Rough ride.
- Needless damage from road hazards.

The Tyre and Loading Information label on the vehicle indicates the original equipment tyres and the correct cold tyre inflation pressures. The recommended pressure is the minimum air pressure needed to support the vehicle's maximum

load carrying capacity. See *Vehicle Load Limits* on page 9-10.

How the vehicle is loaded affects vehicle handling and ride comfort. Never load the vehicle with more weight than it was designed to carry.

**When to Check**

Check the tyres once a month or more. Do not forget the compact spare, if the vehicle has one. The cold compact spare tyre pressure should be at 420 kPa (60 psi). See *Compact Spare Tyre* on page 10-71.

**How to Check**

Use a good quality pocket-type gauge to check tyre pressure. Proper tyre inflation cannot be determined by looking at the tyre. Check the tyre inflation pressure when the tyres 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 tyre valve stem. Press the tyre gauge firmly onto the valve to get a pressure measurement. If the cold tyre inflation pressure matches the recommended pressure on the Tyre 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 centre of the tyre valve to release air.

Recheck the tyre pressure with the tyre gauge.

Return the valve caps on the valve stems to prevent leaks and keep out dirt and moisture.

### Tyre Pressure for High-Speed Operation

#### Warning

Driving at high speeds, 160 km/h (100 mph) or higher, puts an additional strain on tyres. Sustained high-speed driving causes excessive heat build-up and can cause sudden tyre failure. You could have a crash and you or others could be killed. Some high-speed rated tyres require inflation pressure adjustment for high-speed operation. When speed limits and road conditions are such that a vehicle can be driven at high speeds, make sure the tyres are rated for high-speed operation, in excellent condition, and set to the correct cold tyre inflation pressure for the vehicle load.

Vehicles with 245/45ZR20 103Y, P245/50ZR19 104W and 275/40ZR20 106Y size tires, have tires capable of high speed use. Make sure the tires are inflated to the recommended cold inflation pressures before operating the vehicle at speeds over 160 km/h (100 mph). See *Vehicle Load Limits on page 9-10* and *Tyre Pressure on page 10-42*.

Return the tyres to the recommended cold tyre inflation pressure when high-speed driving has ended. See *Vehicle Load Limits on page 9-10* and *Tyre Pressure on page 10-42*.

### Tyre Pressure Monitor System

#### Caution

Modifications made to the Tyre Pressure Monitor System (TPMS) by anyone other than an

(Continued)

#### Caution (Continued)

authorised service facility may void authorisation to use the system.

The Tyre Pressure Monitor System (TPMS) uses radio and sensor technology to check tyre pressure levels. The TPMS sensors monitor the air pressure in your vehicle's tyres and transmit tyre pressure readings to a receiver located in the vehicle.

Each tyre, 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 tyre inflation pressure label. (If your vehicle has tyres of a different size than the size indicated on the vehicle placard or tyre inflation pressure label, you should determine the proper tyre inflation pressure for those tyres.)

As an added safety feature, your vehicle has been equipped with a tyre pressure monitoring system (TPMS) that illuminates a low tyre pressure telltale when one or more of your tyres is significantly under-inflated.

Accordingly, when the low tyre pressure telltale illuminates, you should stop and check your tyres as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tyre causes the tyre to overheat and can lead to tyre failure. Under-inflation also reduces fuel efficiency and tyre tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tyre maintenance, and it is the driver's responsibility to maintain correct tyre pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tyre 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 tyre 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 tyre pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tyres or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tyres or wheels on your vehicle to ensure that the replacement or

alternate tyres and wheels allow the TPMS to continue to function properly.

See *Tyre Pressure Monitor Operation* on page 10-45 for additional information.

See *Declaration of Conformity (Transmission Systems)* on page 13-1 or *Declaration of Conformity (Tyre Jack)* on page 13-2.

## **Tyre Pressure Monitor Operation**

This vehicle may have a Tyre Pressure Monitor System (TPMS). The TPMS is designed to warn the driver when a low tyre pressure condition exists. TPMS sensors are mounted onto each tyre and wheel assembly, excluding the spare tyre and wheel assembly. The TPMS sensors monitor the air pressure in the tyres and transmit the tyre pressure readings to a receiver located in the vehicle.



When a low tyre pressure condition is detected, the TPMS illuminates the low tyre pressure warning light located on the instrument cluster. If the warning light comes on, stop as soon as possible and inflate the tyres to the recommended pressure shown on the Tyre and Loading Information label. See *Vehicle Load Limits on page 9-10*.

A message to check the pressure in a specific tyre displays in the Driver Information Centre (DIC) display. The low tyre pressure warning light and the DIC warning message come on at each ignition cycle until the tyres are inflated to the correct inflation pressure. Using the DIC, tyre pressure levels can be viewed. For additional information and

details about the DIC operation and displays see *Driver Information Centre (DIC) on page 5-22*.

The low tyre 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 must be inflated to the proper pressure.

A Tyre and Loading Information label shows the size of the original equipment tyres and the correct inflation pressure for the tyres when they are cold. See *Vehicle Load Limits on page 9-10*, for an example of the Tyre and Loading Information label and its location. Also see *Tyre Pressure on page 10-42*.

The TPMS can warn about a low tyre pressure condition but it does not replace normal tyre maintenance. See *Tyre Inspection on page 10-48*, *Tyre Rotation on page 10-49* and *Tyres on page 10-40*.

**⚠ Caution**

Tyre sealant materials are not all the same. A non-approved tyre sealant could damage the TPMS sensors. TPMS sensor damage caused by using an incorrect tyre sealant is not covered by the vehicle warranty. Always use only the GM approved tyre sealant available through your dealer or included in the vehicle.

Factory-installed Tyre Inflator Kits use a GM-approved liquid tyre sealant. Using non-approved tyre sealants could damage the TPMS sensors. See *Tyre Sealant and Compressor Kit on page 10-57* for information regarding the inflator kit materials and instructions.

## TPMS Malfunction Light and Message

The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. When the system detects a malfunction, the low tyre 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 tyres has been replaced with the spare tyre. The spare tyre does not have a TPMS sensor. The malfunction light and DIC message should go off after the road tyre 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 tyres. 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 DIC message and the malfunction light should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.
- Replacement tyres or wheels do not match the original equipment tyres or wheels. Tyres and wheels other than those recommended could prevent the TPMS from functioning properly. See *Buying New Tyres on page 10-51*.

- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

If the TPMS is not functioning properly, it cannot detect or signal a low tyre condition. See your dealer for service if the TPMS malfunction light and DIC message come on and stay on.

## TPMS Sensor Matching Process

Each TPMS sensor has a unique identification code. The identification code needs to be matched to a new tyre/wheel position after rotating the tyres or replacing one or more of the TPMS sensors. The TPMS sensor matching process should also be performed after replacing a spare tyre with a road tyre 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 tyre/wheel positions, using a TPMS

relearn tool, in the following order: driver side front tyre, passenger side front tyre, passenger side rear tyre, and driver side rear. See your dealer for service or to purchase a relearn tool.

You have two minutes to match the first tyre/wheel position, and five minutes overall to match all four tyre/wheel positions. If it takes longer, the matching process stops and must be restarted.

The TPMS sensor matching process is outlined below:

1. Apply the parking brake.
2. Turn the ignition to ON/RUN with the engine off.
3. Use the MENU button to select the Vehicle Information menu in the Driver Information Centre (DIC).
4. Use the thumbwheel to scroll to the Tyre Pressure Menu item screen.

5. Press the SET/CLR button to begin the sensor matching process.

A message requesting acceptance of the process should display.

6. Press the SET/CLR button again to confirm the selection.

The horn sounds twice to signal the receiver is in relearn mode and the TYRE LEARNING ACTIVE message displays on the DIC screen.

7. Start with the driver side front tyre.
8. Place the relearn tool against the tyre 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 tyre and wheel position.
9. Proceed to the passenger side front tyre, and repeat the procedure in Step 8.

10. Proceed to the passenger side rear tyre, and repeat the procedure in Step 8.

11. Proceed to the driver side rear tyre, and repeat the procedure in Step 8. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tyre, and the TPMS sensor matching process is no longer active. The TYRE LEARNING ACTIVE message on the DIC display screen goes off.

12. Turn the ignition to LOCK/OFF.

13. Set all four tyres to the recommended air pressure level as indicated on the Tyre and Loading Information label.

### **Tyre Inspection**

We recommend that the tyres, including the spare tyre, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tyre if:

- The indicators at three or more places around the tyre can be seen.
- There is cord or fabric showing through the tyre's rubber.
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tyre has a bump, bulge, or split.
- The tyre has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

### Tyre Rotation

If the vehicle has non-directional tyres, they should be rotated at the intervals specified in the

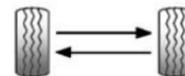
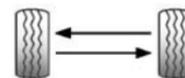
Maintenance Schedule. See *Scheduled Maintenance on page 11-1*.

Tyres are rotated to achieve a uniform wear for all tyres. The first rotation is the most important.

Anytime unusual wear is noticed, rotate the tyres as soon as possible, check for proper tyre inflation pressure, and check for damaged tyres or wheels. If the unusual wear continues after the rotation, check the wheel alignment. See *When It Is Time for New Tyres on page 10-51* and *Wheel Replacement on page 10-54*.

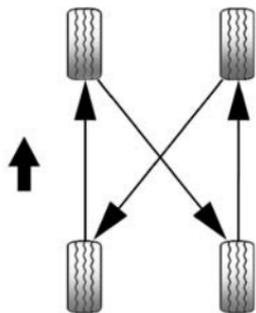
Directional tyres should not be rotated. Each tyre and wheel should be used only in the position it is in. Directional tyres will have an arrow on the tyre

indicating the proper direction of rotation or will have "left" or "right" moulded on the sidewall.



Use this rotation pattern if the vehicle has different size tyres on the front and rear and they are non-directional.

Different tyre sizes should not be rotated front to rear.



Use this rotation pattern when rotating tyres of the same size installed on all four wheel positions.

If the vehicle has a compact spare tyre, do not include it in the tyre rotation.

Adjust the front and rear tyres to the recommended inflation pressure on the Tyre and Loading Information label after the tyres have been rotated. See *Tyre Pressure* on page 10-42 and *Vehicle Load Limits* on page 9-10.

Reset the Tyre Pressure Monitor System. See *Tyre Pressure Monitor Operation* on page 10-45.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications* on page 12-3.

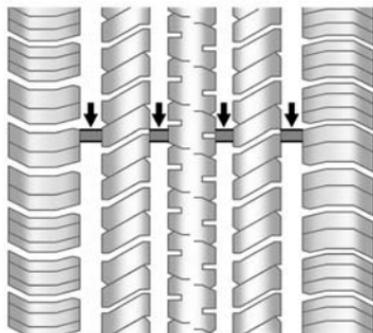
### **Warning**

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

Lightly coat the centre of the wheel hub with wheel bearing grease after a wheel change or tyre rotation to prevent corrosion or rust build-up. Do not get grease on the flat wheel mounting surface or on the wheel nuts or bolts.

## When It Is Time for New Tyres

Factors such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions affect the wear rate of the tyres.



Tread wear indicators are one way to tell when it is time for new tyres. Tread wear indicators appear when the tyres have only 1.6 mm (1/16 in) or less of tread remaining. See *Tyre Inspection* on page 10-48 and *Tyre Rotation* on page 10-49.

The rubber in tyres ages over time. This also applies to the spare tyre, if the vehicle has one, even if it is never used. Multiple factors including temperatures, loading conditions, and inflation pressure maintenance affect how fast ageing takes place. GM recommends that tyres, including the spare if equipped, be replaced after six years, regardless of tread wear. The tyre manufacture date is the last four digits of the DOT Tyre Identification Number (TIN) which is moulded into one side of the tyre sidewall. The first two digits represent the week (01–52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

### Vehicle Storage

Tyres 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 ageing. This area should be free of grease, petrol, or other substances that can deteriorate rubber.

Parking for an extended period can cause flat spots on the tyres that may result in vibrations while driving. When storing a vehicle for at least a month, remove the tyres or raise the vehicle to reduce the weight from the tyres.

### Buying New Tyres

GM has developed and matched specific tyres for the vehicle. The original equipment tyres installed were designed to meet General Motors Tyre Performance Criteria Specification (TPC Spec) system rating. When replacement tyres are needed, GM strongly recommends buying tyres 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 tyre pressure monitoring performance. GM's TPC Spec number is moulded onto the tyre's sidewall near the tyre size. If the tyres have an all-season tread design, the TPC Spec number will be followed by MS for mud and snow.

GM recommends replacing worn tyres in complete sets of four. Uniform tread depth on all tyres will help to maintain the performance of the vehicle. Braking and handling performance may be adversely affected if all the tyres are not replaced at the same time. If proper rotation and maintenance have been done,

all four tyres should wear out at about the same time. See *Tyre Rotation* on page 10-49 for information on proper tyre rotation. However, if it is necessary to replace only one axle set of worn tyres, place the new tyres on the rear axle.

Winter tyres with the same speed rating as the original equipment tyres may not be available for H, V, W, Y and ZR speed rated tyres. Never exceed the winter tyre's maximum speed capability when using winter tyres with a lower speed rating.

### **Warning**

Tyres could explode during improper service. Attempting to mount or dismount a tyre could cause injury or death.

(Continued)

### **Warning (Continued)**

Only your dealer or authorised tyre service centre should mount or dismount the tyres.

### **Warning**

Mixing tyres of different sizes, brands, or types may cause loss of control of the vehicle, resulting in a crash or other vehicle damage. Use the correct size, brand, and type of tyres on all wheels.

### **Warning**

Using bias-ply tyres on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving.

(Continued)

**Warning (Continued)**

A tyre and/or wheel could fail suddenly and cause a crash. Use only radial-ply tyres with the wheels on the vehicle.

If the vehicle tyres must be replaced with a tyre 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 tyres.

Vehicles that have a tyre pressure monitoring system could give an inaccurate low-pressure warning if non-TPC Spec rated tyres are installed. See *Tyre Pressure Monitor System on page 10-44*.

The Tyre and Loading Information label indicates the original equipment tyres on the vehicle. See *Vehicle Load Limits on page 9-10* for the label location and more information about the Tyre and Loading Information label.

**Different Size Tyres and Wheels**

If wheels or tyres are installed that are a different size than the original equipment wheels and tyres, 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 tyres not recommended for those wheels are selected. This increases the chance of a crash and serious injury. Only use GM specific wheel and tyre systems developed for the vehicle, and have them properly installed by a GM certified technician.

See *Buying New Tyres on page 10-51* and *Accessories and Modifications on page 10-2*.

**Wheel Alignment and Tyre Balance**

The tyres and wheels were aligned and balanced at the factory to provide the longest tyre life and best overall performance. Adjustments to wheel alignment and tyre balancing are not necessary on a regular

basis. Consider an alignment check if there is unusual tyre 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 tyres 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 aluminium 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 Tyre 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. Tyres can lose air, and cause loss of control, causing a crash. Always use the correct wheel, wheel bolts, and wheel nuts for replacement.

#### Caution

The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp alignment, rear differential, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.

See *If a Tyre Goes Flat on page 10-55* for more information.

### Used Replacement Wheels

#### Warning

Replacing a wheel with a used one is dangerous. How it has been used or how far it has been driven may be unknown. It could fail suddenly and cause a crash.

(Continued)

**Warning (Continued)**

When replacing wheels, use a new GM original equipment wheel.

**Tyre Chains**

Use tyre chains or other traction devices only when necessary.

Use only 11 mm traction cables that meet or exceed SAE Class "S" requirements and that are the correct size for the 275/40ZR20 tyres. Install them on the rear tyres only, as tightly as possible with the ends securely fastened.

 **Caution**

Do not install traction devices on the front tyres.

Drive slowly and follow the cable manufacturer's instructions. If the cables are contacting the vehicle,

stop and retighten them. If the contact continues, slow down until it stops.

 **Caution**

To help avoid damage to the vehicle, drive slowly, do not spin the wheels, and readjust or remove the device if it contacts the vehicle.

**If a Tyre Goes Flat**

It is unusual for a tyre to blow out while driving, especially if the tyres are maintained properly. See *Tyres on page 10-40*. If air goes out of a tyre, 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 tyre fails, the flat tyre 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 tyre will cause permanent damage to the tyre. Re-inflating a tyre 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 tyre that has been driven on while severely underinflated or flat. Have your dealer or an authorized

(Continued)

### Warning (Continued)

tyre service centre repair or replace the flat tyre 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 tyre. 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 tyre.

If a tyre goes flat, avoid further tyre and wheel damage by driving slowly to a level place, well off the road,

if possible. Turn on the hazard warning flashers. See *Hazard Warning Flashers on page 6-4*.

### Warning

Changing a tyre 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 tyre. To help prevent the vehicle from moving:

1. Apply the parking brake firmly.
2. Put an automatic transmission in P (Park) or a manual gearbox in 1 (First) or R (Reverse).
3. Turn off the engine and do not restart while the vehicle is raised.
4. Do not allow passengers to remain in the vehicle.

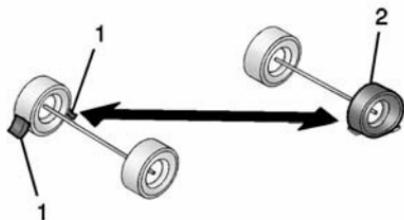
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### Warning (Continued)

5. Place wheel blocks, if equipped, on both sides of the tyre at the opposite corner of the tyre being changed.

This vehicle may come with a jack and spare tyre or a tyre sealant and compressor kit. To use the jacking equipment to change a spare tyre safely, follow the instructions below. Then see *Tyre Changing on page 10-65*. To use the tyre sealant and compressor kit, see *Tyre Sealant and Compressor Kit on page 10-57*.

When the vehicle has a flat tyre (2), use the following example as a guide to assist you in the placement of wheel blocks (1), if equipped.



1. Wheel Block (if equipped)
2. Flat Tyre

The following information explains how to repair or change a tyre.

## Tyre Sealant and Compressor Kit

### Warning

Idling a vehicle in an enclosed area with poor ventilation is dangerous. Engine exhaust may enter the vehicle. Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled.

(Continued)

### Warning (Continued)

It can cause unconsciousness and even death. Never run the engine in an enclosed area that has no fresh air ventilation. For more information, see *Engine Exhaust* on page 9-20.

### Warning

Overinflating a tyre could cause the tyre to rupture and you or others could be injured. Be sure to read and follow the tyre sealant and compressor kit instructions and inflate the tyre to its recommended pressure. Do not exceed the recommended pressure.

### Warning

Storing the tyre sealant and compressor kit or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store the tyre sealant and compressor kit in its original location.

If this vehicle has a tyre sealant and compressor kit, there may not be a spare tyre or tyre changing equipment, and on some vehicles there may not be a place to store a tyre.

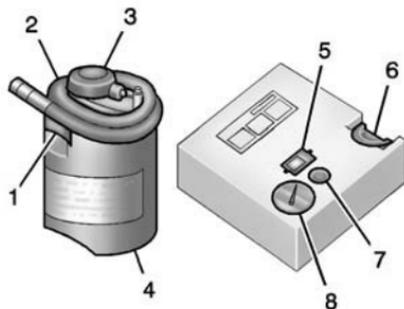
The tyre sealant and compressor can be used to temporarily seal punctures up to 6 mm (0.25 in) in the tread area of the tyre. It can also be used to inflate an under inflated tyre.

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If the tyre has been separated from the wheel, has damaged sidewalls, or has a large puncture, the tyre is too severely damaged for the tyre sealant and compressor kit to be effective.

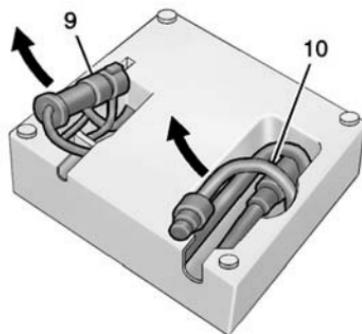
Read and follow all of the tyre sealant and compressor kit instructions.

The kit includes:



1. Sealant Canister Inlet Valve
2. Sealant/Air Hose
3. Base of Sealant Canister
4. Tyre Sealant Canister

5. On/Off Button
6. Slot on Top of Compressor
7. Pressure Deflation Button
8. Pressure Gauge



9. Power Plug
10. Air Only Hose

### Tyre Sealant

Read and follow the safe handling instructions on the label adhered to the tyre sealant canister (4).

Check the tyre sealant expiration date on the tyre sealant canister. The tyre sealant canister (4) should be replaced before its expiration

date. Replacement tyre sealant canisters are available at your local dealer.

There is only enough sealant to seal one tyre. After usage, the tyre sealant canister must be replaced.

### Using the Tyre Sealant and Compressor Kit to Temporarily Seal and Inflate a Punctured Tyre

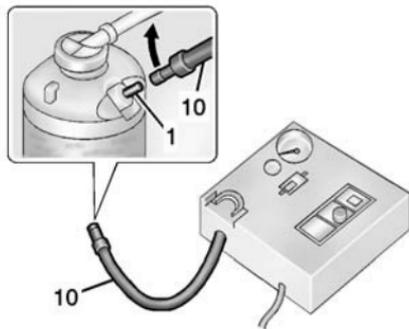
When using the tyre sealant and compressor kit during cold temperatures, warm the kit in a heated environment for five minutes. This will help to inflate the tyre faster.

If a tyre goes flat, avoid further tyre and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

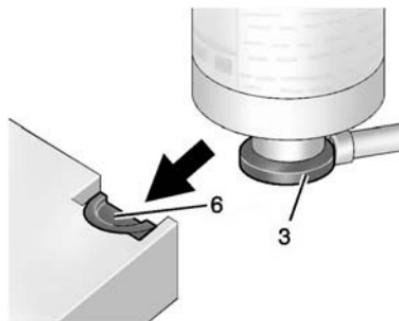
See *If a Tyre Goes Flat* on page 10-55 for other important safety warnings.

Do not remove any objects that have penetrated the tyre.

1. Remove the tyre sealant canister (4) and compressor from its storage location. See *Storing the Tyre Sealant and Compressor Kit on page 10-64*.
2. Remove the air only hose (10) and the power plug (9) from the bottom of the compressor.
3. Place the compressor on the ground near the flat tyre.



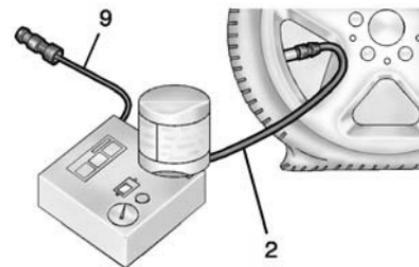
4. Attach the air only hose (10) to the sealant canister inlet valve (1) by turning it clockwise until tight.



5. Slide the base of the tyre sealant canister (3) into the slot on the top of the compressor (6) to hold it upright.

Make sure the tyre valve stem is positioned close to the ground so the hose will reach it.

6. Remove the valve stem cap from the flat tyre by turning it anticlockwise.



7. Attach the sealant/air hose (2) to the tyre valve stem by turning it clockwise until tight.
8. Plug the power plug (9) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets on page 5-5*.

If the vehicle has an accessory power outlet, do not use the cigarette lighter.

If the vehicle only has a cigarette lighter, use the cigarette lighter.

Do not pinch the power plug cord in the door or window.

9. Start the vehicle. The vehicle must be running while using the air compressor.
10. Press the on/off button (5) to turn the tyre sealant and compressor kit on.

The compressor will inject sealant and air into the tyre.

The pressure gauge (8) will initially show a high pressure while the compressor pushes the sealant into the tyre. Once the sealant is completely dispersed into the tyre, the pressure will quickly drop and start to rise again as the tyre inflates with air only.

11. Inflate the tyre to the recommended inflation pressure using the pressure gauge (8). The recommended inflation pressure can be found on the Tyre and Loading Information label. See *Tyre Pressure on page 10-42*.

The pressure gauge (8) may read higher than the actual tyre pressure while the compressor is on. Turn the compressor off to get an accurate pressure reading. The compressor may be turned on/off until the correct pressure is reached.

### **Caution**

If the recommended pressure cannot be reached after approximately 25 minutes, the vehicle should not be driven farther. The tyre is too severely damaged and the tyre sealant and compressor kit cannot inflate

(Continued)

### **Caution (Continued)**

the tyre. Remove the power plug from the accessory power outlet and unscrew the inflating hose from the tyre valve.

12. Press the on/off button (5) to turn the tyre sealant and compressor kit off.  
  
The tyre is not sealed and will continue to leak air until the vehicle is driven and the sealant is distributed in the tyre. Therefore, Steps 13–21 must be done immediately after Step 12.  
  
Be careful while handling the tyre sealant and compressor kit as it could be warm after usage.
13. Unplug the power plug (9) from the accessory power outlet in the vehicle.

14. Turn the sealant/air hose (2) anticlockwise to remove it from the tyre valve stem.
15. Replace the tyre valve stem cap.
16. Remove the tyre sealant canister (4) from the slot on top of the compressor (6).
17. Turn the air only hose (10) anticlockwise to remove it from the tyre sealant canister inlet valve (1).
18. Turn the sealant/air hose (2) clockwise onto the sealant canister inlet valve (1) to prevent sealant leakage.
19. Return the air only hose (10) and power plug (9) back to their original storage location.



20. If the flat tyre was able to inflate to the recommended inflation pressure, remove the maximum speed label from the sealant canister and place it in a highly visible location.  
  
Do not exceed the speed on this label until the damaged tyre is repaired or replaced.
21. Return the equipment to its original storage location in the vehicle.
22. Immediately drive the vehicle 8 km (5 mi) to distribute the sealant in the tyre.
23. Stop at a safe location and check the tyre pressure. Refer to Steps 1–10 under “Using the Tyre Sealant and Compressor Kit without Sealant to Inflate a Tyre (Not Punctured).”

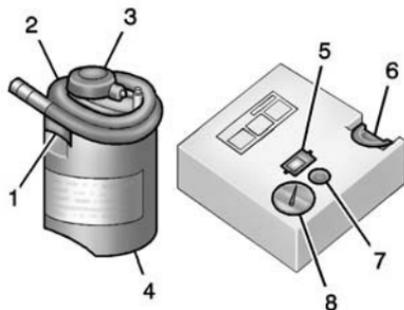
- If the tyre pressure has fallen more than 68 kPa (10 psi) below the recommended inflation pressure, stop driving the vehicle. The tyre is too severely damaged and the tyre sealant cannot seal the tyre.
- If the tyre pressure has not dropped more than 68 kPa (10 psi) from the recommended inflation pressure, inflate the tyre to the recommended inflation pressure.
24. Wipe off any sealant from the wheel, tyre, or vehicle.
  25. Dispose of the used tyre sealant canister (4) at a local dealer or in accordance with local state codes and practices.
  26. Replace it with a new canister available from your dealer.
  27. After temporarily sealing a tyre using the tyre sealant and compressor kit, take the vehicle to an authorised dealer

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within 161 km (100 mi) of driving to have the tyre repaired or replaced.

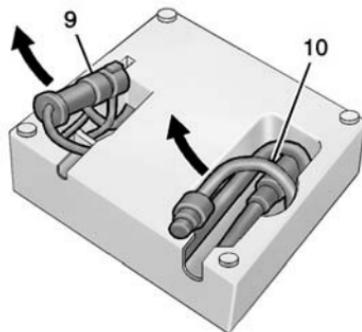
### Using the Tyre Sealant and Compressor Kit without Sealant to Inflate a Tyre (Not Punctured)

The kit includes:



1. Sealant Canister Inlet Valve
2. Sealant/Air Hose
3. Base of Sealant Canister
4. Tyre Sealant Canister
5. On/Off Button

6. Slot on Top of Compressor
7. Pressure Deflation Button
8. Pressure Gauge



9. Power Plug
10. Air Only Hose

If a tyre goes flat, avoid further tyre and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

See *If a Tyre Goes Flat* on page 10-55 for other important safety warnings.

1. Remove the compressor from its storage location. See *Storing the Tyre Sealant and Compressor Kit* on page 10-64.
2. Remove the air only hose (10) and the power plug (9) from the bottom of the compressor.
3. Place the compressor on the ground near the flat tyre.  
Make sure the tyre valve stem is positioned close to the ground so the hose will reach it.
4. Remove the valve stem cap from the flat tyre by turning it anticlockwise.
5. Attach the air only hose (10) to the tyre valve stem by turning it clockwise until tight.

6. Plug the power plug (9) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets on page 5-5*.

If the vehicle has an accessory power outlet, do not use the cigarette lighter.

If the vehicle only has a cigarette lighter, use the cigarette lighter.

Do not pinch the power plug cord in the door or window.

7. Start the vehicle. The vehicle must be running while using the air compressor.
8. Press the on/off button (5) to turn the tyre sealant and compressor kit on.

The compressor will inflate the tyre with air only.

9. Inflate the tyre to the recommended inflation pressure using the pressure gauge (8). The recommended inflation pressure can be found on the Tyre and Loading Information label. See *Tyre Pressure on page 10-42*.

The pressure gauge (8) may read higher than the actual tyre pressure while the compressor is on. Turn the compressor off to get an accurate pressure reading. The compressor may be turned on/off until the correct pressure is reached.

 **Caution**

If the recommended pressure cannot be reached after approximately 25 minutes, the vehicle should not be driven farther. The tyre is too severely damaged and the tyre sealant and compressor kit cannot inflate

(Continued)

**Caution (Continued)**

the tyre. Remove the power plug from the accessory power outlet and unscrew the inflating hose from the tyre valve.

10. Press the on/off button (5) to turn the tyre sealant and compressor kit off.  
Be careful while handling the compressor as it could be warm after usage.
11. Unplug the power plug (9) from the accessory power outlet in the vehicle.
12. Turn the air only hose (10) anticlockwise to remove it from the tyre valve stem.
13. Replace the tyre valve stem cap.
14. Return the air only hose (10) and power plug (9) back to their original storage location.

## 10-64 Vehicle Care

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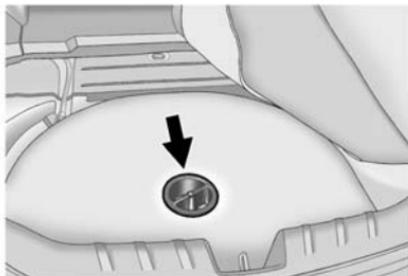
15. Return the equipment to its original storage location in the vehicle.

The tyre sealant and compressor kit has accessory adapters located in a compartment on the bottom of its housing that can be used to inflate air mattresses, balls, etc.

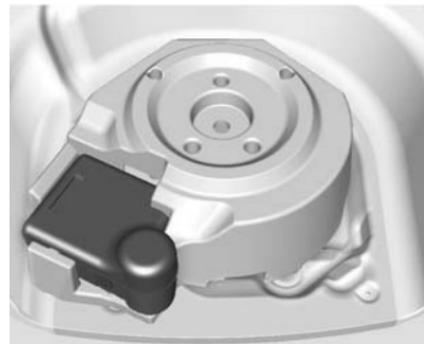
### Storing the Tyre Sealant and Compressor Kit

The tyre sealant and compressor kit is in a case in the boot.

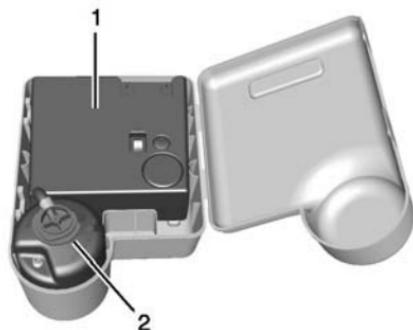
1. Open the boot. See *Boot* on page 2-9.
2. Remove the carpet.



3. Turn the centre retainer counterclockwise to remove the cover.



4. Remove the tyre sealant and compressor kit case.
5. Open the case.



6. Remove the compressor (1) and the sealant canister (2).

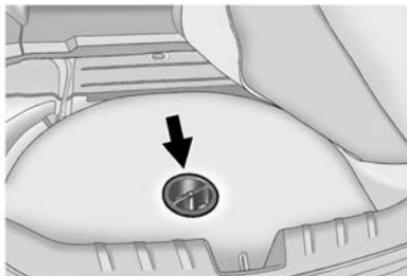
To store the tyre sealant and compressor kit, reverse the steps.

## Tyre Changing

### Removing the Spare Tyre and Tools

#### Spare Tyre

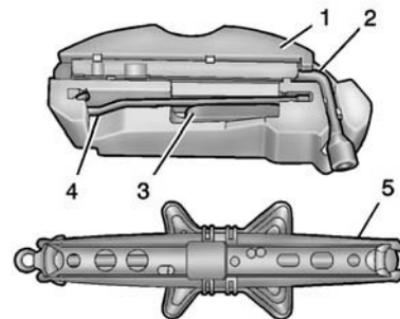
1. Open the boot. See *Boot* on page 2-9.
2. Remove the carpet.



3. Turn the centre retainer counterclockwise to remove the spare tyre cover.
4. Remove the spare tyre and place it next to the tyre being changed.

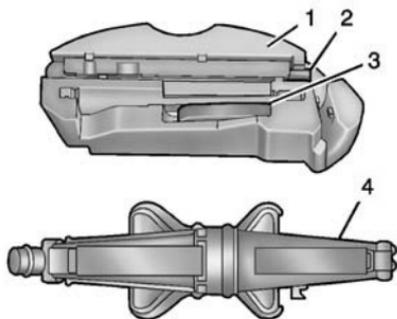
#### Tools

The jack and tools are stored below the spare tyre.



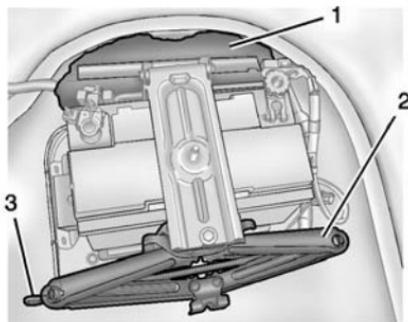
### Coin/Pierce Jack with Two-Piece Wrench

1. Tool Container
2. Two-Piece Wrench
3. Strap
4. Jack Handle Extension
5. Coin/Pierce Jack



### Hex-Head Jack with Three-Piece Wrench

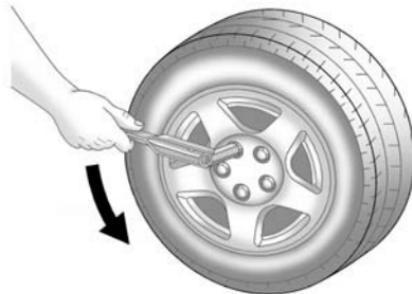
1. Tool Container
2. Three-Piece Wrench
3. Strap
4. Hex Head Jack



1. Tool Container
  2. Jack
  3. End of the Jack
1. Turn the end of the jack (3) anticlockwise to loosen it. Remove the jack (2) from the retaining bracket.
  2. Remove the tool container (1).
  3. Remove the tools and tire strap from the tool container.
  4. Place the tools next to the tire being changed.

### Removing the Flat Tyre and Installing the Spare Tyre

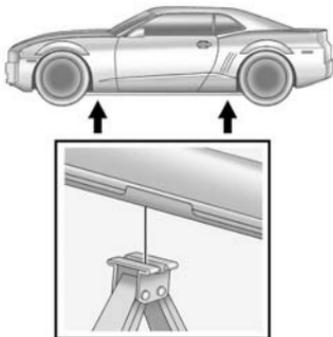
1. Do a safety check before proceeding. See *If a Tyre Goes Flat on page 10-55* for more information.
2. If the vehicle has wheel bolt caps, remove the caps. Store the caps with the wheel cover.



3. Use the fully extended wheel wrench to loosen all the wheel nuts one-half turn counterclockwise. 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.



- Position the jack lift head at the jack location nearest the flat tyre. The location is indicated by a mark on the bottom edge of the vehicle. The jack must not be used in any other position.

Raise the jack until it engages with the jacking point.

**⚠ 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**

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the

(Continued)

**Warning (Continued)**

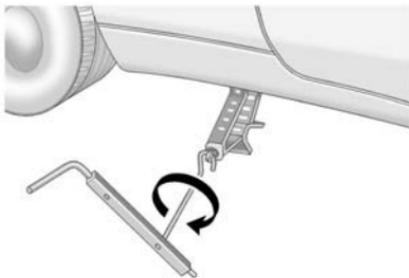
appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tyre. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tyre.

**⚠ Warning**

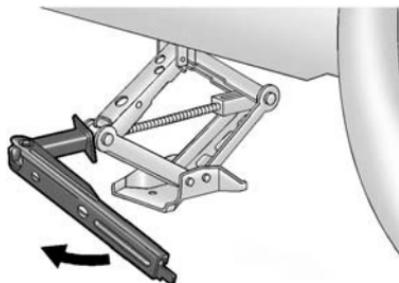
Raising the vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.

5. If you have a coin/pierce jack, attach the jack handle extension to the jack by sliding the hook through the end of the jack and insert the other end of the jack handle into the wrench.

If you have a hex head jack, place the hex tube end of the wrench over the hex head of the jack.



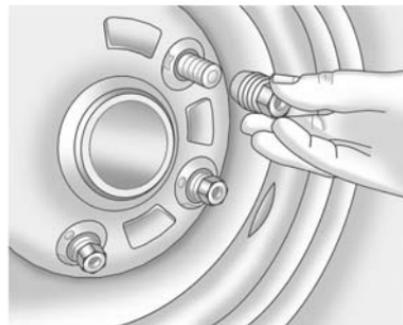
**Coin/Pierce Jack and Wrench**



### **Hex Head Jack and Wrench**

6. Raise the vehicle by turning the wrench clockwise until the vehicle is far enough off the ground to allow enough room for the compact spare tire to fit under the vehicle.

Keep the hook parallel to the ground. The wrench may need to be removed and repositioned to continue turning it.



7. Remove all of the wheel nuts and place them in a dry, clean place to avoid getting dirt in the threads.

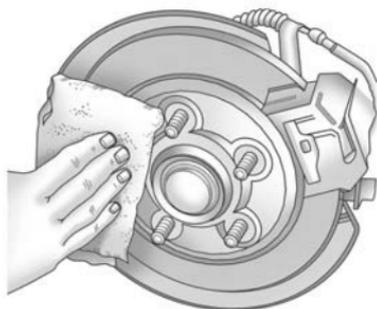
### **Warning**

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the

(Continued)

**Warning (Continued)**

wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.



8. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.
9. Place the compact spare tyre on the wheel-mounting surface.

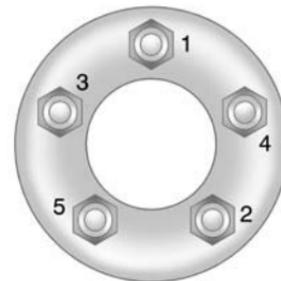
**⚠ Warning**

Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.

10. Reinstall the wheel nuts with the rounded end of the nuts toward the wheel. Tighten each nut as much as possible using the wheel wrench until the wheel is held firmly against the hub.

Use your free hand to prevent the wheel from turning while you are tightening.

11. Lower the vehicle by turning the wrench counterclockwise. Lower the jack completely.



12. Tighten the wheel nuts firmly in a crisscross sequence, as shown.

**⚠ Warning**

Wheel nuts that are improperly or incorrectly tightened can cause the wheels to become loose or come off. The wheel nuts should be tightened with a torque wrench to the proper torque specification after replacing. Follow the torque specification supplied by the

(Continued)

### Warning (Continued)

aftermarket manufacturer when using accessory locking wheel nuts. See *Capacities and Specifications* on page 12-3 for original equipment wheel nut torque specifications.

### ⚠ Caution

Improperly tightened wheel nuts can lead to brake pulsation and disc damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See *Capacities and Specifications* on page 12-3 for the wheel nut torque specification.

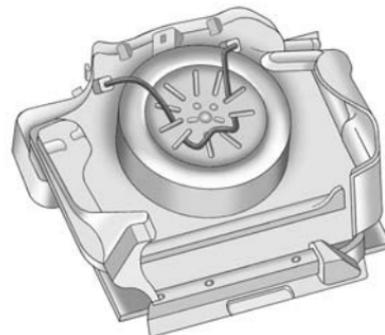
### Storing a Flat or Spare Tyre and Tools

#### ⚠ Warning

Storing a jack, a tyre, 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 a flat or spare tire and tools:

1. Return the jack and tools as they were originally stored in the boot.
2. Return the spare tire cover as it was in the boot.
3. Install the retainer nut and turn it clockwise until tight.
4. Return the rear boot carpet.
5. Place the flat tire face up on the load floor.



6. Route the strap provided, as shown, to secure the flat tire.

The compact spare tire is for temporary use only. Replace the compact spare with a full-size tire as soon as possible.

## Compact Spare Tyre

### Warning

Driving with more than one compact spare tyre 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 tyre at a time.

If this vehicle has a compact spare tyre, 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 tyre is correctly inflated after being installed on the vehicle. The compact spare tyre is designed for temporary use only. The vehicle will perform differently with the spare tyre installed and it is recommended that the vehicle speed be limited to 80 km/h (50

mph). To conserve the tread of the spare tyre, have the standard tyre repaired or replaced as soon as convenient and return the spare tyre to the storage area.

When using a compact spare tyre, the ABS and Traction Control systems may engage until the spare tyre is recognised 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 tyre, wheel, and other parts of the vehicle.

### Caution

Tyre chains will not fit the compact spare. Using them can damage the vehicle and the chains. Do not use tyre chains on the compact spare.

### Warning

Do not use the spare tyre on other vehicles.

Do not mix the compact spare tyre or wheel with other wheels or tyres. They will not fit.

Keep the spare tyre and its wheel together.

## Jump Starting

For more information about the vehicle battery, see *Battery* on page 10-26.

If the battery has run down, try to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

### Warning

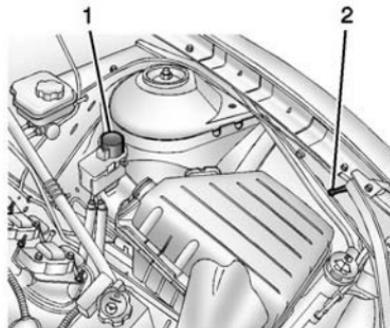
Batteries can hurt you. They can be dangerous because:

- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

If you do not follow these steps exactly, some or all of these things can hurt you.

### Caution

Ignoring these steps could result in costly damage to the vehicle that would not be covered by the vehicle warranty. Trying to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle.



1. Remote Positive (+) Terminal
2. Remote Negative (-) Terminal

The jump start remote positive (1) and negative (2) terminals are in the engine compartment on the driver side of the vehicle.

These terminals are used instead of a direct connection to the battery.

The positive jump start connection is covered by a red cap. Remove 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. Apply the parking brake firmly. The transmission should be in P (Park). See *Shifting Into Park* on page 9-16. .

 **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 to LOCK/OFF and switch off all lights and accessories in both vehicles, except the hazard warning flashers if needed.

 **Warning**

An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underbonnet 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 torch if you need more light.

Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.

 **Warning**

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

5. Connect one end of the red positive (+) cable to the jump start positive (+) post.
6. Connect the other end of the red positive (+) cable to the positive (+) terminal of the good battery.
7. Connect one end of the black negative (-) cable to the negative (-) terminal of the good battery.
8. Connect the other end of the black negative (-) cable to the negative (-) post.
9. Start the engine in the vehicle with the good battery and run the engine at idle speed for at least four minutes.

10. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

### **Caution**

If the jump leads 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 jump leads in the correct order, making sure that the cables do not touch each other or other metal.

### **Jump Lead Removal**

Reverse the sequence exactly when removing the jump leads.

## **Towing**

### **Towing the Vehicle**

#### **Caution**

Incorrectly towing a disabled vehicle may cause damage. The damage would not be covered by the vehicle warranty.

Have the vehicle towed on a flatbed car carrier. A wheel lift tow truck could damage the vehicle.

Consult your dealer or a professional towing service if the disabled vehicle must be towed.

Use the tow eye for towing a disabled vehicle or loading it onto a flatbed car carrier. The tow eye should not be used to recover a vehicle from an off road situation.

#### **Caution**

Improper use of the tow eye can cause vehicle damage. Use caution and low speeds to prevent damage to the vehicle.

Carefully open the cover in the fascia by using the small notch that conceals the tow eye socket.

Install the tow eye into the socket by turning it clockwise until it stops. When the tow eye is removed, reinstall the cover with the notch in the original position.

## Recreational Vehicle Towing

 **Caution**

Dolly towing or dinghy towing the vehicle may cause damage because of reduced ground clearance. Always put the vehicle on a flatbed truck or trailer.

The vehicle was neither designed nor intended to be towed with any of its wheels on the ground. If the vehicle must be towed, see *Towing the Vehicle on page 10-74*.

## Appearance Care

### Exterior Care

#### Locks

Locks are lubricated at the factory. Use a de-icing agent only when absolutely necessary, and have the locks greased after using. See *Recommended Fluids and Lubricants on page 11-4*.

#### Washing the Vehicle

To preserve the vehicle's finish, wash it often and out of direct sunlight.

 **Caution**

Do not use petroleum-based, acidic, or abrasive cleaning agents as they can damage the vehicle's paint, metal, or plastic parts. If damage occurs, it would not be covered by the vehicle warranty. Approved cleaning

(Continued)

**Caution (Continued)**

products can be obtained from your dealer. Follow all manufacturer directions regarding correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.

 **Caution**

Avoid using high-pressure washers 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.

This symbol  is on any underbonnet compartment electrical centre that should not be power washed. This could cause damage that would not be covered by the vehicle warranty.

If using an automatic car wash, comply with the car wash instructions. The windscreen wiper and rear window wiper, if equipped, must be off. Remove any accessories that may be damaged or interfere with the car wash equipment.

Rinse the vehicle well, before washing and after, to remove all cleaning agents completely. If they are allowed to dry on the surface, they could stain.

Dry the finish with a soft, clean chamois or an all-cotton towel to avoid surface scratches and water spotting.

### Finish Care

Application of aftermarket clearcoat sealant/wax materials is not recommended. If painted surfaces are damaged, see your dealer to have the damage assessed and repaired. Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, etc., can damage the vehicle's finish if they remain on painted surfaces. Wash the vehicle as soon as possible. If necessary, use non-abrasive cleaners that are marked safe for painted surfaces to remove foreign matter.

Occasional hand waxing or mild polishing should be done to remove residue from the paint finish. See your dealer for approved cleaning products.

Do not apply waxes or polishes to uncoated plastic, vinyl, rubber, decals, simulated wood, or flat paint as damage can occur.

### Caution

Machine compounding or aggressive polishing on a base coat/clear coat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a base coat/clear coat paint finish on the vehicle.

To keep the paint finish looking new, keep the vehicle garaged or covered whenever possible.

### Protecting Exterior Bright Metal Mouldings

### Caution

Failure to clean and protect the bright metal mouldings can result in a hazy white finish or pitting. This damage would not be covered by the vehicle warranty.

The bright metal mouldings on the vehicle are aluminium. To prevent damage always follow these cleaning instructions:

- Be sure the moulding is cool to the touch before applying any cleaning solution.
- Use a cleaning solution approved for aluminium. Some cleaners are highly acidic or contain alkaline substances and can damage the mouldings.
- Always dilute a concentrated cleaner according to the manufacturer's instructions.
- Do not use chrome cleaners.
- Do not use cleaners that are not intended for automotive use.
- Use a nonabrasive wax on the vehicle after washing to protect and extend the moulding finish.

### Convertible Top Care

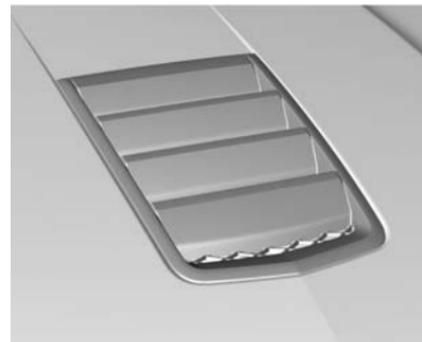
Frequently hand wash convertible tops with mild car wash soap. Never use a stiff brush, steam, bleach, or aggressive cleaners.

If necessary, a soft brush can be used to remove dirt. When finished cleaning, thoroughly rinse the fabric. Avoid automatic car washes with overhead brushes or very high pressure sprays as they can cause damage and leaking.

Only lower the top when it is completely dry and avoid leaving the top lowered for extended periods of time to prevent excessive interior weathering.

Avoid leaving large amounts of snow on the top for extended periods of time as damage may also occur.

### Bonnet Air Extractor



It is not recommended that the air extractor on the SS and , if equipped V6, be waxed, as it will change the gloss level of the surface. In addition, care must be used when waxing around the air extractor. If a small amount of wax is applied to the extractor it can create an irregular appearance in the surface of the panel. If wax, debris, or other materials create stains on the air extractor, see your dealer for the recommended cleaner.

## 10-78 Vehicle Care

The air extractor has vent screens in the openings. Keep leaves or other debris out of the vent screens.

### **Caution**

Pushing on the vent screens could damage them. Do not push on the screens when clearing.

There is a water deflector on the underside of the air extractor. Do not remove it.

### **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 while they are 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 bonnet and windshield, when washing the vehicle.

### **Windscreen and Wiper Blades**

Clean the outside of the windscreen with glass cleaner.

Clean rubber blades using lint-free cloth or paper towel soaked with windscreen washer fluid or a mild detergent. Wash the windscreen thoroughly when cleaning the blades. Insects, road grime, sap,

and a build-up of vehicle wash/wax treatments may cause wiper streaking.

Replace the wiper blades if they are worn or damaged. Damage can be caused by extreme dusty conditions, sand, salt, heat, sun, snow and ice.

### Weatherstrips

Apply Dielectric silicone grease on weatherstrips to make them last longer, seal better, and not stick or squeak. Lubricate weatherstrips at least once a year. Hot, dry climates may require more frequent application. Black marks from rubber material on painted surfaces can be removed by rubbing with a clean cloth. See *Recommended Fluids and Lubricants on page 11-4*.

### Tyres

Use a stiff brush with tyre cleaner to clean the tyres.

#### Caution

Using petroleum-based tyre dressing products on the vehicle may damage the paint finish and/or tyres. When applying a tyre dressing, always wipe off any overspray from all painted surfaces on the vehicle.

### Wheels and Trim - Aluminium or Chrome

Use a soft, clean cloth with mild soap and water to clean the wheels. After rinsing thoroughly with clean water, dry with a soft, clean towel. A wax may then be applied.

#### Caution

Chrome wheels and other chrome trim may be damaged if the vehicle is not washed after driving on roads that have been sprayed with magnesium, calcium,

(Continued)

#### Caution (Continued)

or sodium chloride. These chlorides are used on roads for conditions such as ice and dust. Always wash the chrome with soap and water after exposure.

#### Caution

To avoid surface damage, do not use strong soaps, chemicals, abrasive polishes, cleaners, brushes, or cleaners that contain acid on aluminium or chrome-plated wheels. Use only approved cleaners. Also, never drive a vehicle with aluminium or chrome-plated wheels through an automatic car wash that uses silicone carbide tyre cleaning brushes. Damage could occur and the repairs would not be covered by the vehicle warranty.

### **Steering, Suspension, and Chassis Components**

Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year.

Inspect power steering for proper hook-up, binding, leaks, cracks, chafing, etc.

Visually check constant velocity joint boots and axle seals for leaks.

### **Body Component Lubrication**

Lubricate all key lock cylinders, bonnet hinges, tailgate hinges, and steel fuel door hinge unless the components are plastic. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

### **Underbody Maintenance**

At least twice a year, spring and autumn use plain water to flush any corrosive materials from the

underbody. Take care to thoroughly clean any areas where mud and other debris can collect.

### **Sheet Metal Damage**

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the vehicle warranty.

### **Finish Damage**

Quickly repair minor chips and scratches with touch-up materials available from your dealer to avoid corrosion. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

### **Chemical Paint Spotting**

Airborne pollutants can fall upon and attack painted vehicle surfaces causing blotchy, ring-shaped discolourations, and small, irregular dark spots etched into the paint surface. See "Finish Care" previously in this section.

### **Interior Care**

To prevent dirt particle abrasions, regularly clean the vehicle's interior. Immediately remove any soiling. Note that newspapers or dark garments that can transfer colour to home furnishings can also permanently transfer colour to the vehicle's interior.

Use a soft bristle brush to remove dust from knobs and crevices on the instrument cluster. Using a mild soap solution, immediately remove hand lotions, sunscreen, and insect repellent from all interior surfaces or permanent damage may result.

Your dealer may have products for cleaning the interior. Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage. Apply all cleaners directly to the cleaning cloth. Do not spray cleaners directly on any switches or controls. Cleaners should be removed quickly. Never allow cleaners to remain on the surface being cleaned for extended periods of time.

Cleaners may contain solvents that can become concentrated in the interior. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning the interior, maintain adequate ventilation by opening the doors and windows.

To prevent damage, do not clean the interior using the following cleaners or techniques:

- Never use a razor or any other sharp object to remove a soil from any interior surface.

- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with excessive pressure.
- Do not use laundry detergents or dishwashing soaps with degreasers. For liquid cleaners, use approximately 20 drops per 3.8 L (1 gal) of water. A concentrated soap solution will leave a residue that creates streaks and attracts dirt. Do not use solutions that contain strong or caustic soap.
- Do not heavily saturate the upholstery when cleaning.
- Do not use solvents or cleaners containing solvents.

### Interior Glass

To clean, use a terry cloth fabric dampened with water. Wipe droplets left behind with a clean dry cloth. Commercial glass cleaners may be used, if necessary, after cleaning the interior glass with plain water.

### 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 just water and mild soap.

### Coated Mouldings

Coated mouldings should be cleaned.

- When lightly soiled, wipe with a sponge or soft lint-free cloth dampened with water.

- When heavily soiled, use warm soapy water.

### Fabric/Carpet/Suede

Start by vacuuming the surface using a soft brush attachment. If a rotating brush attachment is being used during vacuuming, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible using one of the following techniques:

- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soil, remove as much as possible prior to vacuuming.

To clean:

1. Saturate a clean lint-free colourfast 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 centre. Fold the cleaning cloth to a clean area frequently to prevent forcing the soil in to the fabric.
4. Continue gently rubbing the soiled area until there is no longer any colour 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 colourfastness before using a commercial upholstery cleaner or spot lifter. If ring formation occurs, clean the entire fabric or carpet.

Following the cleaning process, a paper towel can be used to blot excess moisture.

### Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays

For vehicles with high gloss surfaces or vehicle displays, use a microfibre cloth to wipe surfaces. Before wiping the surface with the microfibre cloth, use a soft bristle brush to remove dirt that could scratch the surface. Then use the microfibre cloth by gently rubbing to clean. Never use window cleaners or solvents. Periodically hand wash the microfibre cloth separately, using mild soap. Do not use bleach or fabric softener. Rinse thoroughly and air dry before next use.

#### **Caution**

Do not attach a device with a suction cup to the display. This may cause damage and would not be covered by the warranty.

**Instrument Panel, Leather, Vinyl, Other Plastic Surfaces, Low Gloss Paint Surfaces and Natural Open Pore Wood Surfaces**

Use a soft microfiber cloth dampened with water to remove dust and loose dirt. For a more thorough cleaning, use a soft microfiber cloth dampened with a mild soap solution.

 **Caution**

Soaking or saturating leather, especially perforated leather, as well as other interior surfaces, may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, spot lifters, or spot removers. Do not use cleaners that contain silicone or wax-based products. Cleaners containing  
(Continued)

**Caution (Continued)**

these solvents can permanently change the appearance and feel of leather or soft trim and are not recommended.

Do not use cleaners that increase gloss, especially on the instrument panel. Reflected glare can decrease visibility through the windshield under certain conditions.

 **Caution**

Use of air fresheners may cause permanent damage to plastics and painted surfaces. If an air freshener comes in contact with any plastic or painted surface in the vehicle, blot immediately and clean with a soft cloth dampened with a mild soap solution. Damage caused by air fresheners would not be covered by the vehicle warranty.

**Cargo Cover and Convenience Net**

Wash with warm water and mild detergent. Do not use chlorine bleach. Rinse with cold water, and then dry completely.

**Care of Safety Belts**

Keep belts clean and dry.

 **Warning**

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

### Floor Mats

#### Warning

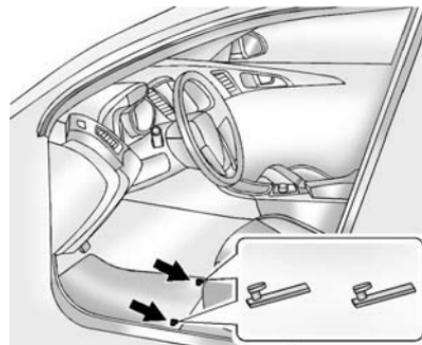
If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

Use the following guidelines for proper floor mat usage.

- The original equipment floor mats were designed for your vehicle. If the floor mats need replacing, it is recommended that GM certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the 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.

Both floor mats are held in place by two hook-type retainers.



#### Removing and Replacing the Floor Mats

1. Pull up on the rear of the mat to remove it from the hooks.
2. Reinstall by lining up the floor mat retainer openings over the carpet retainers and hook into position.
3. Make sure the floor mat is properly secured and verify that it does not interfere with the pedals.

## Service and Maintenance

### General Information

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### Scheduled Maintenance

Scheduled Maintenance ..... 11-1

### Recommended Fluids, Lubricants, and Parts

Recommended Fluids and Lubricants ..... 11-4

Maintenance Replacement Parts ..... 11-5

## General Information

It is essential that your vehicle receives the maintenance outlined on the following pages to retain the safety, reliability and performance originally built into your vehicle.

When your odometer reaches the mileage indicated on the following pages, or the corresponding time interval has been reached, take your vehicle, preferably to an authorised dealer and/or repairer, who will provide the proper parts and service.

Once maintenance has been performed, have the authorised dealer and/or repairer fill out and stamp the appropriate box in this booklet to serve as your maintenance record which may be needed for warranty repairs. It will also show future owners how well your vehicle has been maintained.

## Scheduled Maintenance

### Engine Oil Change

When the CHANGE ENGINE OIL SOON message displays, have the engine oil and filter changed within the next 1000 km/600 mi. If driven under the best conditions, the engine oil life system may not indicate the need for vehicle service for up to a year. The engine oil and filter must be changed at least once a year and the oil life system must be reset. Your trained dealer technician can perform this work. If the engine oil life system is reset accidentally, service the vehicle within 5 000 km/3,000 mi since the last service. Reset the oil life system when the oil is changed.

### Inspection Every 15 000 km or 1 Year

- Change engine oil and filter. Reset oil life system.
- Engine coolant level check.

## 11-2 Service and Maintenance

---

- Engine cooling system inspection. Visual inspection of hoses, pipes, fittings, and clamps and replacement, if needed.
- Windscreen washer fluid level check.
- Windscreen washer fluid level check.
- Windscreen wiper blade inspection for wear, cracking, or contamination and windscreen and wiper blade cleaning, if contaminated. Worn or damaged wiper blade replacement.
- Tyre inflation pressures check.
- Tyre wear inspection.
- Fluids visual leak check. A leak in any system must be repaired and the fluid level checked.
- Engine air cleaner filter inspection.
- Brake system inspection.
- Steering and suspension inspection. Visual inspection for damaged, loose, or missing parts or signs of wear.
- Body hinges and latches, key lock cylinders, folding seat hardware, and rear compartment, bonnet, and console door hinges and latches lubrication. More frequent lubrication may be required when the vehicle is exposed to a corrosive environment. Applying silicone grease on weatherstrips with a clean cloth makes them last longer, seal better, and not stick or squeak.
- Restraint system component check.
- Fuel system inspection for damage or leaks.
- Exhaust system and nearby heat shields inspection for loose or damaged components.
- Accelerator pedal check for damage, high effort, or binding.
- Bonnet/Deck lid/Tailgate/Lift glass Support Gas Strut Service: Visually inspect gas strut, if equipped, for signs of wear, cracks, or other damage. Check the hold open ability of the gas strut. Contact your authorised repairer if service is required.
- Road Test. Check all systems for correct function/performance.
- To maintain air conditioning efficiency, have an authorised repairer check the system at least once each year.
- Automatic transmission shift lock control function check.
- Parking brake and automatic P (Park) mechanism check.
- Underbody flushing service.
- Tyre sealant and compressor kit (if equipped with tyre sealant and compressor kit), check sealant expiration date.

**Additional Maintenance Every 30 000 km or 2 Years**

In addition to the items listed under "Inspection every 15 000 km or 1 year" the following items should be carried out every 30 000 km or 2 years (whichever occurs first):

- Passenger compartment air filter — replace.
- Engine Air Filter Replacement.

**Additional Maintenance Every 72 000 km or if Necessary**

- Automatic transmission fluid and filter change (severe service) for vehicles mainly driven in heavy city traffic in hot weather, in hilly or mountainous terrain, when frequently towing a trailer, or used for taxi, police, or delivery service.
- Manual gearbox fluid change.

- Rear axle fluid change (normal service) for vehicles equipped with limited slip differential.
- Rear axle fluid change (severe service) for vehicles mainly driven in hilly or mountainous terrain, when frequently towing a trailer, used for high speed or competitive driving, or used for taxi, police, or delivery service. See your authorised repairer.
- Replace brake fluid (or every three years, whichever occurs first).

**Additional Maintenance Every 150 000 km or if Necessary**

- Spark plugs — replace

**Additional Maintenance Every 250 000 km or Every Five Years, Whichever Occurs First**

- Engine cooling system drain and refill (or every five years, whichever occurs first).

**Conditions Requiring More Frequent Maintenance (Severe Service)**

- Extreme temperatures
- Heavy city traffic
- Hilly or mountainous terrain
- Dusty, muddy or off-road conditions
- Commercial use or trailer towing
- Most trips less than 6 km

# Recommended Fluids, Lubricants, and Parts

## Recommended Fluids and Lubricants

Fluids and lubricants identified below by name, part number or specification can be obtained from your dealer.

| Usage                         | Fluid/Lubricant   |
|-------------------------------|---|
| Engine Oil                    | The engine requires engine oil approved to the dexos2™ specification. Oils meeting this specification can be identified with the dexos2 certification mark. Look for and use only an engine oil that displays the dexos2 certification mark of the proper viscosity grade. See <i>Engine Oil on page 10-9</i> . |
| Engine Coolant                | 50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant. See <i>Engine Coolant on page 10-16</i> .   |
| Hydraulic Brake/Clutch System | DOT 3 Hydraulic Brake Fluid (GM Part No. 19299818).   |
| Windscreen Washer             | Automotive windscreen washer fluid that meets regional freeze protection requirements.  |
| Parking Brake Cable Guides    | Chassis Lubricant (GM Part No. 12377985) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.  |
| Automatic Transmission        | DEXRON®-VI Automatic Transmission Fluid.  |
| Manual Gearbox                | Manual Gearbox Oil (GM Part No. 88861800).  |
| Rear Axle                     | Rear Differential Fluid 75W-90 (GM Part No. 88900401).  |

| Usage  | Fluid/Lubricant   |
|--|---|
| Rear Axle (SS)   | Rear Differential Fluid 75W-90 Limited Slip (GM Part No. 88900401 and Limited Slip Additive 88900330).                  |
| Bonnet Latch Assembly, Secondary Latch, Pivots, Spring Anchor and Release Pawl | Lubriplate Lubricant Aerosol (GM Part No. 89021668) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB. |
| Key Lock Cylinders, Bonnet, Door, and Folding Seat Hinges                      | Multi-Purpose Lubricant, Superlube (GM Part No. 12346241).  |
| Weatherstrip Conditioning  | Weatherstrip Lubricant (GM Part No. 3634770) or Dielectric Silicone Grease (GM Part No. 12345579).                      |
| All: Weatherstrip  | Synthetic Grease with Teflon, Superlube (GM Part No. 12371287).   |

## 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 | 92196275       | A3137C              |
| Engine Oil Filter         |                |                     |
| 3.6L V6 Engine            | 25177917       | PF2129              |
| 6.2L V8 Engine            | 89017524       | PF48                |

## 11-6 Service and Maintenance

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| <b>Part</b>                      | <b>GM Part Number</b> | <b>ACDelco Part Number</b> |
|----------------------------------|-----------------------|----------------------------|
| Passenger Compartment Air Filter | 92234714              | CF178                      |
| Spark Plugs                      |                       |                            |
| 3.6L V6 Engine                   | 12622561              | 41-109                     |
| 6.2L V8 Engine (L99 or LS3)      | 12621258              | 41-110                     |
| Wiper Blades                     |                       |                            |
| Driver Side                      | 92231676              | -                          |
| Passenger Side                   | 92231677              | -                          |

## Technical Data

### Vehicle Identification

|  |      |
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### Vehicle Data

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## Vehicle Identification

### Vehicle Identification Number (VIN)



The Vehicle Identification Number may be stamped on the identification plate and on the floor pan, under the floor covering, visible under a cover.

The Vehicle Identification Number may be embossed on the instrument panel, visible through the windshield, or in the engine compartment on the right body panel.

### Identification Plate

The identification plate is located on the front left or right door frame.

## 12-2 Technical Data

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### Engine Identification

The eighth character in the VIN is the engine code. This code identifies the vehicle's engine, specifications, and replacement parts. See "Engine Specifications" under *Capacities and Specifications* on page 12-3 for the vehicle's engine code.

### Service Parts Identification Label

This label, in the boot, has the following information:

- Vehicle Identification Number (VIN).
- Model designation.

- Paint information.
- Production options and special equipment.

Do not remove this label from the vehicle.

## Vehicle Data

### Capacities and Specifications

| Application                                 | Capacities   |          |
|---|--|----------|
|   | Metric   | English  |
| Air Conditioning Refrigerant R134a          | For the air conditioning system refrigerant charge amount, see the refrigerant label located under the bonnet. See your dealer for more information. |          |
| Engine Cooling System                       |  |          |
| 3.6L V6 Engine (LFX) Automatic Transmission | 10.2 L   | 10.8 qt  |
| 6.2L V8 Engine (L99) Automatic Transmission | 10.8 L   | 11.4 qt  |
| 6.2L V8 Engine (LS3) Manual Transmission    | 11.2 L   | 11.8 qt  |
| Engine Oil with Filter                      |  |          |
| 3.6L V6 Engine (LFX)                        | 5.7 L  | 6.0 qt   |
| 6.2L V8 Engine (L99)                        | 7.6 L  | 8.0 qt   |
| 6.2L V8 Engine (LS3)                        | 7.6 L  | 8.0 qt   |
| Fuel Tank                                   | 71.0 L   | 18.8 gal |

## 12-4 Technical Data

---

| Application  | Capacities |           |
|--|------------|-----------|
|  | Metric     | English   |
| Rear Axle Fluid  | 0.9 L      | 1.0 qt    |
| Wheel Nut Torque   | 150 N•m    | 110 lb ft |
| *Add 3.3 oz. (98 mL) of friction modifier to the specified quantity of axle lubricant.   |            |           |
| All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling. |            |           |

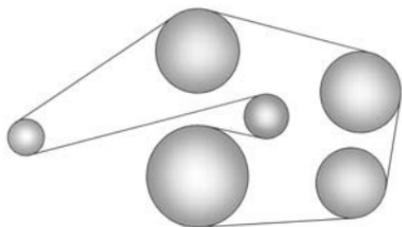
### Engine Specifications

| Engine                  | VIN Code | Horsepower                       | Torque                             | Spark Plug Gap                    |
|-------------------------|----------|----------------------------------|------------------------------------|-----------------------------------|
| 3.6L<br>V6 Engine (LFX) | 3        | 241<br>kW@6800 min <sup>-1</sup> | 377 N•m<br>@4800 min <sup>-1</sup> | 0.95–1.10 mm (0.037–<br>0.043 in) |
| 6.2L V8 (L99)           | J        | 298<br>kW@5900 min <sup>-1</sup> | 556 N•m<br>@4300 min <sup>-1</sup> | 0.95–1.10 mm (0.037–<br>0.043 in) |
| 6.2L V8 (LS3)           | W        | 318<br>kW@5900 min <sup>-1</sup> | 569 N•m<br>@4600 min <sup>-1</sup> | 0.95–1.10 mm (0.037–<br>0.043 in) |

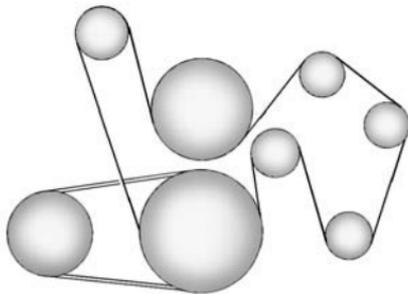
**Fuel Consumption and Emissions Information**

|   | Urban | Extra-Urban | Combined |
|---|-------|-------------|----------|
| <b>3.6L V6 Engine (LFX) Coupe</b>       |       |             |          |
| Carbon Dioxide (g/km)                   | 370   | 188         | 255      |
| Fuel Economy (L/100 km)                 | 15.9  | 8.1         | 10.9     |
| <b>3.6L V6 Engine (LFX) Convertible</b> |       |             |          |
| Carbon Dioxide (g/km)                   | 361   | 192         | 254      |
| Fuel Economy (L/100 km)                 | 15.5  | 8.3         | 10.9     |
| <b>6.2L V8 Engine (L99)</b>             |       |             |          |
| Carbon Dioxide (g/km)                   | 438   | 226         | 304      |
| Fuel Economy (L/100 km)                 | 18.9  | 9.7         | 13.1     |
| <b>6.2L V8 Engine (LS3)</b>             |       |             |          |
| Carbon Dioxide (g/km)                   | 484   | 238         | 329      |
| Fuel Economy (L/100 km)                 | 20.9  | 10.2        | 14.1     |

## Engine Drive Belt Routing



**3.6L V6 Engine**



**6.2L V8 Engines (L99 or LS3)**

## Customer Information

### Customer Information

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### Vehicle Data Recording and Privacy

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|--|------|
| Vehicle Data Recording and Privacy ..... | 13-3 |
|--|------|

## Customer Information

### Radio Frequency Identification (RFID)

RFID technology is used in some vehicles for functions such as tyre pressure monitoring and ignition system security, as well as in connection with conveniences such as Remote Keyless Entry (RKE) transmitters for remote door locking/unlocking and starting, and in-vehicle transmitters for garage door openers. RFID technology in GM vehicles does not use or record personal information or link with any other GM system containing personal information.

## Declaration of Conformity (Transmission Systems)

This vehicle has systems that transmit and/or receive radio waves subject to Directive 1999/5/EC. These systems are in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC. Copies of the original Declarations of Conformity can be obtained on our website.

# Declaration of Conformity (Tyre Jack)

## Tyre Jack



**GM North America**

GM North America  
300 Renaissance Center  
Detroit, MI 48243

### Declaration of Conformity

pursuant to Directive 2006/42/EC

We hereby declare that the product:

**Product description :** Car jack

**Type/Part No. :** 23175599

is in conformity with 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 is:

Gena L Vitale  
Engineering Group Manager/  
GSSLT Chassis Tools

---

## Translation of the Original Declaration of Conformity

### Declaration of Conformity

pursuant to Directive 2006/42/EC

We hereby declare that the product:

Product Description: Car jack

Type/Part Number: 23175599

Is in conformity with Directive 2006/42/EC.

Technical standards applied:

**GM14337:** = Standard Equipment Jack – Hardware Tests

**GMW15005:** = Standard Equipment Jack and Spare Tyre, Vehicle Test

The person authorised to compile the technical file is:

Gena L Vitale

Engineering Group Manager/

GSSLT Chassis Tools

## Vehicle Data Recording and Privacy

### Event Data Recorders

#### Data Storage Modules in the Vehicle

A large number of electronic components of your vehicle contain data storage modules temporarily or permanently storing technical data about the condition of the vehicle, events, and errors. In general, this technical information documents the condition of parts, modules, systems, or the environment:

- Operating conditions of system components (e.g., filling levels).
- Status messages of the vehicle and its single components (e.g., number of wheel revolutions/rotational speed, deceleration, lateral acceleration).
- Dysfunctions and defects in important system components.

- Vehicle reactions in particular driving situations (e.g., inflation of an airbag, activation of the stability regulation system).
- Environmental concerns (e.g., temperature).

This data is exclusively technical and helps identify and correct errors as well as optimise vehicle functions.

Motion profiles indicating travelled routes cannot be created with this data.

If services are used (e.g., repair works, service processes, warranty cases, quality assurance), employees of the service network (manufacturer included) are able to read out this technical information from the event and error data storage modules applying special diagnostic devices. If required, you will receive further information at these dealers. After an error has been corrected, the data is deleted from the error storage module or constantly overwritten.

## 13-4 Customer Information

---

When using the vehicle, situations may occur in which this technical data related to other information (accident report, damages on the vehicle, witness statements, etc.) may be associated with a specific person — possibly, with the assistance of an expert.

Additional functions contractually agreed upon with the client (e.g., vehicle location in emergency cases) allow the transmission of particular vehicle data from the vehicle.

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