

CTS/CTS-V Owner's Manual



Contents

Introduction 2
In Brief 5
Keys, Doors, and Windows 27
Seats and Restraints 53
Storage 107
Instruments and Controls 110
Lighting149
Infotainment System 157
Climate Controls 164
Driving and Operating 173
Vehicle Care 245
Service and Maintenance 318
Technical Data 325
Customer Information 330
OnStar 338
Index

Introduction





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

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

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

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, Warning, and Caution

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



⚠ Danger

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



⚠ Warning

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

Caution

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



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

Symbols

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

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

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

 $\ \ \, \stackrel{\textstyle \hookrightarrow}{\hookrightarrow} :$ Shown when there is more information on another page — "see page."

Vehicle Symbol Chart

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

☆: Airbag Readiness Light

☆: Air Conditioning

(ABS): Antilock Brake System (ABS)

(I): Brake System Warning Light

: Charging System

🕥 : Cruise Control

3: Do Not Puncture

T: Do Not Service

: Engine Coolant Temperature

- Exterior Lamps

: Flame/Fire Prohibited

: Fuel Gauge

Fuses:

ED: Headlamp Main/Dipped-Beam Changer

②: ISOFIX/LATCH System Child Restraints

L: Malfunction Indicator Lamp

≌: Oil Pressure

ப் : Power

Q: Remote Vehicle Start

. Seat Belt Reminders

😃 : Tyre Pressure Monitor

👼 : Traction Control/StabiliTrak

. Under Pressure

: Windscreen Washer Fluid

4	INTRODUCTION		
		∠ NOTES	

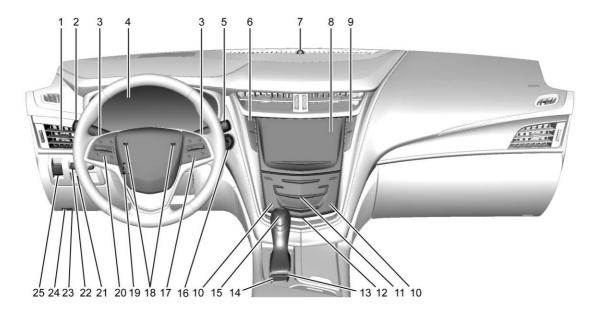
In Brief

Instrument Panel
Instrument Panel
Initial Drive Information
Initial Drive Information 8
Stop/Start System 8
Remote Keyless Entry (RKE)
System 8
Remote Vehicle Start 8
Door Locks
Boot
Windows 10
Seat Adjustment 10
Memory Features 13
Heated and Ventilated Seats 14
Head Restraint Adjustment 14
Seat Belts
Passenger Sensing System 15
Mirror Adjustment 15
Steering Wheel Adjustment 16
Interior Lighting 16
Exterior Lighting 17
Windscreen Wiper/Washer 17
Climate Controls 18
Transmission 19
Starting the Engine 20

Vehicle Features
Infotainment System 20
Steering Wheel Controls 20
Cruise Control
Driver Information
Centre (DIC)
Forward Collision Alert (FCA)
System 21
Forward Automatic
Braking (FAB) 21
Lane Keep Assist (LKA) 22
Lane Change Alert (LCA) 22
Surround Vision (CTS Only) 22
Curb View Camera
(CTS-V Only) 22
Rear Vision Camera (RVC) 23
Rear Cross Traffic Alert (RCTA)
System 23
Parking Assist
Automatic Parking
Assist (APA) 23
Power Sockets
Sunroof
Performance and Maintenance
Traction Control/Electronic
Stability Control 24
Tyre Pressure Monitor
Fuel (LTG 2.0L L4 Turbo
Engine)

Fuel (LT4 6.2L V8 Supercharged
Engine)
Engine Oil Life System 26
Car Wash Guidelines 26
Driving for Better Fuel
Economy

Instrument Panel



- 1. Air Vents

 ⇒ 171.
- Indicator Lever, See Indicator and
- Equipped).
- Instrument Cluster \$ 119.
- Windscreen Wiper/Washer \Rightarrow 112.
- *Hazard Warning Flashers* \$\pi\$ 153. Lane Keep Assist (LKA) \Rightarrow 232 (If Equipped).
 - Stop/Start Disable Switch (If Equipped). See Starting the
- 7. Light Sensor (If Equipped). See Automatic Headlamp System \$ 152
 - Solar Sensor, See Dual Automatic
- Infotainment \Rightarrow 157.
- Glove Box Button. See Glove Box ⇒ 107.

Automatic Parking Assist Button (If Equipped). See Assistance Systems for Parking or Reversing \$ 221.

- Parking Assist Button. See Assistance Systems for Parking or Reversing \Rightarrow 221.
- 10. Heated and Ventilated Front Seats \Rightarrow 62 (If Equipped).
- Dual Automatic Climate Control *Sustem* \$\(\pi\) 164.
- 12. Instrument Panel Storage

 ⇒ 107. Wireless Charging Pad (If Equipped) (Out of View). See *Wireless Charging* \Rightarrow 116.
- Traction Control/Electronic
- 14. MODE Switch, See Driver Mode.
- Shift Lever, See Automatic Transmission \Rightarrow 196. Manual Mode Button, See

Automatic Transmission \Rightarrow 196.

- ENGINE START/STOP Button.
- Steering Wheel Controls \Rightarrow 111. Driver Information Centre (DIC) Controls. See Driver Information

- 18.
- 19.
- 20. Equipped).

Adaptive Cruise Control \$\dip 212 (If Equipped).

Forward Collision Alert (FCA) *System* \Rightarrow 226 (If Equipped). Equipped).

- Instrument Panel Illumination Control \Rightarrow 154.
- Head-Up Display (HUD) \$\Rightarrow\$ 139 (If 22. Equipped).
- Data Link Connector (DLC) (Out of View). See Malfunction Indicator Lamp (Check Engine *Light)* \$\dip\$ 127.
- Bonnet Release. See Bonnet ⇒ 247.
- Electric Parking Brake (EPB) Switch. See Electric Parking Brake \$ 200.

Initial Drive Information

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

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

Stop/Start System

The vehicle may have a fuel saving Stop/Start system to shut off the engine and help conserve fuel.

When the brakes are applied and the vehicle is at a complete stop, the engine may turn off. When the brake pedal is released or the accelerator pedal is pushed, the engine will restart. The engine may restart even while the brake is applied. See *Starting the Engine* \Rightarrow 191.

Remote Keyless Entry (RKE) System

The Remote Keyless Entry (RKE) transmitter may work up to 60 m (197 ft) away.



Press the button to remove the key. The key can be used for the driver door and the rear folding seats.

Press to unlock the driver door or all doors, depending on the vehicle personalisation settings. The fuel door will also be unlocked.

Press to lock all doors and the fuel door, depending on the vehicle personalization settings.

Press 25 twice quickly to release the boot.

Press and release to initiate vehicle locator.

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

Press again to cancel the panic alarm.

See Keys \Leftrightarrow 27 and Remote Keyless Entry (RKE) System Operation \Leftrightarrow 28.

Remote Vehicle Start

The engine can be started from outside of the vehicle.

Starting the Vehicle

- 1. Press and release on the RKE transmitter.
- 2. Immediately press and hold Ω for at least four seconds or until the indicator lamps flash.

Start the vehicle normally after entering.

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

Remote start can be extended.

Cancelling a Remote Start

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

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

See Remote Vehicle Start \$\sigma\$ 33.

Door Locks

Keyless Access

Press the button on the door handle and pull the handle when the Remote Keyless Entry (RKE) transmitter is within 1 m (3 ft). See *Remote Keyless Entry (RKE) System Operation* \Rightarrow 28.

Manual Operation

From outside, use the key in the driver door. The key cylinder is covered by a cap. See *Door Locks* \Rightarrow 34.

From the inside rear doors, push down on the door lock knob on top of the door. To unlock a door, pull once on the door handle to unlock it, and again to open it.

Power Door Locks

From outside, press \bigcirc or \bigcirc on the RKE transmitter. See *Remote Keyless Entry (RKE) System Operation* \diamondsuit 28.



From inside, press of or a. The indicator light in the switch will illuminate when locked. See *Power Door Locks* ⇒ 37.

Boot



To open the boot, press on the driver door, press twice quickly on the Remote Keyless Entry (RKE) transmitter, or press the touch pad on the rear of the vehicle after unlocking all doors.

Press the touch pad on the rear of the trunk above the license plate when the RKE transmitter is in range. See *Remote Keyless Entry (RKE) System Operation* \Rightarrow 28 and *Boot* \Rightarrow 39.

Windows



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

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

See Power Windows \$\dip\$ 48.

Seat Adjustment

Power Seats



High Performance Seat

To adjust the seat:

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

High Performance Seat Adjustment



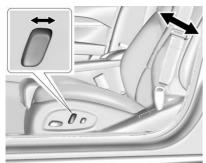
High Performance Seat

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

- Press Rearward (3) to make rearward adjustments of the selected feature.
- Press Down (4) to make downward adjustments of the selected feature.
- Press Forward (5) to make forward adjustments of the selected feature.

See *Electrically Operated Seat Adjustment* \$\dipprox 55.

Reclining Seat Backrests



Base Seat

To adjust the seat back:

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



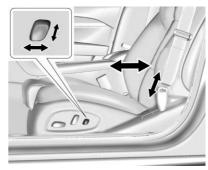
High Performance Seat

To adjust the seat back:

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

See Reclining Seat Backrests \Rightarrow 59.

Two-Way Lumbar and Bolster Adjustment

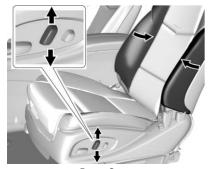


Base Seat

To adjust the two-way lumbar and bolster support, if equipped:

- Press and hold the lumbar adjustment control forward or rearward to adjust lumbar support forward or rearward.
- Press and hold the recliner control up or down to move the backrest bolster support inward or outward.

Four-Way Lumbar and Bolster Adjustment



Base Seat

To adjust the four-way lumbar and bolster support, if equipped:

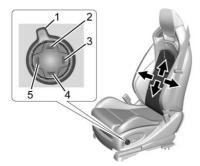
- Press and hold the lumbar adjustment control forward or rearward to adjust lumbar support forward or rearward and up or down for vertical lumbar adjustment.
- Press and hold the recliner control up or down to move the backrest bolster support inward or outward.

See *Lumbar Adjustment* \$\dip 58\$.

High Performance Bolster Support

Four-Way Lumbar Support

To adjust lumbar support, if equipped:



High Performance Seat

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

Cushion Bolster Support

To adjust cushion bolster support, if equipped:



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

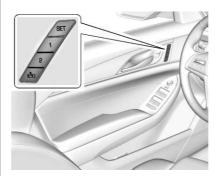
Back Bolster Support

To adjust back bolster support, if equipped:



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

Memory Features



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

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

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

When Easy Exit Options is enabled in vehicle personalisation, the feature automatically recalls the previously stored exit position when exiting the vehicle. See *Memory Seats* \Rightarrow 60.

Heated and Ventilated Seats



Uplevel Buttons Shown, Base Buttons Similar

If equipped, the buttons are near the climate controls on the centre stack. To operate, the ignition must be on.

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

Press or to ventilate the driver or passenger seat.

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

See Heated and Ventilated Front Seats \Rightarrow 62.

Auto Heated and Ventilated Seats

When the vehicle is on, this feature will automatically activate the heated or ventilated seats at the level required by the vehicle's interior temperature.

The active high, medium, low, or off heated or ventilated seat level will be indicated by the manual heated or ventilated seat buttons on the center stack. Use the manual heated or ventilated seat buttons on the center stack to turn auto heated or ventilated seats off.

If the passenger seat is unoccupied, the auto heated or ventilated seats feature will not activate that seat. The auto heated or ventilated seats feature can be programmed to always be enabled when the vehicle is on.

The heated or ventilated seats will not turn on during a remote start unless they are enabled in the vehicle personalization menu.

Head Restraint Adjustment

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.

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

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

See Head Restraints \$\dip 54\$ and Electrically Operated Seat Adjustment \$\dip 55\$.

Seat Belts



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

- How to Wear Seat Belts Properly

 ⇒ 68.
- ISOFIX Child Restraint Systems
 ⇒ 99.

Passenger Sensing System



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

⇒ 80.

The passenger airbag status indicator lights on the overhead console are visible when the vehicle is started. See Passenger Airbag Status Indicator

⇒ 126.

Mirror Adjustment

Exterior



Controls for the outside power mirrors are on the driver door.

To adjust each mirror:

- 1. Press L or R to select the driver or passenger side mirror.
- Press the arrows on the control pad to move the mirror up, down, right, or left.
- Adjust each mirror so that a little of the vehicle and the area behind it can be seen.

Press to deselect the mirror.

See Power Mirrors \$\diamoldo\$ 44.

Interior

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

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.

Power Tilt and Telescoping Wheel



If equipped, the control is on the left side of the steering column.

 Push the control up or down to tilt the steering wheel up or down. Push the control forward or rearward to move the steering wheel toward the front or rear of the vehicle.

Do not adjust the steering wheel while driving.

To set the power tilt wheel memory position, see *Memory Seats* \Rightarrow 60.

Interior Lighting

Dome Lamp



To change the dome lamp settings, press the following:

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

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

ON: Turns the lamp on.

Reading Lamps

There are front and rear reading lamps on the overhead console and over the rear passenger doors. These lamps come on when any door is opened.

To manually turn the reading lamps on or off:



Press ₩ or w next to each overhead console reading lamp.



Press the lamp lenses over the rear passenger doors.

Exterior Lighting



There are four positions:

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

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

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

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

See Exterior Lamp Controls \Rightarrow 149 and Daytime Running Lamps (DRL) \Rightarrow 151.

Windscreen Wiper/Washer



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

HI: Use for fast wipes.LO: Use for slow wipes.



INT: Use this setting for intermittent wipes or Rainsense, if equipped. For intermittent wipes, move the windscreen wiper stalk to INT. Turn the $\stackrel{\blacktriangleleft}{\widehat{\nabla}}$ INT band up for more frequent wipes or down for less frequent wipes.

If equipped with Rainsense and the feature is enabled in vehicle personalisation, move the windscreen wiper lever to INT and turn the INT band to adjust the sensitivity to moisture.

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

OFF: Use to turn the wipers off.

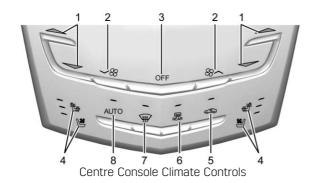
1X: For a single wipe, briefly move the stalk down. For several wipes, hold the stalk down.

↓ ♥ : Pull the stalk toward you to spray windscreen washer fluid and activate the wipers.

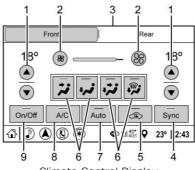
See Windscreen Wiper/Washer \Rightarrow 112.

Climate Controls

The climate control buttons on the centre console and on the climate control display are used to adjust the heating, cooling and ventilation.



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



Climate Control Display

 Driver and Passenger Temperature Controls

- 2. Fan Controls
- Rear (Rear Climate Control Display, If Equipped)
- 4. Sync (Synchronize Driver and Passenger Temperature)
- 5. Recirculation
- 6. Air Delivery Mode Control
- 7. Auto (Automatic Operation)
- 8. A/C (Air Conditioning)
- On/Off

See Dual Automatic Climate Control System \$\phi\$ 164 and Rear Climate Control System \$\phi\$ 169 (if equipped).

Transmission

Tap Shift

If equipped, permanent Tap Shift Mode may be entered with the shift lever in D (Drive), by pressing the M (Manual Mode) button on the top of the gear lever.

Temporary Tap Shift Mode may be entered while in D (Drive) using the tap shift controls on the back of the steering wheel.

Starting the Engine

When first starting the vehicle, the engine idle speed will be elevated to allow the catalytic converter, an emissions control device, to quickly reach operating temperature. After approximately 20 seconds, the engine will begin to transition to its normal, quieter idle speed, which can vary depending on the temperature. This is normal operation.

Vehicle Features

Infotainment System

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

Steering Wheel Controls

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

Cruise Control



- (5): Press to turn the system on and off. A white indicator appears in the instrument cluster when cruise is turned on.
- **+RES**: If there is a set speed in memory, press the control up briefly to resume to that speed or press and hold to accelerate. If the cruise control is already active, use to increase vehicle speed. To increase speed by 1 km/h (1 mph), press +RES up to the first detent. To increase speed to the

SET-: Press the control down briefly to set the speed and activate cruise control. If cruise control is already active, use to decrease vehicle speed. To decrease speed by 1 km/h (1 mph), press SET- down to the first detent. To decrease speed to the next 5 km/h (5 mph) mark on the speedometer, press SET- down to the second detent.

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

See Cruise Control \Rightarrow 209 or Adaptive Cruise Control \Rightarrow 212 (if equipped).

Driver Information Centre (DIC)

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



 \wedge or \vee : Press to move up or down in a list.

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

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

See *Driver Information Centre (DIC)*

⇒ 136.

Forward Collision Alert (FCA) System

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

See Forward Collision Alert (FCA) System \Leftrightarrow 226.

Forward Automatic Braking (FAB)

If the vehicle has Adaptive Cruise Control (ACC), it also has FAB, which includes Intelligent Brake Assist (IBA). When the system detects a vehicle ahead in your path that is travelling in the same direction that you may be about to crash into, it can provide a boost to braking or automatically

brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear.

See Forward Automatic Braking (FAB) \$ 229.

Lane Keep Assist (LKA)

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

See Lane Departure Warning (LDW) ⇒ 232 and Lane Keep Assist (LKA) *⇒* 232.

Lane Change Alert (LCA)

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

and Lane Change Alert (LCA) \Rightarrow 230.

Surround Vision (CTS Only)

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

See "Surround Vision" under Assistance Systems for Parking or Reversing \Rightarrow 221.

Front Vision Camera

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

See "Front Vision Camera" under Assistance Systems for Parking or Reversing \Rightarrow 221.

Curb View Camera (CTS-V Only)

If equipped, a view of the area in front of the vehicle displays on the infotainment display to aid with parking and low-speed maneuvers. The display shows a front, top down view at the top of the screen and left and right front camera images on the bottom.

See "Curb View Camera (CTS-V Series Only)" under Assistance Systems for Parking or Reversing \Rightarrow 221.

Rear Vision Camera (RVC)

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

See Assistance Systems for Parking or Reversing \Rightarrow 221.

Rear Cross Traffic Alert (RCTA) System

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

See Assistance Systems for Parking or Reversing \Rightarrow 221.

Parking Assist

If equipped, Rear Parking Assist (RPA) 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). RPA may show a warning triangle on the infotainment display and a graphic on the instrument cluster to provide the object distance. In addition, multiple beeps or seat pulses may occur if very close to an object.

The vehicle may also have the Front Parking Assist system.

See Assistance Systems for Parking or Reversing \Rightarrow 221.

Automatic Parking Assist (APA)

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

See "Automatic Parking Assist (APA)" under Assistance Systems for Parking or Reversing

⇒ 221.

Power Sockets

Power Sockets 12-Volt Direct Current

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

The vehicle has three 12-volt accessory power outlets:

- Inside the centre console storage in front of the armrest cover.
- Inside the storage area under the armrest cover.
- Inside the storage area on the rear of the center console, if equipped.

These sockets are powered while the vehicle is on or in ACC/ACCESSORY mode, or until the driver door is opened within 10 minutes of turning off the vehicle.

Lift the cover to access the accessory power outlet.

Sunroof

If equipped, the sunroof will only operate when the ignition is on or in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See Retained Accessory Power (RAP) ⇒ 193.



The driver side switch (1) operates the sunroof.

Vent: Press and release ← (1) to vent the sunroof. The sunshade will automatically open approximately 38 cm (15 in). Press and hold ← (1) to close the sunroof vent.

Express-Open/Express-Close: With the sunroof in the vent position, press ∠⇒ (1) a second time to express-open the sunroof. Press ← (1) to express-close the sunroof. To stop the sunroof partway, press the switch again.

The passenger side switch (2) operates the sunshade. Press and release (2) to express-open or express-close the sunshade. To stop the sunshade partway, press the switch again.

See Sunroof \Rightarrow 51.

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 TCS, press and release

 ^{or} on the center console.

 illuminates in the instrument cluster. A DIC message may display.
- Press ♣ again to turn traction control back on.
- To turn off both TCS and StabiliTrak, press and hold ♣ on the centre console until ♣ and ຝ

illuminate in the instrument cluster. A DIC message may display.

• Press 🗫 again to turn on both systems.

See Traction Control/Electronic Stability Control \Rightarrow 202.

The vehicle has Driver Mode Control and may have Competitive Driving Mode

See Driver Mode Control \Rightarrow 203 and Competitive Driving Mode \Rightarrow 206.

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* \$\dip 184\$. 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*

⇒ 285.

Fuel (LTG 2.0L L4 Turbo Engine)



Premium Recommended Fuel

Use unleaded petrol rated at 95 RON or higher in your vehicle. Unleaded petrol with an octane rating as low as 91 RON may be used, but it will reduce performance and fuel economy. See $Fuel \Rightarrow 234$.

Fuel (LT4 6.2L V8 Supercharged Engine)



Premium Required Fuel

Use 95 RON or higher octane unleaded gasoline in your vehicle. Do not use petrol with an octane rating lower as it may result in vehicle damage and lower fuel economy. See $Fuel \Leftrightarrow 234$.

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 ⇔ 253*.

Car Wash Guidelines

Caution

Some automatic car washes can cause damage to the vehicle, wheels and ground effects. 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* \$\infty 309.

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

Keys and Locks				
Keys 27				
Remote Keyless Entry (RKE)				
System 28				
Remote Keyless Entry (RKE)				
System Operation				
Remote Vehicle Start 33				
Door Locks 34				
Power Door Locks 37				
Delayed Locking 37				
Automatic Door Locks 37				
Lockout Protection 37				
Safety Locks				
Doors				
Boot 39				
Vehicle Security				
Vehicle Security 41				
Vehicle Alarm System 41				
Anti-theft Locking System 42				
Immobiliser				
Immobiliser Operation 43				
Exterior Mirrors				
Convex Mirrors 44				

Power Mirrors	44
Heated Mirrors	45
Automatic Dimming Mirror	45
Reverse Tilt Mirrors	45
Interior Mirrors	
Interior Rearview Mirrors	46
Automatic Dimming Rear View	
Mirror	46
Rear Camera Mirror	46
Windows	
Windows	48
Power Windows	48
Sun Visors	50
Rear Window Sunshade	50
Roof	
Sunroof	51

Keys and Locks

Keys

⚠ Warning

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





This key, inside the Remote Keyless Entry (RKE) transmitter, is used for the driver door and rear folding seats.

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

See your dealer if a new key is needed.

Remote Keyless Entry (RKE) System

See Declaration of Conformity \Rightarrow 334.

If there is a decrease in the Remote Keyless Entry (RKE) operating range:

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

Remote Keyless Entry (RKE) System Operation

The Keyless Access system allows for vehicle entry when the Remote Keyless Entry (RKE) transmitter is within 1 m (3 ft). See "Keyless Access Operation" later in this section.

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

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



: Press to lock all doors and the fuel flap. The indicators may flash and/or the horn may sound on the second press to indicate locking.

If the driver door is open when is pressed and Open Door Anti Lock Out is enabled, all doors will lock and then the driver door will immediately unlock. See *Vehicle Personalisation* ⇒ 143. If the passenger door is open when is pressed, all doors lock.

Pressing $\widehat{ }$ may also arm the alarm system. See *Vehicle Alarm System* $\diamondsuit 41.$

If equipped with auto mirror folding, pressing and holding \bigcirc for one second will fold the mirrors, if enabled. See *Vehicle Personalisation* \Rightarrow 143.

■: Press to unlock the driver door and the fuel door. Press again within five seconds to unlock all doors. The RKE transmitter can be programmed to unlock all doors on the first button press. See *Vehicle Personalisation*⇒ 143.

When remotely unlocking the vehicle at night, the headlamps and reversing lamps will come on for about 30 seconds to light your approach to the vehicle. The indicators may flash to indicate unlocking. See *Vehicle Personalisation* ⇔ 143.

Pressing \blacksquare will disarm the alarm system. See *Vehicle Alarm System* \Rightarrow 41.

If equipped with auto mirror folding, pressing and holding **1** for one second will unfold the mirrors, if enabled. See *Vehicle Personalisation* ⇒ 143.

 Ω : Press and release $\widehat{\Omega}$ and then immediately press and hold Ω for at least four seconds to start the engine from outside the vehicle using the RKE transmitter. See *Remote Vehicle Start* \Rightarrow 33.

Press and release one time to initiate vehicle locator. The exterior lamps flash and the horn chirps three times. Press and hold ₱ for more than three seconds to sound the panic alarm. The horn sounds and the indicator lamps flash until ₱ is pressed again or the vehicle is started. ₺ : Press twice quickly to release the boot.

Keyless Access Operation

The Keyless Access system lets you lock and unlock the doors and access the trunk without removing the RKE transmitter from your pocket, purse, briefcase, etc. The RKE transmitter must be within 1 m (3 ft) of the trunk or door being opened. If equipped, there will be a button on the outside door handles.

If equipped with memory seats, RKE transmitters 1 and 2 are linked to seating positions of memory 1 or 2. See *Memory Seats* \Rightarrow 60.

Keyless Unlocking/Locking from the Driver Door

When the doors are locked and the RKE transmitter is within 1 m (3 ft) of the door handle, pressing the lock/unlock button on the driver door handle will unlock the driver door, unless the lock/unlock button was used to lock the doors within the last five seconds.

When the driver door is unlocked using the lock/unlock button, and the lock/unlock button is press again with five seconds, all passenger doors will unlock.



Driver Door Shown, Passenger Similar

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

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

Keyless Unlocking/Locking from the Passenger Doors

When the doors are locked and the RKE transmitter is within 1 m (3 ft) of the door handle, pressing the lock/unlock button on a passenger door handle will unlock all doors, unless the lock/unlock button was used to lock the doors within the last five seconds

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

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

Anti-Theft Locking from Any Door

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

Anti-Theft Unlocking from Any Door

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

Passive Locking

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

The fuel door will also lock at this time.

If other electronic devices interfere with the RKE transmitter signal, the vehicle may not detect the RKE transmitter inside the vehicle.

If passive locking is enabled, the doors may lock with the RKE transmitter inside the vehicle. Do not leave the RKE transmitter in an unattended vehicle

Temporary Disable of Passive Locking

Temporarily disable passive locking by pressing and holding on the interior door switch with a door open

for at least four seconds, or until three chimes are heard. Passive locking will then remain disabled until on the interior door is pressed, or until the vehicle is switched on.

Remote Left In Vehicle Alert

Remote No Longer In Vehicle Alert

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

This occurs only once each time the vehicle is driven.

Keyless Boot Opening

Press the touch pad on the rear of the trunk above the license plate to open the trunk if the RKE transmitter is within 1 m (3 ft).

Key Access

To access a vehicle with a weak transmitter battery, see *Door Locks* \Rightarrow 34.

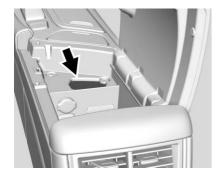
Programming Transmitters to the Vehicle

Only RKE transmitters programmed to the vehicle will work. If a transmitter is lost or stolen, a replacement can be purchased and programmed through your dealer. 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. Each vehicle can have up to eight transmitters programmed to it. See your dealer to program transmitters to this vehicle.

Starting the Vehicle with a Low **Transmitter Battery**

If the transmitter battery is weak or if there is interference with the signal, the DIC may display NO REMOTE DETECTED or NO REMOTE KEY WAS DETECTED, PLACE KEY IN TRANSMITTER POCKET, THEN START YOUR VEHICLE, when starting the vehicle.

To start the vehicle:



1. Open the center console storage area, remove the rubber mat, and place the RKE transmitter in the transmitter pocket.

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

> Replace the transmitter battery as soon as possible.

Battery Replacement

⚠ 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.

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



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



Separate the two halves of the transmitter using a flat tool inserted into the bottom centre of the transmitter, do not use the key slot.



- Remove the old battery. Do not use a metal object.
- Insert the new battery on the back housing, positive side facing down. Replace with a CR2032 or equivalent battery.
- Align the front and back housing then snap the transmitter together.

Remote Vehicle Start

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

Q: This button on the RKE transmitter is for remote start.

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

If equipped, the heated and ventilated front seats may also come on when the vehicle personalisation setting is enabled. See *Heated and Ventilated Front Seats* ⇔ 62.

If equipped with a remote start heated steering wheel, it may come on during a remote start. See *Heated Steering Wheel* \Rightarrow 111.

Laws in some local communities may restrict the use of remote starters. For example, some laws may require a person using remote start to have the vehicle in view. Check local regulations for any requirements. If your vehicle is low on fuel, do not use the remote start feature. The vehicle may run out of fuel.

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

Other conditions can affect the performance of the transmitter. See Remote Keyless Entry (RKE) System $\Rightarrow 28$.

Starting the Engine Using Remote Start

- 1. Press and release on the RKE transmitter.
- Immediately press and hold for at least four seconds or until
 the indicator lamps flash. The
 flashing confirms the request to
 remote start the vehicle has been
 received.

During the remote start, the parking lights will remain on as long as the engine is running.

The engine will shut off after 10 minutes unless a time extension is made or the ignition is turned on.

Press the brake pedal and turn the ignition on to drive the vehicle.

Extending Engine Run Time

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

The remote start can only be extended once.

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

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

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

Cancelling a Remote Start

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

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

Conditions in Which Remote Start Will Not Work

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

- The ignition is in any mode other than off.
- A transmitter is in the vehicle.
- 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 have already been used.
- The vehicle is not in P (Park).

Door Locks

⚠ Warning

Unlocked doors can be dangerous.

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

(Continued)

Warning (Continued)

and can suffer permanent injuries or even death from heat stroke. Always lock the vehicle whenever leaving it.

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

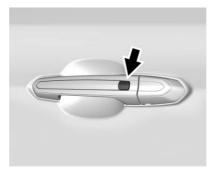
To lock or unlock the doors from outside the vehicle:

- Press or or on the Remote
 Keyless Entry (RKE) transmitter.
 See Remote Keyless Entry (RKE)
 System Operation ⇒ 28.
- Use the key in the driver door. The key lock cylinder is covered with a cap.

See "Driver Door Key Lock Cylinder Access (In Case of Dead Battery)" later in this section. To lock or unlock the doors from inside the vehicle:

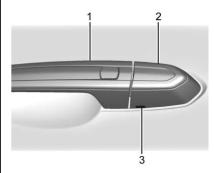
- Press or on the power door lock switch.
- Pull the door handle once to unlock it. Pull the door handle again to unlatch it.

Keyless Access



The RKE transmitter must be within 1 m (3 ft) of the boot or door being opened. Press the button on the door handle to open. See "Keyless Access Operation" in *Remote Keyless Entry* (RKE) System Operation \Rightarrow 28.

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

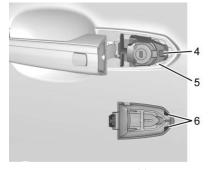


To access the driver door key lock cylinder:

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

To replace the cap:

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



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





- Slide the cap forward and press the forward edge to install the cap in place.
- 4. Release the door handle.

5. Check that the cap is secure.

Free-Turning Locks

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

Power Door Locks



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

?: Press to unlock the doors.

Delayed Locking

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

Delayed locking can only be turned on when the Open Door Anti-Lockout feature has been turned off. When is pressed on the power door lock switch with the door open, a chime will sound three times indicating that delayed locking is active.

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

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

Automatic Door Locks

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

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

To unlock the doors:

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

Lockout Protection

If the vehicle is on or in ACC/ ACCESSORY and the power door lock switch is pressed with the driver door open, all the doors will lock and only the driver door will unlock.

If the vehicle is off and locking is requested while a door is open, when all doors are closed the vehicle will check for RKE transmitters inside. If an RKE transmitter is detected and the number of RKE transmitters inside

has not reduced, the driver door will unlock and the horn will chirp three times.

Lockout Protection can be manually overridden with the driver door open by pressing and holding $\widehat{\bullet}$ on the power door lock switch.

Open Door Anti-Lockout

Safety Locks



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

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

The rear door power windows are also disabled. See *Power Windows* \Rightarrow 48.

Press again to deactivate the lockout switch.

If an inside rear door handle is being pulled at the same time the safety lock is deactivated, that door will remain locked and the indicator light may flash. Release the handle, then press the safety lock twice to deactivate the safety locks.

Doors

Boot

⚠ Warning

Exhaust gases can enter the vehicle if it is driven with the tailgate or 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:

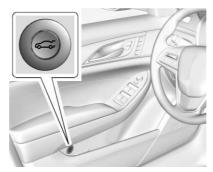
- Close all of the windows.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to a setting that brings in only outside air and (Continued)

Warning (Continued)

set the fan speed to the highest setting. See "Climate Control Systems" in the Index.

 If the vehicle is equipped with a power tailgate, disable the power tailgate function.

Boot Release



To open the boot, the vehicle must be off or the gear lever must be in P (Park).

- Press on the driver door.
- Press 25 twice quickly on the Remote Keyless Entry (RKE) transmitter.



 Press the touch pad on the rear of the boot above the number plate when all doors are unlocked.

The boot can be opened while the vehicle is locked by pressing the touch pad above the number plate while the RKE transmitter is within 1 m (3 ft) of the rear of the vehicle. See *Remote Keyless Entry (RKE) System Operation* ⇒ 28.

Close the trunk by pulling on the pull cup.

Rear Seat Pass-Through

Use the rear seat pass-through door when transporting long items.

To open, pull down the rear seat armrest. Pull the lever all the way down to release the door.

To close, push it up and back into place. Try to open the door without pulling up on the lever to make sure it is locked into place.

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



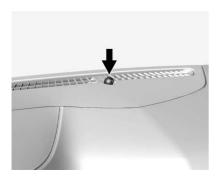
After pulling the emergency trunk release handle, push the handle back into the bezel.

Vehicle Security

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

Vehicle Alarm System

This vehicle has an anti-theft alarm system.



The indicator light, on the instrument panel near the 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

- Turn off the vehicle.
- Lock the vehicle in one of three ways:
 - Use the RKE transmitter.
 - Use the Keyless Access system.
 - With a door open, press the inside **1**.
- 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 pre-alarm. If the vehicle is not started, or the door is not unlocked by pressing on the RKE transmitter during the 10-second pre-alarm, the alarm will be activated.

The alarm will also be activated if a passenger door, the 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 the next unauthorised event.

Disarming the Alarm System

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

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

To avoid setting off the alarm by accident:

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

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

How to Detect a Tamper Condition

If a is pressed on the 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.

Power Sounder, Inclination Sensor and Intrusion Sensor

In addition to the standard theft-deterrent system features, this system also has a power sounder, inclination sensor, and intrusion sensor. The power sounder provides an audible alarm which is different from the vehicle's horn. It has its own power source, and can sound an alarm when the vehicle's battery is compromised.

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

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

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

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

Intrusion and Inclination Sensors Disable Switch

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

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

Anti-theft Locking System



Do not use the system if there are people in the vehicle! The doors cannot be unlocked or opened from the inside.

The vehicle is equipped with a deadbolt locking feature in addition to the standard door locks

The deadbolt is engaged whenever you press on the RKE transmitter twice within five seconds with all doors closed and the vehicle off. The deadbolt lock can also be engaged with the Keyless Access system. See "Keyless Access Operation" under Remote Keyless Entry (RKE) System Operation \$\dip 28\$.

When the doors are secured with the deadbolt, they cannot be unlocked or opened using the controls or handles inside the vehicle.

Press on the transmitter once to open the deadbolt and unlock the driver door. Pressing the button again within five seconds will unlock all of the doors.

Immobiliser

See Declaration of Conformity \Rightarrow 334.

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 vehicle is turned off.

The immobilization system is disarmed when the ignition is turned on or to ACC/ACCESSORY and a valid transmitter is present in the vehicle.



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

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

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

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

If the vehicle will not change ignition modes (ACC/ACCESSORY, on, off), and the RKE transmitter appears to be undamaged, try another transmitter. Or, you may try placing the transmitter in the transmitter pocket located in the centre console.

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

It is possible for the immobiliser system to learn new or replacement RKE transmitters. Up to eight transmitters can be programmed for the vehicle. To program additional transmitters, see "Programming Transmitters to the Vehicle" under Remote Keyless Entry (RKE) System Operation \Rightarrow 28.

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

Exterior Mirrors

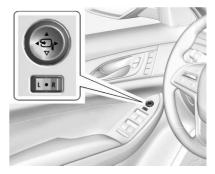
Convex Mirrors



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



To adjust each mirror:

- 1. Press L or R to select the driver or passenger side mirror.
- Press the arrows on the control pad to move the mirror up, down, right, or left.
- Adjust each mirror so that a little of the vehicle and the area behind it can be seen.
- 4. Press to deselect the mirror.

Power Folding Mirrors

The outside mirrors fold inward to prevent damage when going through an automatic car wash. To fold the mirrors move the selector switch to and press the down arrow on the control pad. Both mirrors will fold. Press the down arrow again to return the mirrors to their original position.

Reset the power folding mirrors if:

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

To reset the power folding mirrors, fold and unfold the mirrors once using the controls. A noise may be heard during the resetting. This sound is normal after a manual folding operation.

Auto Mirror Folding

If equipped, with the ignition off, press and hold on the RKE transmitter for approximately one second to automatically fold the exterior mirrors, Press and hold on the RKE transmitter for approximately one second to unfold. See *Remote Keyless Entry (RKE) System Operation* ⇒ 28

This feature can be turned on or off. See *Vehicle Personalisation* \Rightarrow 143.

Memory Mirrors

The vehicle may have memory mirrors. See *Memory Seats* \Rightarrow 60.

Side Blind Zone Alert (SBZA)

The vehicle may have SBZA. See *Side Blind Zone Alert (SBZA)* \Rightarrow 230.

Lane Change Alert (LCA)

The vehicle may have LCA. See *Lane Change Alert (LCA)* \Leftrightarrow 230.

Heated Mirrors

If equipped with heated mirrors:

REAR: The rear window demister also heats the outside mirrors.

Automatic Dimming Mirror

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

Reverse Tilt Mirrors

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

 The vehicle is shifted out of R (Reverse), or remains in R (Reverse) for about 30 seconds.

- 46
- The ignition is turned off.
- The vehicle is driven in R (Reverse) above a set speed.

Turn this feature on or off through vehicle personalisation. See Vehicle Personalisation \Rightarrow 143.

Interior Mirrors

Interior Rearview Mirrors

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

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

Automatic Dimming Rear View Mirror

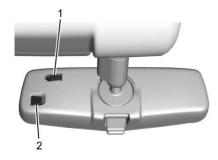
The rearview mirror automatically dims to reduce the glare of the headlamps from behind. This feature comes on when the vehicle is started.

Rear Camera Mirror

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



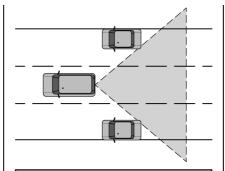
Pull the tab rearward to turn on the display. Push the tab forward to turn it off. When off, the mirror is automatic dimming. Adjust the mirror for a clear view of the area behind the vehicle while the display is off.



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



Each button press cycles the brightness between five settings.



⚠ Warning

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



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

Troubleshooting

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

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

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

Windows



⚠ Warning

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



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

Power Windows



Warning

Children could be seriously injured or killed if caught in the path of a closing window. Never leave the Remote Keyless Entry (RKE) transmitter in a vehicle with children. When there are children in the rear seat, use the window lockout switch to prevent operation of the windows. See *Keys* \Rightarrow 27.



Power windows work when the ignition is on, in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)* ⇒ 193.

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

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

Window Lockout



This feature stops the rear passenger window switches from working.

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

Window Express Movement

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

Window Automatic Reversal System

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

Automatic Reversal System Override

⚠ Warning

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

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

Programming the Power Windows

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

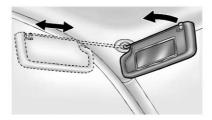
- 1. Close all doors.
- 2. Turn the ignition on or to ACC/ ACCESSORY.
- Partially open the window to be programmed. Then close it and continue to pull the switch briefly after the window has fully closed.
- Open the window and continue to press the switch briefly after the window has fully opened.

Remote Window Operation

If equipped, this feature allows all the windows to be opened remotely. If enabled in vehicle personalisation, press and hold on the RKE transmitter. See *Vehicle Personalisation*

⇒ 143.

Sun Visors



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

Rear Window Sunshade



If equipped with a rear window sunshade, the switch is on the overhead console. The sunshade only operates when the ignition is on.

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

When shifting the vehicle into R (Reverse), the sunshade will automatically retract if it is extended. It will re-extend after a short delay when shifting into D (Drive).

Rear Passenger Door Sunshades



If equipped, use the handle to pull the sunshade up and attach to the holder at the top of the window. There is also a small shade for the rear corner of the window.

To close the sunshade, use the handle to unhook and hold it while it retracts down.

Roof

Sunroof

If equipped, the sunroof will only operate when the ignition is on or in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. See Retained Accessory Power (RAP) ⇒ 193.



The driver side switch (1) operates the sunroof.

Vent: Press and release ← (1) to vent the sunroof. The sunshade will automatically open approximately 38 cm (15 in). Press and hold ← (1) to close the sunroof vent.

Express-Open/Express-Close: With the sunroof in the vent position, press (1) a second time to express-open the sunroof. Press (1) to express-close the sunroof. To stop the sunroof partway, press the switch again.

The passenger side switch (2) operates the sunshade. Press and release (2) to express-open or express-close the sunshade. To stop the sunshade partway, press the switch again.

Automatic Reversal System

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

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

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



Dirt and debris may collect on the sunroof seal or in the track. This could cause an issue with sunroof operation or noise. It could also plug the water drainage system. Periodically open the sunroof and remove any obstacles or loose debris. Wipe the sunroof seal and roof sealing

area using a clean cloth, mild soap, and water. Do not remove grease from the sunroof.

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

Seats and Restraints

Head Restraints Head Restraints	54
Front Seats Electrically Operated Seat	
Adjustment	
Lumbar Adjustment	
Thigh Support Adjustment	58
Reclining Seat Backrests	
Memory Seats Heated and Ventilated Front	60
Seats	62
Rear Seats	
Rear Seats	
Heated Rear Seats	
Rear Seat Pass-Through Door	67
Seat Belts	
Seat Belts	67
How to Wear Seat Belts	
Properly	68
Three-Point Belt	69
Seat Belt Use During	
Pregnancy	
Safety System Check	73
Seat Belt Care	73

Replacing Seat Belt System Parts	
after a Crash	74
Airbag System	
Air-Bag System	
Where Are the Airbags?	76
When Should an Airbag	
Inflate?	77
What Makes an Airbag Inflate?	78
How Does an Airbag Restrain?	79
What Will You See after an Airbag	
Inflates?	79
Passenger Sensing System	80
Servicing the Airbag-Equipped	
Vehicle	84
Adding Equipment to the	
Airbag-Equipped Vehicle	
Airbag System Check	85
Replacing Airbag System Parts	
after a Crash	86
Child Restraints	
Older Children	86
Infants and Young Children	
Child Restraint Systems	
Where to Put the Restraint	
ISOFIX Child Restraint	
Systems	99
Securing Child Restraints (With	
the Seat Belt in the	
D C ()	00

Securing Child Restraints (With
the Seat Belt in the
Front Seat) 101
Pedestrian Protection System Pedestrian Protection System 103

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.



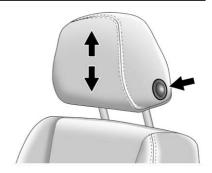
With head restraints that are not installed and adjusted properly, there is a greater chance that occupants will suffer a neck/spinal injury in a crash. Do not drive until the head restraints for all occupants are installed and adjusted properly.



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.

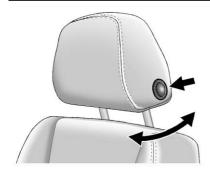
Front Seats

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



The height of the head restraint can be adjusted.

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



To adjust the head restraint forward and rearward, press the button located on the side facing the head restraint and move it forward or rearward until the desired locking position is reached. Try to move the head restraint after the button is released to make sure that it is locked in place.

The front seat outboard head restraints are not removable.

Rear Seats

The vehicle's rear seat has adjustable head restraints in all three seating positions.

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



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

Rear head restraints are not removable.

Front Seats

Electrically Operated Seat Adjustment



High Performance Seat Shown, Others Similar

To adjust the seat:

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

If equipped, raise or lower the front part of the seat cushion by moving the front of the control up or down.

To adjust the seatback, see Reclining Seat Backrests \$ 59.

To adjust the lumbar support, see *Lumbar Adjustment* \Rightarrow 58.

Some vehicles are equipped with a Safety Alert Seat. This feature activates a vibrating pulse alert in the driver seat to help the driver avoid crashes.

High Performance Seat Adiustment

Warning

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



High Performance Seat

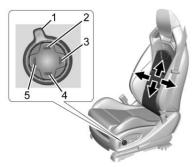
- Feature Select
- Up
- Rearward
- Down
- 5. Forward
- Move Feature Select (1) to display seat adjustments on the centre console. Press and release or hold to scroll through features.
- Press Up (2) to make upward adjustments of the selected feature.

- Press Rearward (3) to make rearward adjustments of the selected feature
- Press Down (4) to make downward adjustments of the selected feature.
- Press Forward (5) to make forward adjustments of the selected feature.

Four-Way Lumbar Support

To adjust lumbar support for a base seat, see Lumbar Adjustment \$\dip 58\$.

To adjust lumbar support for high performance seats, if equipped:



High Performance Seat

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

Cushion Bolster Support

To adjust cushion bolster support, if equipped:



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

Back Bolster

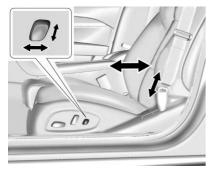
To adjust back bolster, if equipped:



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

Lumbar Adjustment

Two-Way Lumbar and Bolster Adjustment

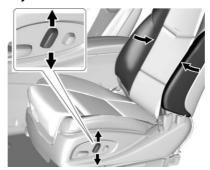


Base Seat

To adjust the two-way lumbar and bolster support, if equipped:

- Press and hold the lumbar adjustment control forward or rearward to adjust lumbar support forward or rearward.
- Press and hold the recliner control up or down to move the backrest support inward or outward.

Four-Way Lumbar and Bolster Adjustment

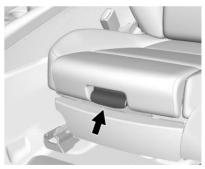


Base Seat

To adjust the four-way lumbar and bolster support, if equipped:

- Press and hold the lumbar adjustment control forward or rearward to adjust lumbar support forward or rearward and up or down for vertical lumbar adjustment.
- Press and hold the recliner control up or down to move the backrest support inward or outward.

Thigh Support Adjustment



Base Seat

If equipped, pull up on the lever. Then pull or push on the support to lengthen or shorten. Release the lever to lock in place.

Reclining Seat Backrests

⚠ Warning

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

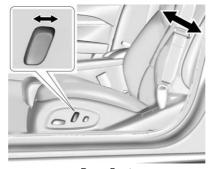
The shoulder belt will not be against your body. Instead, it will be in front of you. In a crash, you could go into it, receiving neck or other injuries.

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

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



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



Base Seat

To adjust the seatback:

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

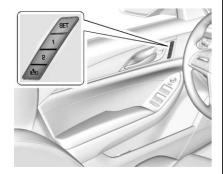


High Performance Seat

To adjust the seatback:

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

Memory Seats



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

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

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

Vehicle Personalisation Settings

 To have the Auto Memory Recall movement begin when the vehicle is started, select the Settings menu, then Vehicle, then Comfort and Convenience, and then Auto

- Memory Recall. Select On or Off. See "Auto Memory Recall" later in this section.
- To begin Easy Exit Recall movement when the ignition is turned off and the driver door is opened, or when the ignition is turned off with the driver door already opened, select the Settings menu, then Vehicle, then Comfort and Convenience, and then Easy Exit Options. Select On or Off. See "Easy Exit Recall" later in this section.

Identifying Driver Number

To identify the driver number:

I. Start the vehicle with the other key or RKE transmitter. The DIC should display the driver number; 1 or 2. Turn the ignition off and remove the key or RKE transmitter from the vehicle.

Start the vehicle with the initial key or RKE transmitter. The DIC should display the other driver number not shown in step 1.

Saving Memory Positions

Read these instructions completely before saving memory positions.

To save preferred driving positions 1 and 2:

- Turn the ignition on or to ACC/ ACCESSORY.
 - A DIC welcome message may be displayed indicating number 1 or 2 for memory recalls.
- Adjust all available memory features to the desired driving position.
- 3. Press and release SET; a beep will sound.
- Immediately press and hold the 1 or 2 memory button matching the above DIC welcome message until two beeps sound.

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

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

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

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

Manually Recalling Memory Positions

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

To stop manual recall movement, release 1, 2, or (1). Recall can also be stopped by pressing a power seat, SET, power mirror, or power steering wheel

control, if memory equipped. The driver or passenger side mirror must be selected.

Auto Memory Recall

The vehicle identifies the number of the current driver's RKE transmitter (1–8). See *Remote Keyless Entry (RKE)* System Operation ⇒ 28. If the RKE transmitter is 1 or 2, and Auto Memory Recall is programmed on in vehicle personalisation, the positions saved to the same memory button number 1 or 2 are automatically recalled when the ignition is turned on, or turned from off to ACC/ACCESSORY. RKE transmitters 3–8 will not provide automatic memory recalls.

To turn Auto Memory Recall on or off, see "Vehicle Personalisation Settings" previously in this section and *Vehicle Personalisation*

⇒ 143.

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

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

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

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

Easy Exit Recall

Easy Exit Recall is not linked to an RKE transmitter. The position stored to is used for all drivers. To turn Easy Exit Recall on or off, see "Vehicle Personalisation Settings" previously in this section and *Vehicle Personalisation* \$\dip 143\$.

If turned on, the position saved to is automatically recalled when one of the following occurs:

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

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

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

Obstructions

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

Heated and Ventilated Front Seats



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



If equipped, the buttons are near the climate controls on the centre stack. To operate, the ignition must be on.

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

Press **b** or **b** to ventilate the driver or passenger seat.

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

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

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

The passenger seat may take longer to heat up.

Auto Heated and Ventilated Seats

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

The active high, medium, low, or off heated or ventilated seat level will be indicated by the manual heated and ventilated seat buttons on the centre console. Use the manual heated and ventilated seat buttons on the centre console to turn auto heated or

ventilated seats off. If the passenger seat is unoccupied, the auto heated or ventilated seats feature will not activate that seat. The auto heated and ventilated seats feature can be programmed to always be enabled when the vehicle is on. If equipped with a heated steering wheel, the auto heated steering wheel activation will follow the heated seat auto activation and the heated steering wheel indicator will follow the status of the steering wheel heat.

Remote Start Heated and Ventilated Seats

If equipped, the heated seats will turn on automatically during a remote start if it is cold outside and the ventilated seats will turn on automatically if it is hot outside. If equipped, the heated steering wheel will turn on automatically during a remote start if it is cold outside. The heated and ventilated seat indicators and heated steering wheel indicator may not come on during this operation.

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

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

The heated or ventilated seats will not turn on during a remote start unless they are enabled in the vehicle personalisation menu.

See Remote Vehicle Start \Rightarrow 33 and Vehicle Personalisation \Rightarrow 143.

Rear Seats

Rear Seat Reminder

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

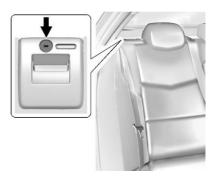
This feature will activate when a second row door is opened while the vehicle is on, or up to 10 minutes before the vehicle is turned on. There will be an alert when the vehicle is turned off. The alert does not directly detect objects in the rear seat; instead, under certain conditions, it detects when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

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

vehicle through the rear door and left the vehicle without the vehicle being turned off.

The feature can be turned on or off. See *Vehicle Personalisation* \Rightarrow 143.

Seatback Lock



Split fold seats are equipped with a locking latch.

Lock and unlock the seatback using the vehicle key in the cylinder.

The latch will not open when the seatback is locked.

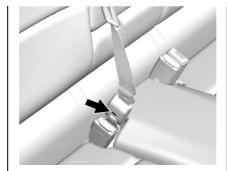
Folding the Seat Backrest

Caution

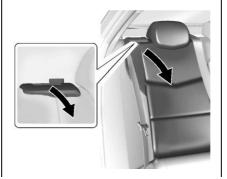
Folding a rear seat with the seat belts still fastened may cause damage to the seat or the seat belts. Always unfasten the seat belts and return them to their normal stowed position before folding a rear seat.

If equipped, either side of the backrest can be folded for more cargo space. Fold a seatback only when the vehicle is not moving.

To fold the seatback:



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



2. Unlock the seatback using the vehicle key in the cylinder.

Pull the lever on top of the seatback toward you to release the seatback.

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

 Fold the backrest forward.
 Repeat Steps 2 and 3 to fold the other seatback, if desired.

Raising the Seat Backrest

⚠ Warning

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

⚠ Warning

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

To raise a seatback:

- Lift the seatback up. Make sure the center seat belt and latch do not get trapped behind the seat. Push the seatback rearward to secure it in place.
 - A red tab near the seatback lever retracts when the seatback is in place.
- Push and pull the top of the seatback to be sure it is in position.
- Lock the seatback using the vehicle key in the cylinder.

- Reconnect the center seat belt mini-latch to the mini-buckle. Do not let the belt twist.
- Pull on the center seat belt to make sure the mini-latch is secure.
- 6. Repeat the steps to raise the other seatback, if necessary.

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

Heated Rear Seats

⚠ Warning

If temperature change or pain to the skin cannot be felt, the seat heater may cause burns. See the Warning under *Heated and*Ventilated Front Seats \$\dipprox 62.



If equipped, the buttons are on the rear of the centre console.

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

Press the button once for the highest setting. With each press of the button, the heated seat changes to the next lower setting, and then the off setting. Three lights indicate the highest setting, and one light indicates the lowest. If the heated seats are on high,

the level may automatically be lowered after approximately 30 minutes.

Rear Seat Pass-Through Door



The vehicle has a rear seat pass-through door in the centre of the rear backrest. Fold down the center armrest and pull the lever all the way down to release the door.

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

Seat Belts

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



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

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

(Continued)

Warning (Continued)

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

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

This vehicle has indicators as a reminder to fasten the seat belts. See *Seat Belt Reminders* \Rightarrow 125.

Why Seat Belts Work



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

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

Questions and Answers About Seat Belts

- Q: Will I be trapped in the vehicle after a crash if I am wearing a seat belt?
- A: You *could* be whether you are wearing a seat belt or not. Your 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 a seat belt?
- A: Airbags are supplemental systems only. They work *with* seat belts not instead of them. Whether or not an airbag is provided, all occupants still have to buckle up to get the most protection.

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

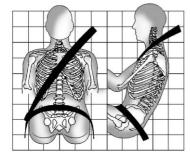
How to Wear Seat Belts Properly

This section is only for people of adult size.

There are special things to know about seat belts and children, and there are different rules for smaller children and infants. If a child will be riding in the vehicle, see *Older Children* ⇔ 86 or *Infants and Young Children* ⇔ 88. Follow those rules for everyone's protection.

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

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



- Sit up straight and always keep your feet on the floor in front of you.
- Always use the correct buckle for your seating position.
- Wear the lap part of the belt low and snug on the hips, just touching the thighs. In a crash,

this applies force to the strong pelvic bones and you would be less likely to slide under the lap belt. If you slid under it, the belt would apply force on your abdomen. This could cause serious or even fatal injuries.

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

⚠ Warning

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

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

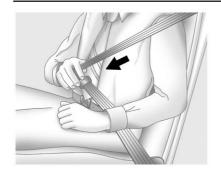
Three-Point Belt

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

If you are using a rear seating position with a detachable seat belt and the seat belt is not attached, see *Rear Seats* ⇔ 64 for instructions on reconnecting the seat belt to the mini-buckle.

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

 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.

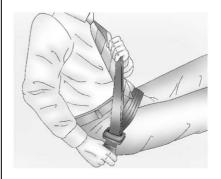
The lap-shoulder belt may lock if you pull the belt across you very quickly. If this happens, let the belt go back slightly to unlock it. Then pull the belt across you more slowly.



If the webbing locks in the catch plate before it reaches the buckle, tilt the catch plate flat to unlock.



- 3. Push the latch plate into the buckle until it clicks.
 - Pull up on the latch plate to make sure it is secure.
 - Position the release button on the buckle so that the seat belt could be quickly unbuckled if necessary.
- 4. If equipped with a shoulder belt height adjuster, move it to the height that is right for you. See "Shoulder Belt Height Adjuster" later in this section for instructions on use and important safety information.



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



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

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

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

Shoulder Belt Height Adjuster

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

Adjust the height so the shoulder portion of the belt is on the shoulder and not falling off it. The belt should be close to, but not contacting, the neck. Improper shoulder belt height adjustment could reduce the effectiveness of the seat belt in a crash. See *How to Wear Seat Belts Properly* \Leftrightarrow 68.



Press the release button and move the height adjuster to the desired position. The adjuster can be moved up by pushing the slide/trim up. After the adjuster is set to the desired position, try to move it down without pushing the release button to make sure it has locked into position.

Automatic Seat Belt Tightening System

The vehicle may have the Automatic Seat Belt Tightening System.

Each time the vehicle is started with the front seat belts buckled, the system activates once to tighten the seat belts when the forward vehicle speed exceeds the threshold for activation.

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

The system turns off whenever Competitive Driving Mode is activated, and will turn back on when Competitive Driving Mode is deactivated. See *Competitive Driving Mode* ⇔ 206.

The system will not activate if the Traction Control/Electronic Stability Control system is not functioning properly. See *Traction Control/Electronic Stability Control ⇒ 202*. If there is a problem with the Automatic Seat Belt Tightening System, a message displays on the Driver Information Center (DIC). If a system unavailable message displays repeatedly or a service message displays, see your dealer. Other seat belt functions are not affected by the Automatic Seat Belt Tightening System.

Seat Belt Pretensioners

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

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

⇒ 74.

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

Rear Seat Belt Comfort Guides

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

Comfort guides may be available through your retailer for the rear outboard seating positions. If available, instructions are included with the guide.

Seat Belt Use During Pregnancy

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



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

The best way to protect the foetus is to protect the mother. When a seat 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 seat belts effective is wearing them properly.

Safety System Check

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

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

⇒ *125*.

Keep seat belts clean and dry. See *Seat Belt Care* \Rightarrow 73.

Seat Belt Care

Keep belts clean and dry.



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

Seat belts should be properly cared for and maintained.

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

Replacing Seat Belt System Parts after a Crash



A crash can damage the seat belt system in the vehicle. A damaged seat belt system may not properly protect the person using it, resulting in serious injury or even death in a crash. To help make sure the seat belt systems are working properly after a crash, have them inspected and any necessary replacements made as soon as possible.

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

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

Have the seat belt pretensioners checked if the vehicle has been in a crash, or if the airbag readiness light stays on after you start the vehicle or while you are driving. See Airbag Readiness Light \$ 126.

⚠ Warning

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

Airbag System

Air-Bag System

The vehicle has the following airbags:

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

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

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

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

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

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

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

⚠ Warning

You can be severely injured or killed in a crash if you are not wearing your seat belt, even with airbags. Airbags are designed to work with seat belts, not replace them. Also, airbags are not designed to inflate in every crash. In some crashes seat belts are the only restraint. See When Should an Airbag Inflate? ▷ 77.

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

⚠ Warning

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

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

⚠ Warning

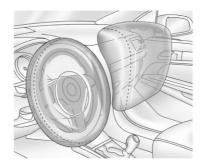
Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Always secure children properly in the vehicle. To read how, see Older Children ▷ 86 or Infants and Young Children ▷ 88.



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*

⇒ 126.

Where Are the Airbags?

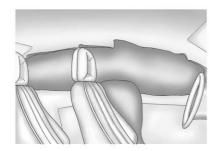


The driver frontal airbag is in the centre of the steering wheel.

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



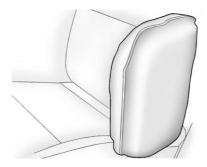
The driver knee airbag is below the steering column. The front outboard passenger knee airbag is below the glove box.



Driver Side Shown, Passenger Side Similar

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

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



Rear Seat Driver Side Shown Passenger Side Similar

The second row seat-mounted side impact airbags are in the sides of the rear seatback closest to the door.



Warning

If something is between an occupant and an airbag, the airbag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating airbag must be kept clear. Do not (Continued)

Warning (Continued)

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. designed to inflate if the impact exceeds the specific airbag system's deployment threshold. Deployment thresholds are used to predict how severe a crash is likely to be in time

for the airbags to inflate and help restrain the occupants. The vehicle has electronic sensors that help the airbag system determine the severity of the impact. Deployment thresholds can vary with specific vehicle design.

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

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

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

The vehicle also has a seat position sensor that enables the sensing system to monitor the position of the front outboard passenger seat. The passenger seat position sensor and the passenger seat belt buckle provide information that is used to determine if the passenger knee airbag should inflate.

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

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

In any particular crash, no one can say whether an airbag should have inflated simply because of the vehicle damage or 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? \Rightarrow 76.

How Does an Airbag Restrain?

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

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

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

But airbags would not help in many types of collisions, primarily because the occupant's motion is not toward those airbags. See When Should an Airbag Inflate? \Rightarrow 77.

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

What Will You See after an Airbag Inflates?

After frontal, knee, and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realise the airbags 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? \Rightarrow 76.

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

Marning

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

Use caution if you should attempt to restart the engine after a crash has occurred. In many crashes severe enough to inflate the airbag, windscreens are broken by vehicle deformation. Additional windscreen breakage may also occur from the front outboard passenger airbag.

- Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for the airbag system. If you do not get them, the airbag system will not be there to help protect you in another crash. A new system will include airbag modules and possibly other parts. The service manual for the vehicle covers the need to replace other parts.
- Let only qualified technicians work on the airbag systems.
 Improper service can mean that an airbag system will not work properly. See your dealer for service.

Passenger Sensing System

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



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

⇒ 126.

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

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

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

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

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

⚠ Warning

A child in a rear-facing child restraint can be seriously injured or killed if the passenger frontal airbag (Continued)

Warning (Continued)

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

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

Never put a rear-facing child restraint in the front seat, even if the airbag is off. If securing a forward-facing child restraint in the front outboard passenger seat, always move the seat as far back as it will go. It is better to secure child restraints in the rear seat. Consider

Warning (Continued)

using another vehicle to transport the child when a rear seat is not available.

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

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

When the passenger sensing system has turned off the front outboard passenger frontal airbag and knee airbag, the off indicator will light and stay lit as a reminder that the airbags are off. See *Passenger Airbag Status Indicator*

⇒ 126.

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

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

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

⚠ Warning

If the airbag readiness light ever comes on and stays on, it means that something may be wrong with the airbag system. To help avoid injury to yourself or others, have the vehicle serviced right away. See *Airbag Readiness Light* ▷ 126 for more information, including important safety information.

If the On Indicator Is Lit for a Child Restraint

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

- 1. Turn the vehicle off.
- 2. Remove the child restraint from the vehicle.

- Remove any additional items from the seat such as blankets, cushions, seat covers, seat heaters, or seat massagers.
- 4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to Securing Child Restraints (With the Seat Belt in the Front Seat) ⇒ 101 or Securing Child Restraints (With the Seat Belt in the Rear Seat) ⇒ 99.
- 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* $\Leftrightarrow 54$

6. Restart the vehicle.

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

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



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

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

⚠ Warning

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

Additional Factors Affecting System Operation

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

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

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

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

frontal airbag and passenger knee airbag while a child restraint or child occupant is on the seat. If the passenger frontal airbag and passenger knee airbag are turned on, the on indicator will be lit.

If the passenger seat gets wet, dry the seat immediately. If the airbag readiness light is lit, do not install a child restraint or allow anyone to occupy the seat. See Airbag Readiness *Light* \$\dip 126\$ for important safety information.

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

⚠ Warning

Stowing articles under the passenger seat or between the passenger seat cushion and backrest 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 vellow connectors. They are probably part of the airbag system. Be sure to follow proper service procedures, and make sure the person performing work for you is qualified to do so.

Adding Equipment to the Airbag-Equipped Vehicle

Adding accessories that change the vehicle's frame, bumper system, height, front end, or side sheet metal may keep the airbag system from working properly.

The operation of the airbag system can also be affected by changing any parts of the front seats, seat belts, airbag sensing and diagnostic module, steering wheel, instrument panel, inner door seals including the speakers, any of the airbag modules, ceiling or pillar garnish trim, overhead console, front sensors, side impact sensors, 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 \Rightarrow 80.

If the vehicle has rollover roof-rail airbags, see *Different Size Tyres and Wheels* \rightleftharpoons 293 for additional important information.

If you have to modify your vehicle because you have a disability and have questions about whether the modifications will affect the vehicle's airbag system, or if you have questions about whether the airbag system will be affected if the vehicle is modified for any other reason, see your dealer.

Airbag System Check

The airbag system does not need regularly scheduled maintenance or replacement. Make sure the airbag readiness light is working. See *Airbag Readiness Light* ♀ 126.

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?* ⇔ 76. See your dealer for service.

Replacing Airbag System Parts after a Crash

⚠ Warning

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

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

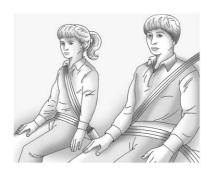
If the airbag readiness light stays on after the vehicle is started or comes on when you are driving, the airbag system may not work properly. Have the vehicle serviced right away. See Airbag Readiness Light \Rightarrow 126.

⚠ Warning

Safety procedures must be followed at all times when disposing of the vehicle or vehicle parts. Disposal should be performed only 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's seat belts.

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

- Sit all the way back on the seat.
 Do the knees bend at the seat edge? If yes, continue. If no, return to the booster seat.
- Fasten the lap-shoulder belt. Does
 the shoulder belt rest on the
 shoulder? If yes, continue. If not,
 try using the rear seat belt
 comfort guide, if available. See
 "Rear Seat Belt Comfort Guides"
 under Three-Point Belt

 69. If a
 comfort guide is not available, or if
 the shoulder belt still does not rest
 on the shoulder, then return to the
 booster seat.
- Does the lap belt fit low and snug on the hips, touching the thighs?
 If yes, continue. If no, return to the booster seat.
- Can proper seat belt fit be maintained for the length of the trip? If yes, continue. If no, return to the booster seat.
- Q: What is the proper way to wear seat belts?
- A: An older child should wear a lap-shoulder belt and get the additional restraint a shoulder belt

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

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

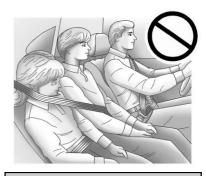
In a crash, children who are not buckled up can strike other people who are buckled up, or can be thrown out of the vehicle. Older children need to use seat belts properly.

⚠ Warning

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

Warning (Continued)

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



⚠ Warning

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

(Continued)

Warning (Continued)

crash, the child would not be restrained by the shoulder belt. The child could move too far forward increasing the chance of head and neck injury. The child might also slide under the lap belt. The belt force would then be applied right on the abdomen. That could cause serious or fatal injuries. The shoulder belt should go over the shoulder and across the chest.



Infants and Young Children

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

$oldsymbol{\triangle}$ Warning

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

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

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

Marning

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 or child should be secured in an appropriate restraint.



⚠ Warning

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



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

There are three basic types of child restraints:

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

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

For each type of child restraint, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle. The restraint manufacturer's instructions that come with the restraint state the weight and height limitations for a particular child restraint. In addition, there are many kinds of restraints available for children with special needs.

⚠ Warning

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

⚠ Warning

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

Child Restraint Systems



Rear-Facing Infant Restraint

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

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



Forward-Facing Child Restraint

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





Booster Seats

A belt-positioning booster seat is used for children who have outgrown their forward-facing child restraint. Boosters are designed to improve the fit of the vehicle's seat belt system until the child is large enough for the vehicle seat belts to fit properly without a booster seat. See the seat belt fit test in Older Children \$ 86.

Securing an Add-On Child Restraint in the Vehicle



🗥 Warning

A child can be seriously injured or killed in a crash if the child restraint is not properly secured in the vehicle. Secure the child restraint properly in the vehicle using the vehicle's seat belt or 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* ⇒ 99 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 it is not properly secured in the child restraint. Secure the child properly following the instructions that came with that child restraint.

Where to Put the Restraint

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

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

A 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.



EN: NEVER use a rearward-facing child restraint on a seat protected by an ACTIVE AIRBAG in front of it; DEATH or SERIOUS INJURY to the CHILD can occur.

FR: NE JAMAIS utiliser un siège d'enfant orienté vers l'arrière sur un siège protégé par un COUSSIN GONFLABLE ACTIF placé devant lui, sous peine d'infliger des BLESSURES GRAVES, voire MORTELLES à l'ENFANT

DE: Nach hinten gerichtete Kindersitze NIEMALS auf einem Sitz verwenden, der durch einen davor befindlichen AKTIVEN AIRBAG geschützt ist, da dies den TOD oder SCHWERE VERLETZUNGEN DES KINDES zur Folge haben kann. ES: NUNCA utilice un sistema de retención infantil orientado hacia atrás en un asiento protegido por un AIRBAG FRONTAL ACTIVO. Peligro de MUERTE o LESIONES GRAVES para el NIÑO.

SV: Använd ALDRIG en bakåtvänd barnstol på ett säte som skyddas med en framförvarande AKTIV AIRBAG. DÖDSFALL eller ALLVARLIGA SKADOR kan drabba BARNET.

IT: Non usare mai un sistema di sicurezza per bambini rivolto all'indietro su un sedile protetto da AIRBAG ATTIVO di fronte ad esso: pericolo di MORTE o LESIONI GRAVI per il BAMBINO!

NL: Gebruik NOOIT een achterwaarts gericht kinderzitje op een stoel met een ACTIEVE AIRBAG ervoor, om DODELIJK of ERNSTIG LETSEL van het KIND te voorkomen.

DA: Brug ALDRIG en bagudvendt autostol på et forsæde med AKTIV AIRBAG, BARNET kan komme i LIVSFARE eller komme ALVORLIGT TIL SKADE. CS: NIKDY nepoužívejte dětský zádržný systém instalovaný proti směru jízdy na sedadle, které je chráněno před sedadlem AKTIVNÍM AIRBAGEM. Mohlo by dojít k VÁŽNÉMU PORANĚNÍ nebo ÚMRTÍ DÍTĚTE.

RU: ЗАПРЕЩАЕТСЯ устанавливать детское удерживающее устройство лицом назад на сиденье автомобиля, оборудованном фронтальной подушкой безопасности, если ПОДУШКА НЕ ОТКЛЮЧЕНА! Это может привести к СМЕРТИ или СЕРЬЕЗНЫМ ТРАВМАМ РЕБЕНКА

FI: ÄLÄ KOSKAAN sijoita taaksepäin suunnattua lasten turvaistuinta istuimelle, jonka edessä on AKTIIVINEN TURVATYYNY, LAPSI VOI KUOLLA tai VAMMAUTUA VAKAVASTI.

NO: Bakovervendt barnesikringsutstyr må ALDRI brukes på et sete med AKTIV KOLLISJONSPUTE foran, da det kan føre til at BARNET utsettes for LIVSFARE og fare for ALVORLIGE SKADER. PT: NUNCA use um sistema de retenção para crianças voltado para trás num banco protegido com um AIRBAG ACTIVO na frente do mesmo, poderá ocorrer a PERDA DE VIDA ou FERIMENTOS GRAVES na CRIANÇA.

ΕΙ: ΠΟΤΕ μη χρησιμοποιείτε παιδικό κάθισμα ασφαλείας με φορά προς τα πίσω σε κάθισμα που προστατεύεται από μετωπικό ΕΝΕΡΓΟ ΑΕΡΟΣΑΚΟ, διότι το παιδί μπορεί να υποστεί ΘΑΝΑΣΙΜΟ ή ΣΟΒΑΡΟ ΤΡΑΥΜΑΤΙΣΜΟ.

PL: NIE WOLNO montować fotelika dziecięcego zwróconego tyłem do kierunku jazdy na fotelu, przed którym znajduje się WŁĄCZONA PODUSZKA POWIETRZNA.
Niezastosowanie się do tego zalecenia może być przyczyną ŚMIERCI lub POWAŻNYCH OBRAŻEŃ u DZIECKA.

TR: Arkaya bakan bir çocuk emniyet sistemini KESİNLİKLE önünde bir AKTİF HAVA YASTIĞI ile korunmakta olan bir koltukta kullanmayınız. ÇOCUK ÖLEBİLİR veya AĞIR ŞEKİLDE YARALANABİLİR.

UK: НІКОЛИ не використовуйте систему безпеки для дітей, що встановлюється обличчям назад, на сидінні з УВІМКНЕНОЮ ПОДУШКОЮ БЕЗПЕКИ, інакше це може призвести до СМЕРТІ чи СЕРЙОЗНОГО ТРАВМУВАННЯ ДИТИНИ.

HU: SOHA ne használjon hátrafelé néző biztonsági gyerekülést előlről AKTÍV LÉGZSÁKKAL védett ülésen, mert a GYERMEK HALÁLÁT vagy KOMOLY SÉRÜLÉSÉT okozhatja.

HR: NIKADA nemojte koristiti sustav zadržavanja za djecu okrenut prema natrag na sjedalu s AKTIVNIM ZRAČNIM JASTUKOM ispred njega, to bi moglo dovesti do SMRTI ili OZBILJNJIH OZLJEDA za DIJETE.

SL: NIKOLI ne nameščajte otroškega varnostnega sedeža, obrnjenega v nasprotni smeri vožnje, na sedež z AKTIVNO ČELNO ZRAČNO BLAZINO, saj pri tem obstaja nevarnost RESNIH ali SMRTNIH POŠKODB za OTROKA.

SR: NIKADA ne koristiti bezbednosni sistem za decu u kome su deca okrenuta unazad na sedištu sa AKTIVNIM VAZDUŠNIM JASTUKOM ispred sedišta zato što DETE može da NASTRADA ili da se TEŠKO POVREDI.

МК: НИКОГАШ не користете детско седиште свртено наназад на седиште заштитено со АКТИВНО ВОЗДУШНО ПЕРНИЧЕ пред него, затоа што детето може ДА ЗАГИНЕ или да биде ТЕШКО ПОВРЕДЕНО.

ВG: НИКОГА не използвайте детска седалка, гледаща назад, върху седалка, която е защитена чрез АКТИВНА ВЪЗДУШНА ВЪЗГЛАВНИЦА пред нея - може да се стигне до СМЪРТ или СЕРИОЗНО НАРАНЯВАНЕ на ДЕТЕТО.

RO: Nu utilizați NICIODATĂ un scaun pentru copil îndreptat spre partea din spate a mașinii pe un scaun protejat de un AIRBAG ACTIV în fața sa; acest lucru poate duce la DECESUL sau VĂTĂMAREA GRAVĂ a COPILULUI.

SK: NIKDY nepoužívajte detskú sedačku otočenú vzad na sedadle chránenom AKTÍVNYM AIRBAGOM, pretože môže dôjsť k SMRTI alebo VÁŽNYM ZRANENIAM DIEŤAŤA.

LT: JOKIU BŪDU nemontuokite atgal atgręžtos vaiko tvirtinimo sistemos sėdynėje, prieš kurią įrengta AKTYVI ORO PAGALVĖ, nes VAIKAS GALI ŽŪTI arba RIMTAI SUSIŽALOTI.

LV: NEKĀDĀ GADĪJUMĀ neizmantojiet uz aizmuguri vērstu bērnu sēdeklīti sēdvietā, kas tiek aizsargāta ar tās priekšā uzstādītu AKTĪVU DROŠĪBAS SPILVENU, jo pretējā gadījumā BĒRNS var gūt SMAGAS TRAUMAS vai IET BOJĀ.

ET: ÄRGE kasutage tahapoole suunatud lapseturvaistet istmel, mille ees on AKTIIVSE TURVAPADJAGA kaitstud iste, sest see võib põhjustada LAPSE SURMA või TÕSISE VIGASTUSE.

MT: QATT tuża trażżin ghat-tfal li jhares lejn in-naha ta' wara fuq sit protett b'AIRBAG ATTIV quddiemu; dan jista' jikkawż l-MEWT jew ĠIEĦ SERJI lit-TFAL.

GA: Ná húsáid srian sábháilteachta linbh cúil RIAMH ar shuíochán a bhfuil mála aeir ag feidhmiú os a chomhair.Tá baol BÁIS nó GORTÚ DONA don PHÁISTE ag baint leis.

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

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

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

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

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

ISOFIX Child Restraint Systems Installation Suitability

The following table shows permissible options for fitting an ISOFIX child restraint system with ISOFIX brackets.

Mass Group	Class Size	Fixture	Vehicle ISOFIX Positions				
			Front Passenger	Rear Left Passenger	Rear Centre Passenger	Rear Right Passenger	
Carrycot	F	ISO/L1	X	Х	X	X	
	G	ISO/L2	X	Х	X	X	
0 (up to 10 kg)	Е	ISO/R1	X	IUF	X	IUF	
0+ (up to 13 kg)	Е	ISO/R1	X	IUF	X	IUF	
	D	ISO/R2	X	IUF	X	IUF	
	С	ISO/R3	X	IUF	X	IUF	
I (9 to 18 kg)	D	ISO/R2	X	IUF	X	IUF	
	С	ISO/R3	X	IUF	X	IUF	
	В	ISO/F2	X	IUF	X	IUF	
	B1	ISO/F2X	X	IUF	X	IUF	
	A	ISO/F3	X	IUF	X	IUF	

TUF = Suitable for ISUFIX child restraint systems of universal category approved for use in the mass group.

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

ISOFIX Size Class and Seat Device:

- A ISO/F3: Forward-facing child restraint system for children of maximum size in the weight class 9 to 18 kg.
- **B ISO/F2**: Forward-facing child restraint system for smaller children in the weight class 9 to 18 kg.
- **B1 ISO/F2X**: Forward-facing child restraint system for smaller children in the weight class 9 to 18 kg.
- C ISO/R3: Rear-facing child restraint system for children of maximum size in the weight class up to 13 kg.
- **D ISO/R2**: Rear-facing child restraint system for smaller children in the weight class up to 13 kg.
- **E ISO/R1 :** Rear-facing child restraint system for young children in the weight class up to 13 kg.
- **F ISO/L1 :** Left side-facing position carrycot.
- **G ISO/L2 :** Right side-facing position carrycot.

Child Restraint Systems Installation Suitability

The following table shows permissible options for fastening a child restraint system with a lap-shoulder belt.

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

ISOFIX Child Restraint Systems



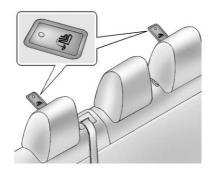
ISOFIX mounting brackets are marked by **2** on the seat back.

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

Specific vehicle ISOFIX child restraint system positions are marked in the "ISOFIX Child Restraint Systems Installation Suitability" table. See Where to Put the Restraint \$\to\$ 92.

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



Top-tether fastening eyes are marked with so 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 Installation Suitability" table by IUF. See *Where to Put the Restraint*

⇒ 92.

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

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

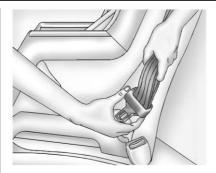
If the child restraint has the ISOFIX system, see *ISOFIX Child Restraint Systems ⇔ 99* for how and where to install the child restraint using ISOFIX. If a child restraint is secured in the vehicle using a seat belt and it uses a top tether, see *ISOFIX Child Restraint Systems ⇔ 99* for top tether anchor locations

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

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

If more than one child restraint needs to be installed in the rear seat, be sure to read *Where to Put the Restraint* ⇒ 92.

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

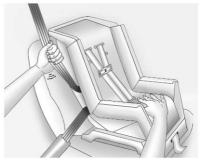


Tilt the latch plate to adjust the belt, if needed.



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

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



 Follow the instructions in the child restraint owner's manual to tighten and lock the child restraint using the vehicle seat belt.

- Before placing a child in the child restraint, make sure it is securely held in place. Push and pull the child restraint in different directions to be sure it is secure.

To remove the child restraint, follow the instructions in the child restraint owner's manual to unlock it. Unfasten the vehicle seat belt and let it return to the stowed position. If the top tether is attached to a top tether anchor, disconnect it.

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

This vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See Where to Put the Restraint \Rightarrow 92.

In addition, the vehicle has a passenger sensing system which is designed to turn off the front outboard passenger frontal airbag and knee airbag under certain conditions. See Passenger Sensing System ⇒ 80 and Passenger Airbag Status Indicator ⇒ 126 for more information, including important safety information.

⚠ Danger

NEVER use a rearward-facing child restraint on a seat protected by an ACTIVE AIRBAG in front of it; DEATH or SERIOUS INJURY to the CHILD can occur.

⚠ Danger

When using a child restraint system on the front passenger seat, the airbag systems for the front passenger seat must be deactivated; [Continued]

Danger (Continued)

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.



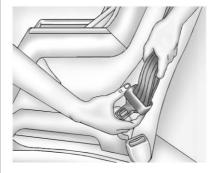
Do not secure a child seat in a position without a top tether anchor if a national or local law requires that the top tether be anchored, or if the instructions that come with the child restraint say that the top strap must be anchored.

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:

 Move the seat rearward as far back as it will go and raise the seat upward as far as it will go, before securing the forward-facing child restraint.

2. Put the child restraint on the seat.

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

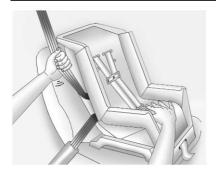


Tilt the latch plate to adjust the belt if needed.



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

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



- Follow the instructions in the child restraint owner's manual to tighten and lock the child restraint using the vehicle seat belt.
- 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 ⇒ 99.
- Before placing a child in the child restraint, make sure it is securely held in place. Refer to your child restraint manufacturer instructions.

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

If a child restraint has been installed and the on indicator is lit, see "If the On Indicator Is Lit for a Child Restraint" under *Passenger Sensing System* ⇒ 80.

To remove the child restraint, follow the instructions in the child restraint owner's manual to unlock it. Unfasten the vehicle seat belt and let it return to the stowed position. If the top tether is attached to a top tether anchor, disconnect it.

Pedestrian Protection System

Your vehicle is equipped with a pedestrian protection system which is designed to lift the bonnet when a pedestrian is detected during a frontal impact within the approximate speed range.

When the vehicle is involved in a frontal impact with an object or a pedestrian, sensors in the front bumper determine the force applied by the object to the front bumper.

When the frontal impact speed is approximately between 22 km/h (14 mph) and 50 km/h (31 mph), the pedestrian protection system lifts the bonnet to help reduce pedestrian head injuries. Lifting the bonnet creates more clearance between the bonnet and the hard components in the engine compartment.

In addition, the front bumper of the vehicle was designed to help reduce the injury to a pedestrian's legs.

Warning

After the bonnet has lifted, the bonnet hinge and latch area may be hot. Do not touch the pedestrian protection system components.

The pedestrian protection system is designed to lift the bonnet only once.

The pedestrian protection system may not activate under the following conditions:

- The pedestrian impact is outside the range of the sensors located on the front bumper.
- The sensors on the front bumper are damaged.
- The path of the lifting bonnet is blocked by snow or ice. Clear any ice or snow from the bonnet before driving.
- Winter fronts, grille covers, or other aftermarket equipment is attached to the bumper.

- Vehicle speed at impact is less than 22 km/h (14 mph) or greater than 50 km/h (31 mph).
- The vehicle impacts a small object.

For other frontal impacts or vehicle speeds, the airbags may also deploy. See Air-Bag System \$ 74.

After the pedestrian protection system has deployed, the bonnet will remain in the raised position and the driver's view may be reduced by the raised bonnet.

⚠ Warning

Do not drive the vehicle when the bonnet is raised.

Operating the vehicle with the bonnet raised can obstruct your view and may cause a collision resulting in damage to the vehicle, damage to other property, personal injury, or even death.

Caution

After the pedestrian protection system has deployed, see your dealer for service. The bonnet assembly including hinges, latch, and actuators must be replaced.

If towing service is not available, the bonnet may be repositioned temporarily. See "Temporary Bonnet Repair" following.

The SERVICE PEDESTRIAN PROTECTION SYSTEM message will appear when there is a problem with the pedestrian protection system. See your dealer for service immediately.

During a frontal impact involving a pedestrian, the vehicle may record information about the condition of the vehicle and how it was operated. See Vehicle Data Recording and Privacy \$ 336.

Temporary Bonnet Repair

If the bonnet is raised, the bonnet may be repositioned temporarily if a towing service is not available.



Before beginning the procedure, read all the instructions. Failure to read and follow the instructions could injure you or others and damage the vehicle.

⚠ Warning

After the bonnet has lifted, the bonnet hinge and latch area may be hot. Do not touch the pedestrian protection system components.

Allow the engine to cool before attempting any repair.

⚠ Warning

You or others could be injured when the bonnet is lowered or latched.

Be sure to keep fingers and other body parts away from the edge of the bonnet and wings.

For V-Series Models

- Unlatch the bonnet.
- Raise the bonnet.
- Push the latch/bracket down. Pull up to make sure the latch/ bracket is secure.
- Close the bonnet.
- Proceed with Steps 1–5 under "For Non V-Series Models."

For Non V-Series Models

1. Place both hands on top of the right corner of the bonnet near the windscreen and push the bonnet down quickly.

If the bonnet does not latch. push down again with slightly more force until the bonnet is latched securely.

- 2. Repeat the previous step to latch the left side of the bonnet.
- 3. Pull up on the rear corners of the bonnet to make sure the bonnet is latched securely and will not lift.

4. Pull up on the front of the bonnet to make sure the bonnet is latched securely and will not lift.



⚠ Warning

Do not drive the vehicle if the bonnet is not securely latched at both rear corners and the front latch.

Operating your vehicle without the bonnet securely latched can lead to a collision resulting in damage to your vehicle, damage to other property, personal injury, or even death.

Drive directly to a dealer for service. If you cannot go in for service immediately, have the vehicle towed.

> Some noise will occur when the vehicle is driven while the bonnet is temporarily repositioned.

If you do not have the system repaired, the pedestrian protection system will not be operable in the event of another crash or frontal impact involving a pedestrian. See your dealer for service immediately.



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.

Storage

Storage Compartments

Storage Compartments	
Instrument Panel Storage	107
Glove Box	107
Cupholders	108
Armrest Storage	108
Centre Console Storage	108

Additional Storage Features

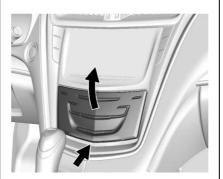
Cargo Tie-Downs	109
Convenience Net	109
Warning Triangle	109

Storage Compartments

riangle Warning

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

Instrument Panel Storage

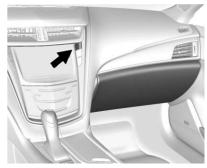


Touch the bottom of the climate control system panel until the door automatically starts to open. The storage area may contain a USB port. See the infotainment manual.

Keep the storage area door closed while driving.

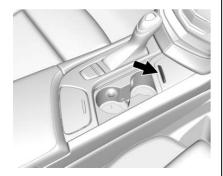
Touch the bottom of the climate control system again until the door automatically starts to close.

Glove Box



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

Cupholders



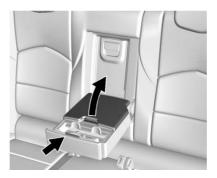
Cupholders in the front centre console have a power retractable cover. Push the handle forward to express open. Pull the handle rearward to express close.

The power cover will operate when the vehicle door is opened and the ignition is on or in ACC/ACCESSORY, or when Retained Accessory Power (RAP) is active. The cover can be opened or closed manually by pushing or pulling the handle. See *Retained Accessory Power (RAP)* ⇒ 193.

Power Retractable Cover Anti-Pinch Feature

If any object is in the path of the power cover when it is active, the cover will stop at the obstruction and auto-reverse to a preset position. The cover will return to normal operation after the obstruction is removed.

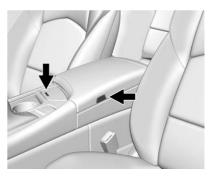
Armrest Storage



Pull the armrest down to access the rear seat storage area and cupholders.

Press the latch to open the storage area.

Centre Console Storage

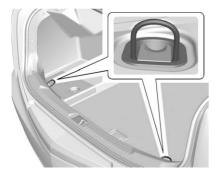


Press the button to access the storage area in front of the armrest cover.

Press the button on the driver side of the cover to access the storage area under the armrest. There are two USB ports, an SD card (if equipped), a power outlet, and an input jack inside.

Additional Storage Features

Cargo Tie-Downs



The cargo tie-downs can be used to secure small loads inside the boot.

Convenience Net

If equipped, the convenience net is in the rear. Put small loads behind the net. It can also be positioned into an envelope style to hold smaller items. The net is not for heavier loads. Store items as far forward as you can.

Warning Triangle

The warning triangle is stored in the load compartment.

Instruments and Controls

Controls

Steering wheel Adjustment 11
Steering Wheel Controls 11
Heated Steering Wheel
Horn112
Windscreen Wiper/Washer 112
Headlamp Washer 114
Clock 114
Power Sockets 114
Wireless Charging 110
Cigarette Lighter 118
Ashtrays 118

Warning Lights, Gauges, and Indicators Warning Lights, Gauges, and

warning Lights, Gauges, and
Indicators 118
Instrument Cluster 119
Speedometer
Mileometer 123
Trip Odometer 123
Rev Counter 123
Fuel Gauge 124
Boost Gauge (Performance
Configuration Only) 124

Engine Coolant Temperature
Gauge 125
Seat Belt Reminders 125
Airbag Readiness Light 126
Passenger Airbag Status
Indicator 126
Charging System Light 127
Malfunction Indicator Lamp
(Check Engine Light) 127
Brake System Warning Light 129
Electric Parking Brake Light 130
Service Electric Parking Brake
Light 130
Antilock Brake System (ABS)
Warning Light 130
Lane Keep Assist (LKA) Light 131
Vehicle Ahead Indicator 131
Traction Off Light 131
StabiliTrak OFF Light 132
Traction Control System (TCS)/
StabiliTrak Light 132
Engine Coolant Temperature
Warning Light 132
Driver Mode Control Light 133
Tyre Pressure Light
F Oil D Li-l-t 124
Engine Oil Pressure Light 134
Low Fuel Warning Light 134
Low Fuel Warning Light 134 Auto Stop Mode (Uplevel
Low Fuel Warning Light 134

High-Beam On Light Adaptive Forward Lighting (AFL)	135
Light	135
Rear Fog Lamp Light	135
Lamps On Reminder	
Cruise Control Light	
Door Ajar Light	
Information Displays	
Driver Information	
Centre (DIC)	136
Head-Up Display (HUD)	139
Vehicle Messages	
Vehicle Messages	142
Engine Power Messages	143
Vehicle Speed Messages	
Vehicle Personalisation	
Vehicle Personalisation	143

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.

Power Tilt and Telescoping Wheel



If equipped, the control is on the left side of the steering column.

- Push the control up or down to tilt the steering wheel up or down.
- Push the control forward or rearward to move the steering wheel toward the front or rear of the vehicle.

Do not adjust the steering wheel while driving.

To set the power tilt wheel memory position, see *Memory Seats* \Rightarrow 60.

Steering Wheel Controls

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

Heated Steering Wheel



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

The steering wheel takes about three minutes to be fully heated.

Auto Heated Steering Wheel

When enabled in vehicle personalization, this feature will automatically activate the heated steering wheel and heated seats, if equipped, at the level required by the interior temperature. The auto heated steering wheel can be turned off by using the heated steering wheel control button. See *Heated and Ventilated Front Seats* \$\displays 62

Remote Start Heated Steering Wheel

During a remote start, the heated steering wheel and heated seats, if equipped, can be turned on automatically. When it is cold outside, the heated steering wheel turns on. The heated steering wheel is canceled when the ignition is turned on. Press the heated steering wheel control button to enable use after the vehicle is started. The heated steering wheel indicator light may not turn on during a remote start. See *Remote Vehicle Start* ⇔ 33

Horn

Press on the steering wheel pad to sound the horn.

Windscreen Wiper/Washer



With the ignition on or in ACC/ ACCESSORY, move the windscreen wiper lever to select the wiper speed.

HI: Use for fast wipes.

LO: Use for slow wipes.



INT: Use this setting for intermittent wipes or for Rainsense wipes, when Rainsense is enabled. For intermittent wipes, move the lever up to INT, then turn the INT band up for more frequent wipes or down for less frequent wipes. If Rainsense is enabled, see "Rainsense" later in this section.

If the windshield wipers are in use for a while when driving, the exterior lamps come on automatically if the exterior lamp control is in AUTO. See "Wiper-Activated Headlamps" later in this section.

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. 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* ⇒ 260 for information on filling the windscreen washer fluid reservoir.



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* \$\dip 266.

Heavy snow or ice can overload the wiper motor. See *Electrical System Overload* \$\to\$ 271

Wiper Parking

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

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

Rainsense

If equipped, there is a sensor near the top center of the windshield detects the amount of water on the windshield and controls the frequency of the windshield wiper. To turn this feature on or off, see "Rain Sense Wipers" under *Vehicle Personalisation*

⇒ 143.

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

INT: When enabled, move the windscreen wiper stalk to INT. Turn the $\stackrel{\blacktriangleleft}{\widehat{\nabla}}$ INT band on the wiper stalk to adjust the sensitivity.



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

Wiper Arm Assembly Protection

If equipped with wiper arm assembly protection, when using an automatic car wash, move the windshield wiper lever to OFF. This disables the automatic Rainsense windscreen wipers.

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

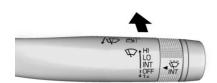
The wiper operations return to normal when the transmission is no longer in N (Neutral) or the vehicle speed has increased.

Wiper-Activated Headlamps

This feature activates the headlamps and parking lamps after the windshield wipers have been in use for a while. The transition time for the lamps coming on varies based on the wiper speed. For this feature to work, the exterior lamp control must be in AUTO.

The wiper-activated headlamps immediately turn off when the ignition is turned to off, or the windshield wiper control is turned off.

Rear Camera Mirror Washer



If equipped, push the windshield wiper lever forward to spray washer fluid on the Rear Camera Mirror. The lever returns to its starting position when released. See *Rear Camera Mirror* \Rightarrow 46.

Headlamp Washer

The headlamp washers are on 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 washers will spray again after five windscreen wash cycles.

To refill the windscreen washer fluid, see *Washer Fluid* \Rightarrow 260.

Clock

The time and date for the clock can be set using the infotainment system. See "Time/Date" in "System" under "Settings" in the infotainment manual.

Power Sockets

Power Outlets 12-Volt Direct Current

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

The vehicle has three 12-volt accessory power outlets on the centre console:

- Inside the centre console storage in front of the armrest cover.
- Inside the storage area under the armrest cover.
- Inside the storage area on the rear of the centre console, if equipped.

These outlets are powered while the ignition is on or in ACC/ACCESSORY, or until the driver door is opened within 10 minutes of turning off the vehicle

Lift the cover to access the accessory power outlet.

Certain electrical accessories may not be compatible with the accessory power outlet and could overload a vehicle circuit breaker or adapter fuse. If overloaded, the circuit breaker will reset after all devices are disconnected or if Retained Accessory Power (RAP) is turned off and then back on. See Retained Accessory Power (RAP) \Rightarrow 193. Wait one minute to allow the circuit breaker to reset before reconnecting devices or turning RAP back on. If the problem continues, the issue could be within your device. Try another known good device to make sure the circuit breaker is operating properly. If this does not resolve your problem, see your dealer.

It is possible to replace the factory power outlet with a cigar lighter receptacle, if desired. This requires the factory installed circuit breaker to be replaced with a standard minifuse by the dealer. A minifuse will not reset and will have to be replace if blown.

Caution

Failure to replace the circuit breaker with the minifuse could overheat the cigar lighter and damage the vehicle.

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

When adding electrical equipment, ensure that you follow the proper installation instructions included with the equipment. See *Add-On Electrical Equipment* ♀ 244.

Caution

Adding any electrical equipment to the vehicle may damage it or keep other components from working as they should. The repairs would not be covered by the vehicle warranty. Do not use equipment exceeding maximum amperage rating of

(Continued)

Caution (Continued)

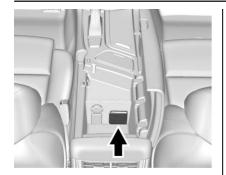
15 amperes. Check with your retailer before adding electrical equipment.

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.

Power Socket 220/230 Volt Alternating Current

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



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

The indicator light does not come on when the ignition is off or if the equipment is not fully seated into the outlet.

If equipment is connected using more than 150 watts or a system fault is detected, a protection circuit shuts off the power supply and the indicator light turns off. To reset the circuit, unplug the item and plug it back in or turn the Retained Accessory Power

(RAP) off and then back on. See Retained Accessory Power (RAP) \Rightarrow 193. The power restarts when equipment using 150 watts or less is plugged into the outlet and a system fault is not detected.

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

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

Wireless Charging

The vehicle has wireless charging in the storage behind the climate control system. See Instrument Panel Storage \Rightarrow 107. The system operates at 145 kHz and wirelessly charges one PMA or Qi compatible mobile device. The

power output of the system is capable of charging at a rate up to 1 amp (5W), as requested by the compatible mobile device. To check for phone or other device compatibility, see your retailer for details.



Warning

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

The vehicle must be on, in ACC/ ACCESSORY, or Retained Accessory Power (RAP) must be active. The wireless charging feature may not correctly indicate charging when the vehicle is in RAP. See Retained Accessory Power (RAP) \Rightarrow 193.

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

⚠ Warning

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



To charge a mobile device:

1. Open the climate control system panel.

- Remove all objects from the charging pad. The system may not charge if there are any objects between the phone and charging pad.
- Place the mobile device face up on the symbol on the charging pad.
- 4. The will appear on the on the infotainment display. This indicates that the mobile device is properly positioned and charging. If a mobile device is placed on the charging pad and does not display, remove the mobile device from the pad, turn it 180 degrees, and wait three seconds before placing/aligning the mobile device on the pad again.

Keep the storage door closed while driving.

Cigarette Lighter

There may be a cigarette lighter inside the front storage area near the gear lever and inside the storage area on the rear of the centre console.

To activate the cigarette lighter, push it in and release. The lighter pops out when it is ready to be used.

Caution

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

Ashtrays

There is a removable ashtray inside the front storage area near the gear lever and inside the storage area on the rear of the centre console. Press the door to release the ashtray.

To empty the ashtray, remove it from the storage area by holding the edges and pulling straight out. To reinstall, push the tray back into place.

Caution

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

Warning Lights, Gauges, and Indicators

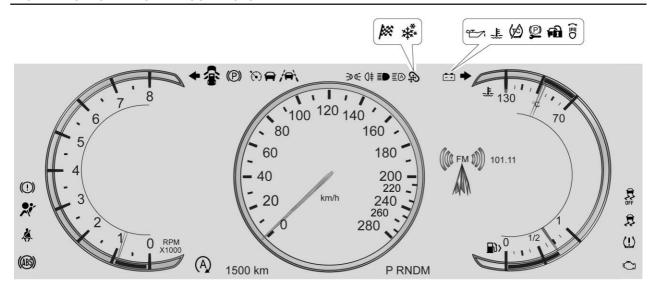
Warning lights and gauges can signal that something is wrong before it becomes serious enough to cause an expensive repair or replacement. Paying attention to the warning lights and gauges could prevent injury.

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

Instrument Cluster



Base Level with Auto Stop



Uplevel, Balanced Configuration

Reconfigurable Instrument Cluster

The uplevel cluster display layout can be changed.



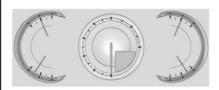
Balanced Configuration

The Balanced configuration has three interactive display zones: one in the centre of each of the gauges.



Enhanced Configuration

The Enhanced configuration has three interactive display zones.



Performance Configuration (CTS-V Series and V-Sport Only)

The Performance configuration has two interactive display zones.

Use the five-way control on the right side of the steering wheel to move between the different display zones and scroll through the different displays.

To change the cluster configuration:

- Find the Options page in one of the interactive display zones on the cluster.
- 2. Press SEL to enter the Options menu.
- Scroll down to highlight Display Layout. Then press SEL to select it.
- Each layout in the menu is represented by a small preview image of the display layout.
 Scroll up or down and highlight the selection. Press SEL to select the desired cluster configuration.
- Exit the Display Layout menu by pressing <.

Cluster Application Displays

The cluster can display information regarding Navigation, Audio, and Phone. On the base cluster, a speedometer can also be displayed in the centre zone.

Navigation

If there is no active route, a compass will be displayed. If there is an active route, press SEL to end route guidance (if equipped) or turn the voice prompts (if equipped) on or off.

Audio

While the Audio application page is displayed, press SEL to enter the Audio menu. In the Audio menu, search for music, select from favourites, or change the audio source.

Phone

While the Phone application page is displayed, press SEL to enter the Phone menu. In the Phone menu, if there is no active phone call, view recent calls, select from favourites, or scroll through contacts. If there is an active call, mute the phone or switch to handset operation.

Cluster Options Menu

To enter the cluster Options menu:

- Use the five-way control on the right side of the steering wheel to find the Options page in one of the interactive display zones on the cluster.
- Press SEL on the centre of the five-way control to enter the Options menu.

Units: Press SEL while Units is highlighted to enter the Unit menu. Choose English, Imperial, or metric units by pressing SEL while the desired item is highlighted.

A checkmark will be displayed next to the selected item.

Info Pages: Press SEL while Info Pages is highlighted to select the items to be displayed in the DIC info displays. See *Driver Information Centre* (DIC) ⇒ 136.

Display Layout : Press SEL while Display Layout is highlighted to change the configuration of the

uplevel cluster. See "Reconfigurable Instrument Cluster" earlier in this section.

Head-up Display (HUD) Rotation:
This feature allows for adjusting the angle of the HUD image. Press SEL on the steering wheel controls while Head-up Display Rotation is highlighted to enter Adjust Mode.
Press ∧ or ∨ to adjust the angle of the HUD display. Press < or > to highlight OK, then press SEL to save the setting. Cancel can also be selected to cancel the setting. The vehicle must be in P (Park).

Fav Button Options: Press SEL while Fav Button Options is highlighted to select between FAV Primary and SEEK Primary. This selection allows for configuration of the \triangle and \bigvee steering wheel controls. When FAV Primary is selected, pressing \triangle and \bigvee will go to the next or previous favourite and pressing and holding \triangle and \bigvee will seek. When SEEK Primary is selected, pressing \triangle and \bigvee will

seek and pressing and holding $\overline{\Delta}$ and $\overline{\nabla}$ will go to the next or previous favourite.

Tyre Loading: Press SEL while Tyre Loading is highlighted to change the tyre loading setting. Choose Light (for comfort pressure up to three people), Eco (for Eco pressure up to three people), or Max (for full loading) by pressing SEL while the desired item is highlighted.

Open Source Software : Press SEL while Open Source Software is highlighted to display open source software information.

Speedometer

The speedometer shows the vehicle's speed in either 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)* \Rightarrow 136.

Rev Counter

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

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

When the engine is on, the tachometer will indicate the engine's revolutions per minute (rpm). The tachometer may vary by several

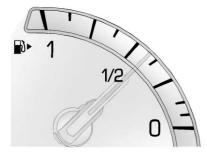
hundred rpm's, during Auto Stop mode, when the engine is shutting off and restarting.

A slight bump may be felt when the transmission is determining the most fuel efficient operating range.

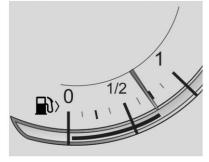
Caution

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



Base Level



Uplevel Balanced Configuration

When the ignition is on, the fuel gauge indicates about how much fuel is left in the tank.

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

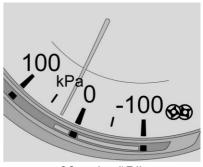
When the indicator nears empty, the low fuel light comes on. There still is a little fuel left, but the vehicle should be refuelled soon.

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

- At the service station, the fuel pump shuts off before the gauge reads full.
- It takes a little more or less fuel to fill up than the gauge indicated.
 For example, the gauge may have indicated the tank was half full, but it actually took a little more or less than half the tank's capacity to fill the tank.
- The gauge moves a little while turning a corner or speeding up.

 The gauge takes a few seconds to stabilise after the ignition is turned on and goes back to empty when the ignition is turned off.

Boost Gauge (Performance Configuration Only)



6.2 engine (LT4)

This gauge indicates boost under heavier throttle.

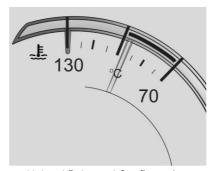
It displays the air pressure level in the intake manifold before it enters the engine's combustion chamber.

The gauge is automatically centred at zero every time the engine is started. Actual boost is displayed from this zero point. Changes in ambient pressure, such as driving in mountains and changing weather, will slightly change the zero reading.

Engine Coolant Temperature Gauge



Base Level



Uplevel Balanced Configuration

This gauge measures the engine coolant temperature.

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

Seat Belt Reminders Driver Seat Belt Reminder Light

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



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

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

Passenger Seat Belt Reminder Light

There is a passenger seat belt reminder light near the passenger airbag status indicator. See *Passenger Sensing System* \Rightarrow 80.



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

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

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

Airbag Readiness Light

This light shows if there is an electrical problem with the airbag system. The system check includes the airbag sensor(s), the passenger sensing system, the pretensioners, the airbag modules, the wiring, and the crash sensing and diagnostic module. For more information on the airbag system, see *Air-Bag System* ⋄ 74.



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

(Continued)

Warning (Continued)

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.

Passenger Airbag Status Indicator

The vehicle has a passenger sensing system. See *Passenger Sensing System* ⇒ 80 for important safety information. The passenger airbag status indicator is in the overhead console.



When the vehicle is started, the passenger airbag status indicator will light the symbol for on and off for several seconds as a system check. Then, after several more 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 and knee airbag.

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

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

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

Marning

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* ⇒ 126 for more information, including important safety information.

Charging System Light



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

a reconfigurable cluster, this light may not come on when the ignition is turned on.

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

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

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

Malfunction Indicator Lamp (Check Engine Light)

This light is part of the vehicle's emission control on-board diagnostic system. If this light is on while the engine is running, a malfunction has been detected and the vehicle may require service. The light should come on to show that it is working when the ignition is in Service Mode. See *Ignition Positions* ▷ 189.



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

Caution

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

Caution

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

⇒ 246.

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

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

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

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

Check the following:

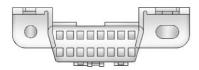
- If fuel has been added to the vehicle using the capless fuel funnel adapter, make sure that it has been removed. See "Filling the Tank with a Portable Gas Can" under Filling the Tank ⇒ 235. The diagnostic system can detect if the adapter has been left installed in the vehicle, allowing fuel to evaporate into the atmosphere. A few driving trips with the adapter removed may turn off the light.
- Poor fuel quality can cause inefficient engine operation and poor driveability, which may go

away once the engine is warmed up. If this occurs, change the fuel brand. It may require at least one full tank of the proper fuel to turn the light off. See *Fuel* \Rightarrow 234.

If the light remains on, see your retailer.

Emissions Inspection and Maintenance Programs

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



The DLC is under the instrument panel to the left of the steering wheel. Connecting devices that are not used to perform an Emissions Inspection/Maintenance test or to service the vehicle may affect vehicle operation. See *Add-On Electrical Equipment ♀ 244*. See your dealer if assistance is needed.

The vehicle may not pass inspection if:

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

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

Brake System Warning Light

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

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



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

If the light comes on and stays on, there is a brake problem.



The brake system might not be working properly if the brake system warning light is on. Driving (Continued)

Warning (Continued)

with the brake system warning light on can lead to a crash. If the light is still on after the vehicle has been pulled off the road and carefully stopped, have the vehicle towed for service.

Electric Parking Brake Light



The parking brake status light comes on when the parking brake is applied. If the light continues flashing after the parking brake is released, or while driving, there is a problem with the electric parking brake system. A message may also display in the Driver Information Centre (DIC).

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

Service Electric Parking Brake Light



On some vehicles the service electric parking brake light should come on briefly when the vehicle is started. If it does not come on, have it fixed so it will be ready to warn if there is a problem. For vehicles with the reconfigurable cluster, this light may not come on when the vehicle is started.

If this light stays on, the vehicle should be taken to a retailer as soon as possible. See *Electric Parking Brake* ⇒ 200. A message may also display in the Driver Information Centre (DIC).

Antilock Brake System (ABS) Warning Light



This light comes on briefly when the engine is started.

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

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

If the ABS light is the only light on, the vehicle has regular brakes, but the 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 \$\dip\$ 129.

Lane Keep Assist (LKA) Light



For some vehicles, this light comes on briefly while starting the vehicle. If it does not come on, have the vehicle serviced.

For vehicles with the uplevel cluster, this light may not come on when starting the vehicle.

This light is green if LKA is available to assist.

LKA may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking without using the indicator in that direction. The LKA light will turn amber.

This light is amber and flashes as a Lane Departure Warning (LDW) alert, to indicate that the lane marking has been crossed.

See Lane Keep Assist (LKA) \Rightarrow 232.

Vehicle Ahead Indicator



If equipped, this indicator will display green when a vehicle is detected ahead and amber when you are following a vehicle ahead much too closely.

Traction Off Light



This light comes on briefly while starting the engine. If it does not, have the vehicle serviced by your dealer. If the system is working normally, the indicator light then turns off. For vehicles with a reconfigurable cluster, this light is in the display area and it may not come on when the ignition is turned on.

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

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

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

See Traction Control/Electronic Stability Control \Rightarrow 202.

StabiliTrak OFF Light



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

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

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

See Traction Control/Electronic Stability Control \Rightarrow 202.

Traction Control System (TCS)/StabiliTrak Light



This light comes on briefly when the engine is started.

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

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

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

Engine Coolant Temperature Warning Light



On some vehicles this light comes on briefly while starting the vehicle. If it does not, have the vehicle serviced by the dealer. If the system is working normally the indicator light goes off. For vehicles with the reconfigurable cluster, this light may not come on when starting the vehicle.

Caution

The engine coolant temperature warning light indicates that the vehicle has overheated. Driving with this light on can damage the engine [Continued]

Caution (Continued)

and it may not be covered by the vehicle warranty. See *Engine Overheating* \Rightarrow 259.

The engine coolant temperature warning light comes on when the engine has overheated.

If this happens pull over and turn off the engine as soon as possible. See *Engine Overheating ⇔ 259*.

Driver Mode Control Light



This light comes on when Sport Mode is selected.



This light comes on when Snow/Ice Mode is selected.



This light comes on when Track Mode is selected. See *Driver Mode Control* ⇒ 203.

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. Stop as soon as possible, and inflate the tyres to the pressure value shown on the Tyre and Loading Information label. See *Tyre Pressure* \$\dip 283\$.

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* ♀ 286.

Engine Oil Pressure Light

Caution

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



This light should come on briefly as the engine is started. If it does not come on, have the vehicle serviced by your dealer. If the light comes on and stays on, it means that oil is not flowing through the engine properly. The vehicle could be low on oil and might have some other system problem. See your dealer.

Low Fuel Warning Light



This light is near the fuel gauge and comes on briefly when the ignition is turned on as a check to show it is working. For vehicles with a reconfigurable cluster, this light is in the display area and may not come on when the ignition is turned on.

It also comes on when the fuel tank is low on fuel. The light turns off when fuel is added. If it does not, have the vehicle serviced.

Auto Stop Mode (Uplevel Cluster)



This light comes on when the engine is in an Auto Stop.

Security Light



On some vehicles 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.

For vehicles with the reconfigurable cluster, this light may not come on when the engine is started.

If the light stays on and the engine does not start, there could be a problem with the theft-deterrent system. See *Immobiliser Operation* $\Rightarrow 43$.

High-Beam On Light



This light comes on when the high-beam headlamps are in use. See *Headlamp Main/Dipped-Beam Changer*

⇒ 151.

IntelliBeam Light



This light comes on when the IntelliBeam system, if equipped, is enabled. See *Exterior Lamp Controls* ⇒ 149.

Adaptive Forward Lighting (AFL) Light



This light should come on briefly as the vehicle is started. If it does not come on, have the vehicle serviced by your dealer. For vehicles with a reconfigurable cluster, this light is in the display area and may not come on when the ignition is turned on. This light comes on solid when there is a problem with the AFL system. It flashes when the system is switching between lighting modes. See *Adaptive Forward Lighting (AFL)* \Rightarrow 152.

Rear Fog Lamp Light



This light comes on when the rear fog lamps are in use.

Lamps On Reminder



This light comes on when the exterior lamps are in use. See *Exterior Lamp Controls* \Rightarrow 149.

Cruise Control Light



The cruise control light is white when the cruise control is on and ready, and turns green when the cruise control is set and active.

See Cruise Control \$\dip 209.

Adaptive Cruise Control Light



This light is white when the Adaptive Cruise Control (ACC, if equipped) is on and ready, and turns green when the ACC is set and active. See *Adaptive Cruise Control* ⇒ 212.

Door Ajar Light



For vehicles equipped with this light, it comes on when a door is open or not securely latched. Before driving, check that all doors are properly closed.

Information Displays

Driver Information Centre (DIC)

The DIC displays are shown in the left and right interactive display zones on the instrument cluster. The displays show the status of many vehicle systems. The controls for the DIC are on the right steering wheel control.



 \wedge or \vee : Press to move up or down in a list.

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

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

DIC Information Display Options

The information displays on the DIC can be turned on or off through the Options menu.

- Press SEL while viewing the Options page in the centre display zone on the cluster.
- 2. Scroll to Info Pages and press SEL.
- Press ∧ or ∨ to move through the list of possible information displays.
- Press SEL while an item is highlighted to select or deselect that item. When an item is selected, a checkmark will appear next to it.

DIC Information Displays

The following is the list of all possible DIC information displays. Some of the information displays may not be available for your particular vehicle.

Speed : Shows the vehicle speed in either kilometres per hour (km/h) or miles per hour (mph).

Trip 1 and Trip 2 (Base Cluster) / Trip 1 or Trip 2 and Average Fuel Economy (Uplevel Cluster): Shows the current distance travelled, in either kilometres (km) or miles (mi), since the trip odometer was last reset. The trip odometer can be reset by pressing and holding SEL while this display is active.

The average fuel economy 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 economy that the vehicle has right now, and will change as driving conditions

change. The Average Fuel Economy can be reset along with the trip odometer by pressing and holding SEL while this display is active.

Fuel Range: Shows the approximate distance the vehicle can be driven without refuelling. LOW will be displayed when the vehicle is low on fuel. The fuel range estimate is based on an average of the vehicle's fuel economy over recent driving history and the amount of fuel remaining in the fuel tank.

Average Fuel Economy (Base Cluster): 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 economy that the vehicle has right now, and will change as driving conditions change. The Average Fuel Economy can be reset by pressing and holding SEL while this display is active.

Instantaneous Fuel Economy: Shows the current fuel economy in either litres per 100 kilometers (L/100 km) or miles per gallon (mpg). This number reflects only the approximate fuel economy that the vehicle has right now and changes frequently as driving conditions change.

Average Speed: Shows the average speed of the vehicle in 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 and holding SEL while this display is active.

Timer: This display can be used as a timer. To start the timer, press SEL while this display is active. The display will show the amount of time that has passed since the timer was last reset. To stop the timer, press SEL briefly while this display is active and the timer is running. To reset the timer to zero, press and hold SEL while this display is active.

Compass (Base Cluster) : Shows the direction the vehicle is driving.

Turn Arrow: Shows the next manoeuvre when using route guidance.

Estimated Time to Arrival : Shows the estimated time until arrival at your destination.

Distance to Destination : Shows the distance to the destination when using route guidance.

Traffic Sign Memory: Shows road sign information. This page can be reset by pressing and holding SEL while viewing this page. Traffic sign alerts can be turned on or off by pressing SEL while viewing this page to enter the Traffic Sign Memory menu.

Speed Warning: Allows the driver to set a speed that they do not want to exceed. To set the Speed Warning, press SEL when Speed Warning is displayed. Press ∧ or ∨ to adjust the value. This feature can be turned off by pressing and holding SEL while viewing this page. If the selected speed limit is exceeded, a pop-up warning is displayed and a chime may sound.

Best Fuel Economy: Displays average fuel economy, the best fuel economy over the selected distance, and a bar graph showing instantaneous fuel economy.

Cruise Set Speed : Shows the speed the cruise control or Adaptive Cruise Control (ACC, if equipped) is set to.

Battery Voltage : Shows the current battery voltage.

Engine Boost : Shows the current amount of boost being added.

Oil Life: Shows an estimate of the oil's remaining useful life. If REMAINING OIL LIFE 99% is displayed, that means 99% of the current oil life remains.

When the remaining oil life is low, the CHANGE ENGINE OIL SOON message will appear on the display. The oil should be changed as soon as possible. See *Engine Oil* ♀ 251. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended in the Maintenance Schedule. See *Scheduled Maintenance* ♀ 319.

The Oil Life display must be reset after each oil change. It will not reset itself. Do not to reset the Oil Life display accidentally at any time other than when the oil has just been changed. It cannot be reset accurately until the next oil change. To reset the engine oil life system, press and hold SEL for several seconds while the Oil Life display is active. See Engine Oil Life System \$\price 253.

Tyre Pressure: Shows the approximate pressures of all four tyres. Tyre pressure is displayed in either kilopascal (kPa) or in pounds per square inch (psi). If the pressure is low, the value for that tyre is shown in amber.

See Tyre Pressure Monitor System ⇒ 285 and Ture Pressure Monitor *Operation* \Rightarrow 286.

Vehicle Odometer (Base Cluster): Shows the odometer.

Blank Page: The Blank Page display allows for no information to be displayed in the DIC display zone(s).

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 vour field of view.

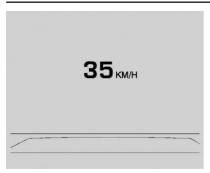
If equipped with HUD, some information concerning the operation of the vehicle is projected onto the windscreen. The image is projected through the HUD lens on top of the instrument panel. The information appears as an image focused out toward the front of the vehicle.

Caution

If you try to use the HUD image as a parking aid, you may misjudge the distance and damage your vehicle. Do not use the HUD image as a parking aid.

The HUD information can be displayed in various languages in some vehicles. The speedometer reading and other numerical values can be displayed in either English or metric units.

The language selection is changed through the radio and the units of measurement is changed through the instrument cluster. See Vehicle Settings Menu" under Instrument Cluster \$ 119



HUD Display on the Vehicle Windscreen

The HUD may display some of the following vehicle information and vehicle messages or alerts, if equipped:

- Speed
- Rev Counter
- Audio
- Phone
- Navigation
- Collision Alert
- Vehicle Ahead
- Cruise Control

- Adaptive Cruise Control
- Lane Keep Assist
- Low Fuel
- Shift Lights (CTS-V only)

Some vehicle messages or alerts displayed in the HUD may be cleared by using the steering wheel controls. See *Vehicle Messages* ⇔ 142.



The HUD control is to the left of the steering wheel.

To adjust the HUD image:

- 1. Adjust the driver seat.
- 2. Start the engine.
- 3. Use the following settings to adjust the HUD.

: Press down or lift up to centre the HUD image. The HUD image can only be adjusted up and down, not side to side.

INFO: Press to select the display view. Each press will change the display view.

±♥: Lift up and hold to brighten the display. Press down and hold to dim the display. Hold down to turn the display off.

The HUD image will automatically dim and brighten to compensate for outside lighting. The HUD brightness control can also be adjusted as needed.

The HUD image can temporarily light up depending on the angle and position of the sunlight on the HUD display. This is normal.

Polarised sunglasses could make the HUD image harder to see.

Head-Up Display (HUD) Rotation Option

This feature allows for adjusting the angle of the HUD image.

Press SEL on the steering wheel controls to enter the Options menu, then press SEL when Head-up Display Rotation is highlighted to enter Adjust Mode.

Press ∧ or ∨ to adjust the angle of the HUD display. Press ≤ or > to highlight OK, then press SEL to save the setting. CANCEL can also be selected to cancel the setting. The vehicle must be in P (Park). See Instrument Cluster ⇒ 119.

HUD Views

There are four views in the HUD. Some vehicle information and vehicle messages or alerts may be displayed in any view.



Speed View: This display gives the speedometer reading (in English or metric units), speed limit, Adaptive

Cruise Control speed, Lane Departure Warning, and Vehicle Ahead indicator. Some information only appears on vehicles that have these features, and when they are active.



Audio/Phone View: This displays the speed view along with audio/phone information. The current radio station, media type, and incoming calls will be displayed when active on vehicles equipped with these features.

All HUD views may briefly display audio information when the driver uses the steering wheel controls to adjust the audio settings appearing in the instrument cluster.

Incoming phone calls appearing in the instrument cluster, may also display in any HUD view.



Navigation View: This display includes the information in the speed view along with Turn-by-Turn Navigation information in some vehicles. The compass heading is displayed when navigation routing is not active.

Navigation Turn-by-Turn Alerts shown in the instrument cluster may also be displayed in any HUD view.



Performance View: This displays the speedometer reading, rpm reading, transmission positions, Shift Timing Light Position (CTS-V only) and gear shift indicator.

If equipped, the shift timing lights at the top of the display will appear with increases in engine rpm. The rows of lights get closer together as the shift point gets closer. Shift the transmission before the lights come together in the display. Shift immediately if the lights are flashing. See *Manual Mode* \$\pi\$ 198.

Care of the HUD

Clean the inside of the windscreen to remove any dirt or film that could reduce the sharpness or clarity of the HUD image.

Clean the HUD lens with a soft cloth sprayed with glass cleaner. Wipe the lens gently, then dry it.

HUD Troubleshooting

Check that:

- Nothing is covering the HUD lens.
- HUD brightness setting is not too dim or too bright.
- HUD is adjusted to the proper height.
- Polarised sunglasses are not worn.
- Windscreen and HUD lens are clean.

If the HUD image is not correct, contact your dealer.

The windscreen is part of the HUD system. If the windscreen needs replacing, see *Windshield Replacement*

⇒ 267.

Vehicle Messages

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

The messages that do not require immediate action can be acknowledged and cleared by pressing ✓. The messages that require immediate action cannot be cleared until that action is performed.

All messages should be taken seriously; clearing the message does not correct the problem.

If a SERVICE message appears, see your retailer.

Follow the instructions given in the messages. The system displays messages regarding the following topics:

- Service Messages
- Fluid Levels
- Vehicle Security
- Brakes

- Ride Control Systems
- Driver Assistance Systems
- Cruise Control
- Lighting and Bulb Replacement
- Wiper/Washer Systems
- Doors and Windows
- Seat Belts
- Airbag Systems
- Engine and Transmission
- Tyre Pressure
- Battery

Engine Power Messages ENGINE POWER IS REDUCED

This message displays when the vehicle's propulsion power is reduced. Reduced propulsion power can affect the vehicle's ability to accelerate. If this message is on, but there is no observed reduction in performance, proceed to your destination. The performance may be reduced the next time the vehicle is driven. The vehicle may be driven while this message is

on, but maximum acceleration and speed may be reduced. Anytime this message stays on, or displays repeatedly, the vehicle should be taken to your dealer for service as soon as possible.

Vehicle Speed Messages SPEED LIMITED TO XXX KM/H (MPH)

This message shows that the vehicle speed has been limited to the speed displayed. The limited speed is a protection for various propulsion and vehicle systems, such as lubrication, thermal, suspension, Teen Driver if equipped, or tyres.

Vehicle Personalisation

The following are all possible vehicle personalization features. Depending on the vehicle, some may not be available.

For System, Apps, and Personal features and functions, see "Settings" in the infotainment manual.

To access the vehicle personalization menu:

- Touch the Settings icon on the Home Page of the infotainment display.
- 2. Touch Vehicle to display a list of available options.
- 3. Touch to select the desired feature setting.
- 4. Touch O or to turn a feature off or on.
- 5. Touch X to go to the top level of the Settings menu.

The menu may contain the following:

Rear Seat Reminder

This allows for a chime and a message when the rear door has been opened before or during the operation of the vehicle.

Touch Off or On.

Driving Mode

These settings will overwrite the main Vehicle Mode selections made with the MODE switch on the console.

Touch and the following may display:

- Engine Sound Management
- Steering
- Suspension

Engine Sound Management

This setting adjusts the sound of the engine exhaust from a quiet to a loud exhaust volume.

Touch Auto (Follows the MODE switch), Tour, Sport, or Track.

Steering

This setting adjusts how the steering feels from a lighter to a reduced assist for more steering feel.

Touch Auto (Follows the MODE switch), Tour, Sport, or Track.

Suspension

This setting adjusts the suspension from a comfortable to a more responsive tune.

Touch Auto (Follows the MODE switch), Tour, Sport, or Track.

Climate and Air Quality

Touch and the following may display:

- Auto Fan Speed
- Air Quality Sensor
- Auto Cooled Seats
- Auto Heated Seats
- Auto Defog
- Auto Rear Defog

Auto Fan Speed

This setting specifies the amount of airflow when the climate control fan setting is Auto Fan.

Touch Low, Medium, or High.

Air Quality Sensor

This setting switches the system into Recirculation Mode based on the quality of the outside air.

Touch Off, Low Sensitivity, or High Sensitivity.

Auto Cooled Seats

This setting automatically turns on and regulates the ventilated seats when the cabin temperature is warm. See *Heated and Ventilated Front Seats*

⇔ 62.

Touch Off or On.

Auto Heated Seats

This setting automatically turns on and regulates the heated seats when the cabin temperature is cool. The auto heated seats can be turned off by using the heated seat buttons on the centre console. See *Heated and Ventilated Front Seats* \Rightarrow 62.

If equipped with Auto Heated Steering Wheel, this feature will turn on when the Auto Heated Seats turn on.

Touch Off or On.

Auto Defog

This setting automatically turns the front defogger on when the engine is started.

Touch Off or On.

Auto Rear Defog

This setting automatically turns the rear defogger on when the engine is started.

Touch Off or On.

Collision / Detection Systems

Touch the Collision/Detection Systems menu and the following may display:

- Alert Type
- Forward Collision System
- Adaptive Cruise Go Notifier
- Lane Change Alert

Rear Cross Traffic Alert

Alert Type

This setting specifies the type of vehicle feedback provided, either a beep or seat vibration, when you are in danger of colliding with an object.

Touch Beeps or Safety Alert Seat.

Forward Collision System

This setting controls the vehicle response when detecting a vehicle ahead of you. The Off setting disables all FCA and FAB functions. With the Alert and Brake setting, both FCA and FAB are available. The Alert setting disables FAB. See *Forward Automatic Braking (FAB)* ⇒ 229.

Touch Off, Alert, or Alert and Brake.

Adaptive Cruise Go Notifier

This setting determines if an alert will appear when Adaptive Cruise Control brings the vehicle to a complete stop and the vehicle ahead of you starts moving again. See *Adaptive Cruise Control* ⇒ 212.

Touch Off or On.

Lane Change Alert

This setting specifies if an alert will display on the outside mirror to help you avoid crashing into a vehicle in your blind spot, or rapidly approaching your blind spot, during a lane change maneuver. See *Lane Change Alert (LCA)* ⇒ 230.

Touch Off or On.

Rear Cross Traffic Alert

This setting specifies if an alert will display when the vehicle detects approaching rear cross traffic when in R (Reverse). See Assistance Systems for Parking or Reversing ⇒ 221.

Touch Off or On.

Comfort and Convenience

Touch and the following may display:

- Auto Memory Recall
- Easy Exit Options
- Chime Volume
- Reverse Tilt Mirror
- Auto Mirror Folding
- Rain Sense Wipers

Auto Memory Recall

This feature automatically recalls the current driver's previously stored 1 or 2 button positions when the ignition is changed from off to on or ACC/ ACCESSORY. See *Memory Seats* ⇔ 60.

Touch Off or On.

Easy Exit Options

This feature automatically recalls the previously stored exit button position when exiting the vehicle. See *Memory Seats* \Rightarrow 60.

Touch Off or On.

Chime Volume

This setting determines the chime volume level.

Touch the controls on the infotainment display to adjust the volume

Reverse Tilt Mirror

When on, both the driver and passenger, driver, or passenger outside mirrors will tilt downward when the vehicle is shifted to R (Reverse) to improve visibility of the ground near

Touch Off, On - Driver and Passenger, On - Driver, or On - Passenger.

Auto Mirror Folding

When on, the outside mirrors will automatically fold or unfold when the Remote Keyless Entry (RKE) transmitter or button is pressed

and held.
Touch Off or On.

Rain Sense Wipers

This setting automatically turns on the wipers when moisture is detected and the wiper switch is in intermittent mode.

Touch Disabled or Enabled.

Lighting

Touch and the following may display:

- Vehicle Locator Lights
- Exit Lighting

Vehicle Locator Lights

This setting flashes the vehicle's headlamps when is pressed on the Remote Keyless Entry (RKE) transmitter

Touch Off or On.

Exit Lighting

This setting specifies how long the headlamps stay on after the vehicle is turned off and exited.

Touch Off, 30 Seconds, 60 Seconds, or 120 Seconds.

Power Door Locks

Touch and the following may display:

- Open Door Anti Lock Out
- Auto Door Lock
- Delayed Door Lock

Open Door Anti Lock Out

This setting prevents the driver door from locking when the door is open. If this setting is on, the Delayed Door Lock menu will not be available.

Touch Off or On.

Auto Door Lock

This setting allows you to select which doors will automatically lock when the vehicle is shifted into P (Park).

Touch Off, All Doors, or Driver Door.

Delayed Door Lock

This setting delays the locking of the vehicle's doors.

Touch Off or On.

Remote Lock, Unlock, Start

Touch and the following may display:

- Remote Unlock Light Feedback
- Remote Lock Feedback
- Remote Door Unlock
- Remote Start Auto Cool Seats
- Remote Start Auto Heat Seats
- Remote Window Operation
- Passive Door Unlock
- Passive Door Lock
- Remote Left in Vehicle Alert

Remote Unlock Light Feedback

This setting flashes the exterior lamps when the vehicle is unlocked with the RKE transmitter.

Touch Off or Flash Lights.

Remote Lock Feedback

This setting specifies how the vehicle responds when the vehicle is locked with the RKE transmitter.

Touch Off, Lights and Horn, Lights Only, or Horn Only.

Remote Door Unlock

This setting specifies whether all doors, or just the driver door, unlock when pressing on the RKE transmitter.

Touch All Doors or Driver Door.

Remote Start Auto Cool Seats

This setting automatically turns on the ventilated seats when using the remote start function on warm days. See *Heated and Ventilated Front Seats* ⇔ 62 and *Remote Vehicle Start* ⇔ 33.

Touch Off or On.

Remote Start Auto Heat Seats

Touch Off or On.

Remote Window Operation

If equipped, this feature enables remote operation of the windows with the RKE transmitter. See *Remote Keyless Entry (RKE) System Operation* ⇒ 28.

Touch Off or On.

Passive Door Unlock

This setting specifies which doors unlock when using the button on the driver door handle to unlock the vehicle

Touch All Doors or Driver Door Only.

Passive Door Lock

This setting specifies if the vehicle will automatically lock, or lock and alert you after all the doors are closed, and Touch Off, On with Horn Chirp, or On.

Remote Left in Vehicle Alert

This feature sounds an alert when the RKE transmitter is left in the vehicle. This menu also enables Remote No Longer in Vehicle Alert.

Touch Off or On.

Valet Mode

This will lock the infotainment system and steering wheel controls. It may also limit access to vehicle storage locations, if equipped.

To enable valet mode:

- 1. Enter a four-digit code on the keypad.
- 2. Touch Enter to go to the confirmation screen.
- 3. Re-enter the four-digit code.

Touch Lock or Unlock to lock or unlock the system. Touch Back to go back to the previous menu.

Lighting

Exterior Lighting
Exterior Lamp Controls 149
Exterior Lamps Off Reminder 151
Headlamp Main/Dipped-Beam
Changer 151
Flash-to-Pass
Daytime Running
Lamps (DRL) 151
Automatic Headlamp System 152
Adaptive Forward
Lighting (AFL) 152
Hazard Warning Flashers 153
Indicator and Lane-Change
Signals 153
Rear Fog Lamps 153
nterior Lighting
Instrument Panel Illumination
Control 154
Courtesy Lamps 154
Dome Lamps
Reading Lamps
Reduing Lamps 134
ighting Features
Entry Lighting 155
Exit Lighting
Battery Load Management 155

Battery Power Protection	15
Exterior Lighting Battery	
Saver	15

Exterior Lighting

Exterior Lamp Controls



Turn the control to the following positions:

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

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

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

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

IntelliBeam[®] System

If equipped, this system turns the vehicle's main beam headlamps on and off according to surrounding traffic conditions.

The system turns the main beam headlamps on when it is dark enough and there is no other traffic present.



This light comes on in the instrument cluster when the IntelliBeam system is enabled

Turning On and Enabling IntelliBeam

To enable the IntelliBeam system, with the indicator lever in the neutral position, turn the exterior lamp control to AUTO. The blue main beam on light appears on the instrument cluster when the main beams are on.

Driving with IntelliBeam

The system only activates the main beams when driving over 40 km/h (25 mph).

There is a sensor near the top centre of the windscreen, which automatically controls the system. Keep this area of the windscreen clear of debris to allow for best system performance.

The main beam headlamps remain on, under the automatic control, until one of the following situations occurs:

- The system detects an approaching vehicle's headlamps.
- The system detects a preceding vehicle's tail lamps.
- The outside light is bright enough that main beam headlamps are not required.
- The vehicle's speed drops below 20 km/h (12 mph).

• The Intellibeam system is disabled by the high/low-beam changer or the flash-to-pass feature. If this happens, the high/low-beam changer must be activated two times within two seconds to reactivate the Intellibeam system. The instrument cluster light will come on to indicate the Intellibeam system is reactivated. See Headlamp Main/Dipped-Beam Changer ⇔ 151 and Flash-to-Pass ⇔ 151.

The main beams may not turn off automatically if the system cannot detect other vehicle's lamps because of any of the following:

- The other vehicle's lamp(s) are missing, damaged, obstructed from view, or otherwise undetected.
- The other vehicle's lamp(s) are covered with dirt, snow, and/or road spray.
- The other vehicle's lamp(s) cannot be detected due to dense exhaust, smoke, fog, snow, road spray, mist, or other airborne obstructions.

- Your vehicle's windscreen is dirty, cracked, or obstructed by something that blocks the view of the light sensor.
- Your vehicle is loaded such that the front end points upward, causing the light sensor to aim high and not detect headlamps and tail lamps.
- Driving on winding or hilly roads.

The automatic main beam headlights may need to be disabled if any of the above conditions exist.

Exterior Lamps Off Reminder

A warning chime will sound if the exterior lamp control is left on in either the headlight or parking light position and the driver door is opened with the ignition off.

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

This feature allows the main-beam headlights to be used to signal the driver in front of you that you want to pass.

Pull and hold the indicator lever toward you to use this feature. When this is done the following will occur:

- If the headlights are off or in dipped-beam mode, the main-beam headlights will turn on. They will stay on as long as the lever is held there. Release the lever to turn them off.
- If the headlamps are in main-beam mode, they will go to dipped beam.

Daytime Running Lamps (DRL)

DRL can make it easier for others to see the front of your vehicle during the day.

The dedicated DRL will come on when all of the following conditions are met:

- The ignition is on.
- The exterior lamp control is in AUTO.
- The light sensor determines it is daytime.
- The parking brake is released or the vehicle is not in P (Park).

The tail lamps, instrument panel lights, and other lamps will not be on.

To turn the DRL off, turn the exterior lamps control to 50%. To turn the DRL back on, turn the control to 0.05.

Automatic Headlamp System

When the exterior lamp control is set to AUTO and it is dark enough outside, the headlights come on automatically.



If equipped, the light sensor is on top of the instrument panel or on the windscreen near the rearview mirror.

Do not cover the sensor; otherwise the headlamps will come on when they are not needed.

The system may also turn on the headlamps when driving through a parking garage or tunnel.

If the vehicle is started in a dark garage, the automatic headlamp system comes on immediately. If it is light outside when the vehicle leaves the garage, there is a slight delay before the automatic headlight system turns off the headlights. 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* ⇒ 154.

When it is bright enough outside, the headlamps will turn off.

The automatic headlamp system turns off when the exterior lamp control is turned to $\begin{tabular}{l} \begin{tabular}{l} \be$

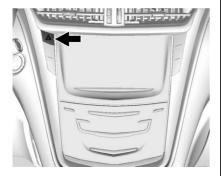
Lights On with Wipers

If the windscreen wipers are activated in daylight with the engine on, and the exterior lamp control is in AUTO, the headlights, parking lights, and other exterior lamps come on. The transition time for the lamps coming on varies based on wiper speed. When the wipers are not operating, these lamps turn off. Move the exterior lamp control to \circlearrowleft or $\stackrel{\cdot}{=}005$ to disable this feature.

Adaptive Forward Lighting (AFL)

On vehicles with the AFL system, the headlamps pivot horizontally to provide greater road illumination while turning. To enable AFL, set the exterior lamp control on the indicator lever to the AUTO position. Moving the control out of the AUTO position will deactivate the system. AFL will operate when the vehicle speed is greater than 3 km/h (2 mph). AFL will not operate when the transmission is in R (Reverse). AFL is not immediately operable after starting the vehicle;

Hazard Warning Flashers



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The hazard warning flashers turn on automatically if the airbags deploy.

Indicator and Lane-Change Signals



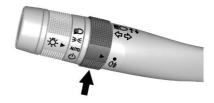
Move the lever all the way up or down to signal a turn.

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 indicator and lane-change signal can be turned off manually by moving the lever back to its original position. If after signalling a turn or lane change, the arrow flashes rapidly or does not come on, a signal bulb might be burned out.

Rear Fog Lamps



The rear fog lamp control is on the indicator lever.

O‡: Turn the fog lamp band on the stalk to O‡ and release it, to turn the rear fog lamps on or off. The band will return to its original position.

The parking lights and headlights must be on for the rear fog lamps to work.

Interior Lighting

Instrument Panel Illumination Control



The brightness of the instrument panel lighting and steering wheel controls can be adjusted.

Something: Move the thumbwheel up or down to brighten or dim the lights.

The brightness of the displays automatically adjusts based on outdoor lighting. The instrument panel illumination control will set the lowest level to which the displays will automatically be adjusted.

Courtesy Lamps

The courtesy lamps come on when any door is opened and the dome lamp is in the DOOR position.

Dome Lamps



To change the dome lamp settings, press the following:

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

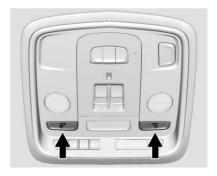
DOOR: The lamp comes on when a door is opened.

ON: Turns the lamp on.

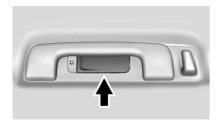
Reading Lamps

There are front and rear reading lamps on the overhead console and over the rear passenger doors. These lamps come on when any door is opened.

To manually turn the reading lamps on or off:



Press or next to each overhead console reading lamp.



Press the lamp lenses over the rear passenger doors.

Lighting Features

Entry Lighting

Some exterior lamps and most of the interior lights turn on briefly at night when is pressed on the Remote Keyless Entry (RKE) transmitter. See Remote Keyless Entry (RKE) System Operation \$\phi\$ 28. After about 30 seconds the exterior lamps turn off, then the remaining interior lights dim to off. Entry lighting can be disabled manually by turning the ignition on or to ACC/ACCESSORY, or by pressing on the RKE transmitter.

This feature can be turned on or off. See "Vehicle Locator Lights" under Vehicle Personalisation

143.

Exit Lighting

Some exterior lamps and interior lights come on at night, or in areas with limited lighting, when the driver door is opened and the turn signal lever is pulled and released after the ignition is turned off. The dome lamp comes on after the ignition is turned

off. 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* \Rightarrow 143.

Battery Load Management

The vehicle has Electric Power Management (EPM), which estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly bring the charge back up. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. 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 the power that is needed for very high electrical loads.

A high electrical load occurs when several of the following are on, such as: headlamps, main beams, fog lamps, rear window demister, climate control fan at high speed, heated seats, engine cooling fans, and loads plugged into accessory power outlets.

EPM works to prevent excessive discharge of the battery. It does this by balancing the generator's output and the vehicle's electrical needs. It can increase engine idle speed to generate more power, whenever needed. It can temporarily reduce the power demands of some accessories.

Normally, these actions occur in steps or levels, without being noticeable. In rare cases at the highest levels of corrective action, this action may be noticeable to the driver. If so, a DIC message might be displayed. If a battery message is displayed, it is

recommended that the driver reduce the electrical loads as much as possible. See *Driver Information Centre* (DIC) \Rightarrow 136.

Battery Power Protection

The battery saver feature is designed to protect the vehicle's battery.

If some interior lamps are left on and the ignition is turned off, the battery rundown protection system automatically turns the lamp off after some time.

Exterior Lighting Battery Saver

The exterior lamps turn off about 10 minutes after the ignition is turned off, if the parking lamps or headlamps have been manually left on. This protects against draining the battery. To restart the 10-minute timer, turn the exterior lamp control to the \circlearrowleft position and then back to the \circlearrowleft 00 $\stackrel{\cdot}{}$ or \Longrightarrow position.

To keep the lamps on for more than 10 minutes, the ignition must be on or in ACC/ACCESSORY.

Infotainment System

Introduction Infotainment	157
Performance Data Recorder (PDR) Performance Data Recorder (RDR)	157
Recorder (PDR)	15/

Introduction

Infotainment

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

Performance Data Recorder (PDR)

If equipped, the PDR icon displays on the Home Page.

Important Information

Read before using PDR. All or some of the information may apply to your country:

- Use of the Performance Data
 Recorder (PDR System) may be
 prohibited or legally restricted in
 certain countries and situations.
 It is your own responsibility to
 ensure compliance with applicable
 laws and regulations, including
 but not limited to privacy laws,
 laws related to camera
 surveillance and recordings, road
 traffic and security laws, and laws
 on the protection of publicity and
 personality rights.
- You are solely liable for operation of your vehicle and use of the PDR System, including all related legal responsibilities. Use of the PDR System may be prohibited or legally restricted in certain

countries and situations. Vehicles equipped with the PDR System are intended for use on private tracks only and may under local laws and regulations be restricted or completely excluded from use in areas accessible by the public, such as public roads. It is your own responsibility to ensure compliance with applicable laws and regulations, including but not limited to privacy laws, laws related to camera surveillance and recordings, road traffic and security laws, and laws on the protection of publicity and personality rights. You may need a permit, license, or other approval from local authorities in order to comply with applicable laws and regulations.

- Do not use the PDR System if this could distract your attention from traffic or entail other risks.
- Do not rely exclusively on camera footage for steering the vehicle.
- Comply with any notice and consent requirements before capturing and/or recording the

- voices or images of other persons or collecting other personal data with the PDR System.
- Notify other drivers of your vehicle of the above rules and require them to comply with them.
- General Motors does not accept any responsibility or liability in connection with an impermissible use of the PDR System.
- Please note that law enforcement authorities may have the right to seize video recordings and use them as evidence of criminal/ driving offences against you or third parties.
- The PDR System captures and records any sound perceivable within the vehicle, including any conversations among vehicle occupants. Hidden recording of conversations may be an offence under certain jurisdictions. Therefore, all vehicle users and occupants must be informed about ongoing audio recording upon activation of the PDR System.

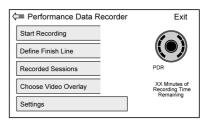
The PDR records video, audio, and vehicle data. This data is stored on a removable SD card in the glovebox.

The recorded data is not stored anywhere else and is only accessible from the SD card.

To begin, insert a FAT32 formatted SD card, Class 10 required, 8, 16, or 32 GB recommended, into the glove box SD card reader.

Touch the PDR icon to access the PDR menu. The options displayed are:

Start Recording



If the system is unable to begin recording, the Start Recording button is greyed out.

Touch Start Recording to begin recording. After recording begins, this button changes to Stop Recording. Touch to stop the recording session.

The recording must be stopped and the file closed before removing the SD card, or the recording cannot be reviewed.



The elapsed time will show when recording. To define a finish line, see "Define Finish Line" later in this section.



If there is no available space on the SD card, a message displays. Delete or transfer recordings on the SD card or use another SD card with free space.

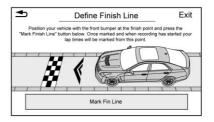
To delete a recording, go to the Recorded Sessions menu and touch **X** next to the item. See "Recorded Sessions" later in this section.



If no SD card is inserted, a message displays.

Define Finish Line

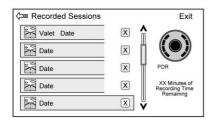
To track and record the vehicle's lap times, the starting point of a lap must be set. Crossing this point activates the lap timer when recording.



To set the finish line, position the vehicle with the front bumper at the start/finish point. From the PDR menu, touch Define Finish Line and then touch Mark Fin Line. This can be done with the vehicle moving.

Recorded Sessions

To view recorded videos, touch Recorded Sessions.



A list of recordings displays.

Select the recording to start playback.

Touch X next to an item to delete that recording. Touch Yes to delete or No to cancel on the confirmation screen. Touch Dismiss to exit.

Video playback is not allowed while the vehicle is in motion.

Tap on the screen while the video is playing to display the video controls:

Video Scrubber : Changes the position and playback. The length of the bar corresponds to the time of the video. Advance or rewind the video by dragging along the bar.



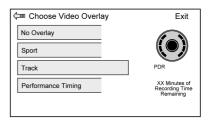
Delete Recording: Touch to delete the video. A confirmation screen displays. Touch Yes to delete or No to cancel.

Pause/Play: Touch to play or pause the video. The button will change when pressed.

□: Touch to display the previous screen.

Exit: Touch to exit the current display.

Choose Video Overlay



Touch the Choose Video Overlay screen button to display the menu screen.

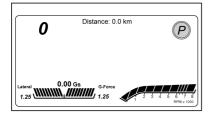
Select one:

- No Overlay
- Sport
- Track
- Performance Timing

No Overlay:

No vehicle data displays on top of the recorded video. Vehicle data is still available with the video when accessed in the toolbox software.

Sport:

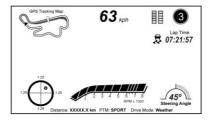


Displays these vehicle metrics:

- Vehicle Speed: Up to three digits are displayed in km/h or MPH depending on vehicle settings.
- Engine Rotations Per Minute (RPMs): The curved line shows current RPMs. As the RPMs increase, the backfill follows.
- Transmission State (Current Gear): Automatic transmissions display 1, 2, etc.
- Lateral G-Force Graphic: Left and Right G-Forces are displayed. The graphic fills to the left or the right depending on the measure value.

- The measured G-Force displays as a number at the top of the graphic.
- Event Odometer: This displays the distance driven since the recording began.

Track:



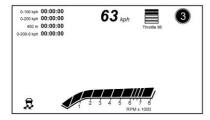
Displays these vehicle metrics:

- Vehicle Speed: Same as Sport.
- GPS Tracking Map: Shows the vehicle's current position relative to a known route.
- Engine Rotations Per Minute (RPMs): Same as Sport.
- Transmission State (Current Gear): Same as Sport.

- Friction Bubble Graphic: Lateral and longitudinal G-Forces are displayed as a dot within a bubble. A red dot displays when the vehicle starts braking and turns green when the vehicle accelerates. The dot is white when the vehicle is not moving. A white dot is the default.
- Brake and Throttle Graphic:
 Displays the percentage value of brake and throttle pedal position from 0–100%.
- Steering Angle: The graphic fills from the centre to the left or right depending on the direction of steering. The numerical steering angle displays below the graphic.
- StabiliTrak Active Indicator: The graphic only displays if the active handling systems are activated.
- Performance Traction
 Management (PTM) Mode:
 Displays the current PTM mode.
 The options are Wet, Dry, Sport 1,
 Sport 2, or Race.

- Current Lap Time: Displays the elapsed lap time if the finish line is defined and the vehicle has crossed the defined finish line at least once.
- Event Odometer: Displays the distance driven since the recording began.
- Drive Mode: Displays the vehicle's current drive mode.

Performance Timing:



Displays these vehicle metrics:

- Vehicle Speed: Same as Sport.
- Engine Rotations Per Minute (RPMs): Same as Sport.
- Transmission State (Current Gear): Same as Sport.

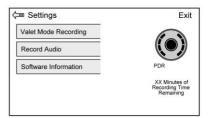
- 0-100 km/h (0-60 mph),
 0-200 km/h (0-100 mph), 400 m (1/4 mi), and 0-200-0 km/h (0-100-0 mph): The timer starts recording as soon as the vehicle accelerates. As the vehicle passes each speed and distance milestone, it is displayed on the overlay.
- Throttle Position: Displays the percentage of throttle applied from 0–100%.
- StabiliTrak Active Indicator: The graphic only displays if the active handling systems are activated.

Naming Convention

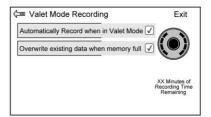
The recorded video file name is stored as the recorded date and the length of the recording.

If the recorded session was recorded while the system was in Valet Mode, the file name will display the mode, date, and length of time.

Settings



Touch the Settings button from the PDR menu to display settings.



Valet Mode Recording: Allows recording preferences to be selected. It is recommended that a blank SD card be used. Available choices are:

- Automatically record when in Valet Mode: Enables the PDR to begin recording as soon as the vehicle is in Valet Mode.
- Overwrite existing data when memory full: Allows manual overwriting of previous recordings, one at a time starting with the oldest, when the current recording requires additional storage to continue.

Audio will not record during Valet Mode.

Record Audio: Allows audio to be recorded along with video.

Audio will not record during Valet Mode.

Software Information : Displays PDR software information and version numbers.

Toolbox Software: Allows for the evaluation of the driver and the vehicle performance on a personal computer after a recorded event. See your retailer for details.

Climate Controls

Climate Control Systems	
Dual Automatic Climate Con	trol

Dual Automatic Climate Control	
System	164
$Rear\ Climate\ Control\ System\ \dots.$	169

Air Vents Maintenance

Air Vents

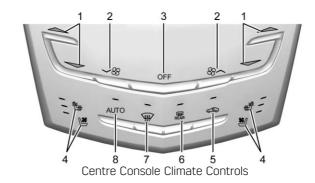
Passenger Compartment An		
Filter	172	
Service	172	

Descender Compartment Air

Climate Control Systems

Dual Automatic Climate Control System

The climate control buttons on the centre console and on the climate control display are used to adjust the heating, cooling, and ventilation.



- Driver and Passenger Temperature Controls
- 2. Fan Control
- 3. OFF (Fan)
- 4. Driver and Passenger Heated and Ventilated Seats (If Equipped)

- 5. Recirculation
- 6. Rear Window Demister
- 7. Defrost
- 8. AUTO (Automatic Operation)

Climate Control Display

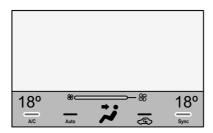
- 1. Driver and Passenger Temperature Controls
- 2. Fan Controls
- 3. Rear (Rear Climate Control Display, If Equipped)
- 4. Sync (Synchronized Driver and Passenger Temperature)
- 5. Recirculation
- 6. Air Delivery Mode Control
- 7. Auto (Automatic Operation)
- 8. A/C (Air Conditioning)
- 9. On/Off

Climate Control Display

The fan, air delivery mode, air conditioning, recirculation, driver and passenger temperatures, Auto, and Sync settings can be controlled by touching CLIMATE on the infotainment Home Page or the climate control status display.

A selection can then be made on the front climate control page displayed. See the infotainment manual.

Climate Control Status Display



The climate control status display appears briefly when the climate control buttons on the centre console are adjusted. Touching the quick status pane opens the climate application.

Climate Control Function with Stop/ Start (If Equipped)

The climate control system depends on other vehicle systems for heat and power input. The climate control system will balance stop/start efficiency with air conditioning comfort and demist operation. Certain climate control settings can result in fewer Auto Stops.

The following climate control settings result in fewer Auto Stops:

- Defrost mode
- High fan speed settings
- Extreme temperature settings

For maximum air conditioning comfort, use the stop/start disable switch. See "Auto Stop/Start" under Starting the Engine \Rightarrow 191.

Automatic Operation

The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.

When AUTO is lit, all four functions operate automatically. Each function can also be manually set and the selected setting is displayed. Functions not manually set will continue to be automatically controlled, even if the AUTO indicator is not lit.

For automatic operation:

- Touch or press AUTO on the display or the centre console.
- Set the temperature. Allow the system time to stabilise. Then adjust the temperature as needed for best comfort.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather. The recirculation light will not come on. Press \Leftrightarrow to select recirculation; press it again to select outside air.

English units can be changed to metric units through the instrument cluster. See "Cluster Options Menu" under *Instrument Cluster* ⇔ 119.

On/Off: Touch On/Off on the display or press OFF on the center stack to turn the fan on or off. When OFF is selected, the system will prevent outside air from entering the vehicle. If on is selected, or any other button is pressed, the climate control system will turn on and return to delivering airflow as set. The temperature control and air delivery mode can still be adjusted.

 \triangle / ∇ : The temperature can be adjusted separately for the driver and the passenger. Press or touch \triangle or ∇ on the center stack or display to increase or decrease the temperature. Press and hold to rapidly increase or decrease the temperature.

Sync: Touch Sync on the display to link all climate zone settings to the driver settings. Adjust the driver side

temperature control to change the linked temperature. When the passenger settings are adjusted, Sync is no longer active and the temperatures are unlinked.

Rear: If equipped, touch Rear on the front climate control display to open the rear climate control display. The rear climate control settings can now be adjusted from the front passenger area.

Manual Operation

Shape Norwall Press Shape A or Who on the center stack or touch the display, to increase or decrease the fan speed. Press and hold the buttons or the display control to adjust speed more quickly. Pressing either button cancels automatic fan control and the fan can be controlled manually. Press or touch AUTO on the center stack or the display to return to automatic operation.

Air Delivery Mode Control: When the climate information is displayed, touch the desired air delivery mode on the display to change the direction of the airflow. The selected air delivery

mode is lit. Touching any of the air delivery modes cancels automatic air delivery control and the direction of the airflow can be controlled manually.

To change the current mode, select one of the following:

?: Air is directed to the instrument panel outlets.

: Air is directed to the floor outlets, with some air to the windscreen and side windows.

: Air is divided between the instrument panel outlets and the floor outlets.

: Clears the windows of mist or moisture. Air is directed to the windscreen and floor outlets.

: Clears the windscreen of mist or frost more quickly. Air is directed to the windscreen. Press (**) on the center stack to turn on or off. Changing the air delivery mode also turns off the defrost mode.

A/C: Touch A/C on the display to turn the automatic air conditioning on or off. If the fan is turned off, the air conditioner will not run. Outside temperatures below freezing may also prevent the air conditioner from running.

Touch or press AUTO on the display or center stack to return to automatic operation, the air conditioner runs as needed.

Automatic Air Recirculation: When the AUTO indicator light is on, the air is automatically recirculated as needed to help quickly cool the inside of the vehicle.

The climate control system may have a sensor to detect air pollution. When using automatic air recirculation, the air quality control system may operate. To adjust the sensitivity of the air quality sensor, see "Climate and Air Quality" under *Vehicle Personalisation* ⇔ 143.

€ : Touch or press € on the display or center stack to alternate between recirculating air inside the vehicle or pulling in outside air. The indicator light is lit when recirculation mode is active. This helps to quickly

cool the air inside the vehicle or reduce outside air and odors that might enter.

Touching or pressing cancels automatic recirculation. Touch or press AUTO on the display or center stack to return to automatic operation; recirculation runs automatically as needed.

Manual recirculation mode is not available when in Defrost or Defog modes.

Auto Defog: The climate control system may have a sensor to automatically detect high humidity inside the vehicle. When high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner. If the climate control system does not detect possible window misting, it returns to normal operation. To turn Auto Defog off or on, see "Climate and Air Quality" under Vehicle Personalisation

143.

Rear Window Demister

demister on or off. An indicator light on the button comes on to show that the rear window demister is on. The rear window defogger only works when the engine is running.

The rear window demister turns off automatically after about 15 minutes. At higher vehicle speeds, the rear window demister may stay on continuously.

The rear window demister can be set to automatic operation. See "Climate and Air Quality" under *Vehicle Personalisation* ⇒ *143*. When Auto Rear Demist is selected, the rear window demist turns on automatically when the interior temperature is about 4 °C (40 °F) and below.

The upper gridlines on the rear window are aerial lines and are not intended to heat when the demister is activated.

The heated outside mirrors turn on when the rear window demister button is on and help to clear mist or frost from the surface of the mirrors.

Caution

Do not try to clear frost or other material from the inside of the front windscreen and rear window with a razor blade or anything else that is sharp. This may damage the rear window demister grid and affect the radio's ability to pick up stations clearly. The repairs would not be covered by the vehicle warranty.

Driver and Passenger Heated and Ventilated Seats: If equipped, press to heat the driver or passenger seat cushion and seatback.

Press or to ventilate the driver or passenger seat.

The vehicle also has auto heated and ventilated seats that turn on when the vehicle is on. The seats will activate at the level required by the vehicle's interior temperature. Use the manual heated or ventilated seat buttons on the centre console to turn auto heated or ventilated seats off. The auto

heated and ventilated seat feature can be turned on or off.

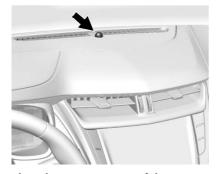
See Vehicle Personalisation \Rightarrow 143 and Heated and Ventilated Seats \Rightarrow 14.

Remote Start Climate Control
Operation: If equipped with the remote start feature, the climate control system may run when the vehicle is started remotely. The system uses the driver's previous settings to heat or cool the inside of the vehicle. The rear window defogger may come on during remote start based on cold ambient conditions. The rear window defogger indicator light does not come on during a remote start.

If equipped, the heated seats will turn on if it is cold outside or the ventilated seats will turn on if it is hot outside. The heated and ventilated seat indicator lights may not come on during a remote start. If equipped, the heated steering wheel will come on in a remote start if it is cold outside. The heated steering wheel indicator light may not come on.

See Remote Vehicle Start \Rightarrow 33 and Heated and Ventilated Seats \Rightarrow 14.

Sensor



The solar sensor, on top of the instrument panel near the windscreen, monitors the solar heat.

The climate control system uses the sensor information to adjust the temperature, fan speed, recirculation, and air delivery mode for best comfort.

If the sensor is covered, the automatic climate control system may not work properly.

Air Quality Sensor

If equipped with an air quality sensor, the climate control system adjusts to limit some exhaust fumes from being pulled inside the vehicle.

Touch or press AUTO on the display or center stack to activate the air quality sensor. Recirculation is automatically selected when poor quality air is detected. The air quality sensor will not maintain recirculation for an extended period to prevent the air inside the vehicle from becoming too dry or stuffy.

Under certain conditions, the air quality sensor will not activate, such as during cold weather or with extreme odours. Touch or press to activate recirculation.

The air quality sensor system does not protect against carbon monoxide (CO), which you cannot see or smell. See *Engine Exhaust* \Rightarrow 195. The air quality sensor operation can be adjusted. See "Climate and Air Quality" under *Vehicle Personalisation* \Rightarrow 143.

Rear Climate Control System

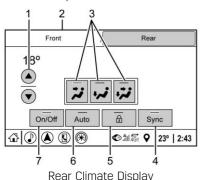
If equipped, the rear climate control system is on the rear of the centre console. The settings can be adjusted with the rear climate controls and the rear climate display.



Rear Climate Controls

- 1. Heated Rear Seats (If Equipped)
- 2. AUTO (Automatic Operation)
- 3. Temperature Control
- 4. Fan Controls
- 5. Ů (On/Off)

6. MODE (Air Delivery Mode Control)



- 1. Temperature Controls
- 2. Front (Front Climate Control Display)
- 3. Air Delivery Mode Controls
- 4. Sync (Synchronized Temperatures)
- 5. Rear Control Lockout
- 6. Auto (Automatic Operation)
- 7. On/Off

Rear: Touch Rear on the front climate control display to open the rear climate control display. The rear climate control settings can now be adjusted from the front passenger area.

Front : Touch Front on the rear climate control display to open the front climate control display.

 \circlearrowleft : Press \circlearrowleft on the rear climate controls to turn the system on or off.

On/Off: Touch On/Off on the rear climate display to turn the rear climate control on or off. To turn the system back on, press \circlearrowleft on the rear climate controls and within five seconds press the MODE or temperature buttons on the rear climate controls.

Sync: Touch Sync on the display to link the rear climate control temperature to the front climate control driver temperature. The Sync indicator will be lit. If the rear climate control temperature setting is adjusted this unlinks the driver and rear temperatures. The Sync indicator turns off.

a: Touch **a** to lock or unlock the rear climate controls on the rear of the center console. When locked, the rear climate control system can only be adjusted from the rear climate display.

Automatic Operation

AUTO: Press to turn on or off. AUTO will be lit on the rear climate display and will appear on the rear climate controls. The air delivery and fan speed is controlled automatically. If the air delivery mode or fan speed setting is manually adjusted, this cancels full automatic operation. The AUTO indicator will not be lit.

Manual Operation

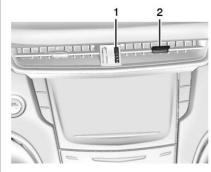
Fan Controls: Press or press and hold ♣ ∧ or ∨ ♣ on the rear climate controls to increase or decrease the rear climate airflow.

/ Touch or press or on the rear climate display or the rear climate controls to increase or decrease the rear passenger temperature. the rear climate display or press MODE on the rear climate controls to change the direction of the airflow in the rear seating area.

\\ or \ ii \): If equipped, press \\ or \ iii \)
to heat the left or right outboard seat cushion. See \(Heated \) Rear Seats \ \ \ \ \ \ 66. \)

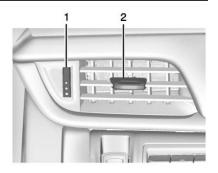
Air Vents

Adjustable air vents are in the centre and on the side of the instrument panel.



- 1. Thumbwheel
- 2. Slider Knob

Use the thumbwheels (1) near the air vents to open or close off the airflow.



Move the slider knobs (2) to change the direction of the airflow.

Additional air vents are beneath the windscreen and the driver and passenger side door windows. These are fixed and cannot be adjusted.

Operation Tips

- Clear away any ice, snow, or leaves from air inlets at the base of the windscreen that could block the flow of air into the vehicle.
- Clear snow off the bonnet to improve visibility and help decrease moisture drawn into the vehicle.

- Keep the path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.
- Use of non-GM approved 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.
- Do not attach any devices to the air vent slats. This restricts airflow and may cause damage to the air vents.

Maintenance

Passenger Compartment Air Filter

The filter reduces dust, pollen, and other airborne irritants from outside air that is pulled into the vehicle. The filter should be replaced as part of routine scheduled maintenance. See *Maintenance Replacement Parts*

⇒ 323.

See your retailer regarding replacement of the filter.

Service

All vehicles have a label underbonnet that identifies the refrigerant used in the vehicle. The refrigerant system should only be serviced by trained and certified technicians. The air conditioning evaporator should never be repaired or replaced by one from a salvage vehicle. It should only be replaced by a new evaporator to ensure proper and safe operation.

During service, all refrigerants should be reclaimed with proper equipment. Venting refrigerants directly to the atmosphere is harmful to the environment and may also create unsafe conditions based on inhalation, combustion, frostbite, or other health-based concerns.

Driving and Operating

Driving Information
Distracted Driving 174
Defensive Driving 175
Control of a Vehicle 175
Braking 175
Steering 175
Off-Road Recovery 176
Loss of Control
Track Events and Competitive
Driving 177
Driving on Wet Roads 181
Hill and Mountain Roads 182
Winter Driving 183
If the Vehicle Is Stuck 184
Vehicle Load Limits 184
Starting and Operating
New Vehicle Run-In 188
Composite Materials 188
Ignition Positions 189
Starting the Engine
Retained Accessory
Power (RAP) 193
Shifting Into Park 193
Shifting out of Park

Parking over Things	
That Burn	194
Extended Parking	194
Engine Exhaust	
Engine Exhaust	195
Running the Vehicle While	1,5
Parked	195
Automatic Transmission	
Automatic Transmission	
Manual Mode	198
Drive Systems	
All-Wheel Drive	199
	• / /
Brakes	
Antilock Brake System (ABS)	
Electric Parking Brake	
Brake Assist	201
Hill Start Assist (HSA)	201
Ride Control Systems	
Traction Control/Electronic	
Stability Control	202
Driver Mode Control	
Competitive Driving Mode	
Limited-Slip Differential	
(V-Series Only)	209
Cruise Control	
	209

Adaptive Cruise Control 21	2
Driver Assistance Systems	
Driver Assistance Systems 22	0
Assistance Systems for Parking	
or Reversing 22	1
Assistance Systems for	
Driving 22	6
Forward Collision Alert (FCA)	
System 22	6
Forward Automatic	
Braking (FAB) 22	9
Side Blind Zone Alert (SBZA) 23	0
Lane Change Alert (LCA) 23	
Lane Departure	
Warning (LDW) 23	2
Lane Keep Assist (LKA) 23	2
Fuel	
Fuel 23	4
Fuel Additives 23	55
Filling the Tank 23	
Filling a Portable Fuel	
Container	6
Trailer Towing	. –
General Towing Information 23	1
Driving Characteristics and	
Towing Tips	
Trailer Towing (L4 Engine) 24	
Trailer Towing (V-Series)	12

Towing Equipment	(L4
Engine)	24

Conversions and Add-Ons Add-On Electrical Equipment ... 244

Driving Information

Distracted Driving

Distraction comes in many forms and can take your focus from the task of driving. Exercise good judgement and do not let other activities divert your attention away from the road. Many local governments have enacted laws regarding driver distraction. Become familiar with the local laws in your area.

To avoid distracted driving, keep your eyes on the road, keep your hands on the steering wheel, and focus your attention on driving.

- Do not use a phone in demanding driving situations. Use a hands-free method to place or receive necessary phone calls.
- Watch the road. Do not read, take notes, or look up information on phones or other electronic devices.
- Designate a front seat passenger to handle potential distractions.

- Become familiar with vehicle features before driving, such as programming favourite radio stations and adjusting climate control and seat settings. Program all trip information into any navigation device prior to driving.
- Wait until the vehicle is parked to retrieve items that have fallen to the floor.
- Stop or park the vehicle to tend to children.
- Keep pets in an appropriate carrier or restraint.
- Avoid stressful conversations while driving, whether with a passenger or on a mobile phone.



Warning

Taking your eyes off the road too long or too often could cause a crash resulting in injury or death. Focus your attention on driving.

Refer to the infotainment section for more information on using that system and the navigation system, if equipped, including pairing and using a mobile phone.

Defensive Driving

Defensive driving means "always expect the unexpected." The first step in driving defensively is to wear the seat belt. See *Seat Belts* ⇔ 67.

- 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

Variable Effort Steering

The vehicle has a steering system that varies the amount of effort required to steer the vehicle in relation to the speed of the vehicle.

The amount of steering effort required is less at slower speeds to make the vehicle more manoeuvrable and easier to park. At faster speeds, the steering effort increases to provide a sport-like feel to the steering. This provides maximum control and stability.

Electric Power Steering

The vehicle has electric power steering. It does not have power steering fluid. Regular maintenance is not required.

If power steering assist is lost due to a system malfunction, the vehicle can be steered, but may require increased effort. See your dealer if there is a problem.

If the steering wheel is turned until it reaches the end of its travel and is held against that position for an extended period of time, power steering assist may be reduced.

If the steering assist is used for an extended period of time while the vehicle is not moving, power assist may be reduced.

Normal use of the power steering assist should return when the system cools down.

See your dealer if there is a problem.

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.
- 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:

- 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.
- 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

⚠ Danger

High-performance features are intended for use only on closed tracks by experienced and qualified drivers and should not be used on public roads. High-speed driving, aggressive cornering, hard braking, and other high-performance driving can be dangerous. Improper driver inputs for the conditions may result in loss of control of the vehicle, which could injure or kill you or others. Always drive safely.

Competitive driving may affect the vehicle warranty. See the warranty manual before using the vehicle for competitive driving.

Engine Oil

Caution

Low oil levels can damage the engine. If using the vehicle for competitive driving, the engine may use more oil than it would with normal use. Check the oil level often during competitive driving.

2.0L L4 Turbo Engine (LTG) Engine

- Keep the level at or near 1 L (1 qt) above the upper mark that shows the proper operating range on the engine oil dipstick.
- Use a 600 W fan in addition to the production option V03.
- RON 104 premium fuel must be used with colder spark plugs. See your dealer.

6.2L Supercharged (LT4) Engine

Change the engine oil to 0W-40 or 5W-40 that meets the dexos2 specification. If this oil is not available, the following oils can be used as an alternative: Valvoline

SYNPOWER MST 5W-40, Mobil 1 ESP Formula M 5W-40. See *Capacities and Specifications* \Rightarrow 326.

This requires premium fuel, and comes standard with a 10 L (10 qt) sump, air/oil separator, integrated oil cooler, and other powertrain and powertrain cooling components in preparation for track use.

Check the oil level often during track events and competitive driving and keep the oil level at or near the upper mark.

Automatic Transmission Fluid

Have the gearbox fluid set to the track specific oil level prior to track usage. Gearbox fluid should be changed after every 15 hours of track usage. Any transmission level set or change should be performed at your retailer.

Brake Fluid

 Before racing, replace existing brake fluid with a qualified racing brake fluid from a sealed container. Brake fluid with a dry boiling point >279 °C (534 °F) is qualified. If racing brake fluid is used, replace it with GM approved brake fluid before driving on public roads. See *Recommended Fluids and Lubricants* \$\dip 322\$.

Do not use silicone-based fluids.

If racing brake fluid is in the vehicle and the age of the brake fluid is over a month old or unknown, replace the brake fluid before racing/closed track driving.

Caution

Failure to change the brake fluid and transfer case fluid after any performance or race track driving could result in damage not covered by the vehicle warranty. Have the brake fluid and transfer case fluid changed by your dealer after any performance or race track driving. See *Recommended Fluids and Lubricants* \$\display 322.

Brake Burnishing

For vehicles equipped with front Brembo brake systems:

Performance/racing brake pads are required prior to racing or closed track driving. Vehicles with option code JE2 have performance brake pads.

Base Vehicles Only: Performance/ racing brake pads are required prior to racing or closed track driving. Vehicles with option code Y4Q have performance brake pads.

New brake pads must be burnished before racing or other competitive driving.

Caution

Performing the brake burnish procedure on a base brake system can result in brake damage.

Caution

The new vehicle break-in period should be completed before performing the brake burnish procedure, otherwise damage may occur to the powertrain/engine. See New Vehicle Run-In ⇒ 188.

Caution

Brake pedal fade will occur during any track burnish procedure and can cause brake pedal travel and force to increase. This could extend stopping distance until the brakes are fully burnished.

When this procedure is performed as instructed, it will not damage the brakes. The brake pads will smoke and produce an odour. The braking force and pedal travel may increase. After the procedure, the brake pads may appear white at the rotor contact.

Perform this procedure only on dry pavement, in a safe manner, and in compliance with all local and state ordinances/laws regarding motor vehicle operation.

Brake Burnish Procedure (V-Series and Y4Q only)

 Apply the brakes 25 times starting at 100 km/h (60 mph) to 50 km/h (30 mph) while decelerating at 0.4 g. This is a

- medium brake application. Drive for at least 1 km (0.6 mi) between applying the brakes. This first step may be skipped if there are more than 320 km (200 mi) on the brake pads.
- 2. Repeatedly apply the brakes from 100 km/h (60 mph) to 25 km/h (15 mph) while decelerating at 0.8 g. This is a hard brake application, without activating the Antilock Brake System (ABS). Drive for at least 1 km (0.6 mi) between stops. Repeat until the brake pedal travel starts to increase. Depending on conditions, this should take no longer than 25 brake applications.
- Cool down: Drive at 100 km/h (60 mph) for approximately
 km (10 mi) without using the brakes.
- Apply the brakes 25 times from 100 km/h (60 mph) to 50 km/h (30 mph) while decelerating at 0.4 g. This is a medium brake

application. Drive for at least 1 km (0.6 mi) between applications.

Axle Fluid

Axles must have 885 km (500 mi) before being used in track driving.

The front, if equipped with AWD, and 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 ⇒* 322.

Caution

During a first time track or racing event, high axle temperatures can occur. Damage could be caused to the axle and would not be covered by the vehicle warranty. Do not drive as long or as fast the first time the vehicle is driven on the track or raced.

- The rear axle lubricant should be replaced with new lubricant.
- Additional cooling capacity is also required for continuous competitive driving.

Track Battery

If equipped, this is a lightweight, low power battery for track use only. Remove after each event.

Only use this battery when temperatures are above freezing.

Store in a cool, dry location. Charge periodically to keep the state of charge from getting too low. A battery tender can be used.

When installing or removing the track battery, steps must be followed to calibrate the electronic throttle control. See *Battery* \Rightarrow 263.

Wheel Alignment (V-Series Only)

Wheel alignment suggested specs for track use:

Front: -2.0 deg camber, 0.2 deg total toe

Rear: -1.7 deg camber, 0.2 deg total toe

V-Series Vehicles Equipped with the Original Equipment Tyres

Follow the requirements and recommendations for tyre inflation pressures while driving on various types of tracks/courses. This helps to achieve a well-balanced vehicle and enhance tyre traction performance.

Use good judgement to determine the appropriate tyre inflation pressure and speeds for the track/course configuration and environmental conditions. Contact the tyre manufacturer if further assistance is needed.

To maximise tyre life, drive 800 km (500 mi) prior to racetrack driving or complete the minimum track running that will increase the tyre pressures by 35 kPa (5 psi). After this, immediately let the tyres cool to cold pressures.

Tyre Inflation Pressure Guidelines

Tyre inflation pressures affect vehicle handling and tyre life, and should be adjusted for various types of tracks/ courses.

Inspect the tyres prior to every track/ course session. Track/course driving will reduce the tyre tread life.

Driving and Operating



⚠ Warning

Operating the vehicle at high speeds can be dangerous. Improper tyre inflation pressure can put additional strain on the tyres and can cause a sudden failure. Make sure the tyres are in excellent condition, and use the correct cold tyre inflation pressure for the vehicle load and track/course.

⚠ Warning

Tracks/courses put high loads on tyres operating at high speed, which can lead to tyre failure if not inflated properly. Always limit vehicle cargo to the driver plus one passenger with no additional cargo.

⚠ Warning

Track/course loads wear tires both on the tread and internal to the tire. When driven in track/course conditions, even if tread is not worn down to the treadwear indicator, tires must be replaced after the equivalent of two tanks of fuel or approximately 160 km (100 mi).

Tyre Inflation Pressure for Tracks with Sustained High-Speed Operation on Banked Turns

(e.g., Daytona International Speedway, Indianapolis Motor Speedway, or similar) Inflate tyres to a minimum of 300 kPa (44 psi) when cold.

Do not reduce tyre inflation pressure when hot.

Tyre Inflation Pressure for Tracks with Combined High-Speed and High-Load Corners

(e.g., Nurburgring Nordschliefe, Spa Francorchamps, or similar)

Inflate tyres to a minimum of 260 kPa (38 psi) when cold.

Limit vehicle speed to below 230 km/h (143 mph) until 290 kPa (42 psi) is reached.

For continuous track use, hot tyre inflation pressure may be adjusted to a minimum of 290 kPa (42 psi).

Tyre Inflation Pressure for Road/ Street Courses

(e.g., Virginia International Raceway, Road Atlanta, or similar)

Inflate tyres to a minimum of 240 kPa (35 psi) cold.

For continuous road/street course use, hot tyre inflation pressure may be adjusted to a minimum of 270 kPa (39 psi).

Return the tyres to the recommended cold tyre inflation pressure when high-speed driving has ended. See *Vehicle Load Limits* \Rightarrow 184 and *Tyre Pressure* \Rightarrow 283.

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.

(Continued)

Warning (Continued)

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* ⇒ 280.
- Turn off cruise control.

Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, 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 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.



Coasting downhill in N (Neutral) or with the ignition off is dangerous. This can cause overheating of the brakes and loss of steering assist. Always have the engine running and the vehicle in gear.

 Drive at speeds that keep the vehicle in its own lane. Do not swing wide or cross the centre line.

- Be alert on top of hills; something could be in your lane (e.g., stalled car, accident).
- Pay attention to special road signs (e.g., falling rocks area, winding roads, long gradients, overtaking or no-overtaking zones) and take appropriate action.

Winter Driving

Driving on Snow or Ice

Snow or ice between the tyres and the road creates less traction or grip, so drive carefully. Wet ice can occur at about 0 °C (32 °F) when freezing rain begins to fall. Avoid driving on wet ice or in freezing rain until roads can be treated

For slippery road driving:

- Accelerate gently. Accelerating too quickly causes the wheels to spin and makes the surface under the tyres slick.

- Antilock Brake System (ABS) improves vehicle stability during hard stops, but the brakes should be applied sooner than when on dry pavement. See Antilock Brake System (ABS)

 199.
- Allow greater following distance and watch for slippery spots. Icy patches can occur on otherwise clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering manoeuvres and braking while on ice.
- Turn off cruise control.

Blizzard Conditions

Stop the vehicle in a safe place and signal for help. Stay with the vehicle unless there is help nearby. 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.

If the vehicle is stuck in snow:

- Clear snow from the base of the vehicle, especially any blocking the exhaust pipe.
- Open a window about 5 cm
 (2 in) on the vehicle side that
 is away from the wind, to
 bring in fresh air.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to circulate the air inside the vehicle and set the

(Continued)

Warning (Continued)

fan speed to the highest setting. See "Climate Control Systems."

For more information about CO, see Engine Exhaust \Rightarrow 195.

To save fuel, run the engine for short periods to warm the vehicle and then shut the engine off and partially close the window. Moving about to keep warm also helps.

If it takes time for help to arrive, when running the engine, push the accelerator pedal slightly so the engine runs faster than the idle speed. This keeps the battery charged to restart the vehicle and to signal for help with the headlamps. Do this as little as possible, to save fuel.

If the Vehicle Is Stuck

Slowly and cautiously spin the wheels to free the vehicle when stuck in sand. mud, ice, or snow.

If stuck too severely for the traction system to free the vehicle, turn the traction system off and use the rocking method. See Traction Control/ *Electronic Stability Control* \$\dip 202.

⚠ 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 \Rightarrow 306.

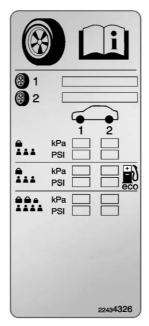
Vehicle Load Limits

It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo, and all non-factory-installed options. Two labels on the vehicle may show how much weight it may properly carry, the Tyre and Loading Information label and the Certification label.

Marning

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also reduce stopping distance, damage the tyres, and shorten the life of the vehicle.

Tyre and Loading Information Label



Label Example

A vehicle-specific Tyre and Loading Information label is attached to the vehicle's centre pillar (B-pillar). The Tyre and Loading Information label shows the size of the original tyres and the recommended cold tyre inflation pressures. For more information on tyres and inflation, see $Tyres \Leftrightarrow 280$ and $Tyre\ Pressure \Leftrightarrow 283$.

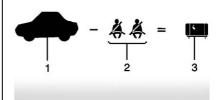
There is also important loading information on the Certification label. It may show the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axle. See "Certification Label" later in this section.

"Steps for Determining Correct Load Limit-

- Locate the statement "The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs." on your vehicle's placard.
- Determine the combined weight of the driver and passengers that will be riding in your vehicle.
- Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
- 4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.)

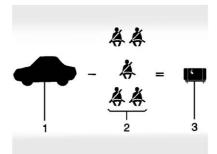
- 5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
- 6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle."

See *Trailer Towing (L4 Engine)*⇒ 240 or *Trailer Towing (V-Series)*⇒ 242 for important information on towing a trailer, towing safety rules, and trailering tips.



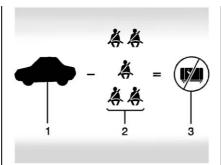
Example 1

- Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs).
- Subtract Occupant Weight
 68 kg (150 lbs) × 2 =
 136 kg (300 lbs).
- 3. Available Occupant and Cargo Weight = 317 kg (700 lbs).



Example 2

- 1. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs).
- Subtract Occupant Weight
 68 kg (150 lbs) × 5 =
 340 kg (750 lbs).
- 3. Available Cargo Weight = 113 kg (250 lbs).

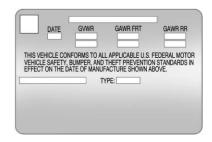


Example 3

- 1. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs).
- Subtract Occupant Weight
 91 kg (200 lbs) × 5 =
 453 kg (1,000 lbs).
- 3. Available Cargo Weight = 0 kg (0 lbs).

The combined weight of the driver, passengers, and cargo should never exceed the vehicle's capacity weight.

Certification Label



Label Example

A vehicle-specific Certification label is attached to the vehicle's centre pillar (B-pillar). The label may show 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.

⚠ 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.
- 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

Follow these recommended guidelines during the first 2,400 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 2.400 km (1.500 mi):

- Avoid full throttle starts and abrupt stops.
- Do not exceed 4,000 engine rpm.
- Avoid driving at any one constant speed, fast or slow.
- Avoid downshifting to brake or slow the vehicle when the engine speed will exceed 4000 rpm.
- Do not let the engine labour. Never lug the engine in high gear at low speeds.
- Do not participate in track 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 2,400 km (1,500 mi).
- To run in new tyres, drive at moderate speeds and avoid hard cornering for the first 300 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 300 km (200 mi). This is recommended every time brake linings are replaced.

Composite Materials

This vehicle may be equipped with parts containing carbon fibre, sheet-moulding compound, or other composite materials. Dealer-installed accessories may also contain composite materials. These parts and accessories may include the splitter or rocker extensions.

⚠ Warning

Exposed edges of parts containing carbon fiber and other composite materials can be sharp. Contact with these parts could result in injury. Use caution to avoid contacting these parts, including when washing the vehicle. If the parts are damaged, replace the parts promptly with replacements from your dealer.

Marning

Rocker extensions may break under pressure, resulting in property damage or injury. Do not stand on the rocker extension or use it as a step.

Ignition Positions



The vehicle has an electronic keyless ignition with pushbutton start.

The Remote Keyless Entry (RKE) transmitter must be in the vehicle for the system to operate. If the pushbutton start is not working, the vehicle may be near a strong radio antenna signal causing interference to the Keyless Access system. See *Remote Keyless Entry (RKE) System Operation*

⇒ 28.

To shift out of P (Park), the vehicle must be in ACC/ACCESSORY or ON/RUN, and the brake pedal must be applied.

Stopping the Engine/OFF (No Indicator Lights): When the vehicle is stopped, press ENGINE START/STOP once to turn the engine off.

If the vehicle is in P (Park), the ignition will turn off, and Retained Accessory Power (RAP) will remain active. See *Retained Accessory Power* (RAP) ⇒ 193.

If the vehicle is not in P (Park), the ignition will return to ACC/ACCESSORY and display a message in the Driver Information Centre (DIC). When the vehicle is shifted into P (Park), the ignition system will switch to OFF.

The vehicle may have an electric steering column lock. The lock is activated when the vehicle is switched to OFF and the driver door is opened. A sound may be heard as the lock actuates or releases. The steering column lock may not release with the wheels turned off centre. If this

happens, the vehicle may not start. Move the steering wheel from left to right while attempting to start the vehicle. If this does not work, the vehicle needs service.

Do not turn the engine off when the vehicle is moving. This will cause a loss of power assist in the brake and steering systems and disable the airbags.

If the vehicle must be shut off in an emergency:

- Brake using a firm and steady pressure. Do not pump the brakes repeatedly. This may deplete power assist, requiring increased brake pedal force.
- Shift the vehicle to N (Neutral).
 This can be done while the vehicle is moving. After shifting to N (Neutral), firmly apply the brakes and steer the vehicle to a safe location.
- Come to a complete stop, shift to P (Park) and turn the ignition to OFF. On vehicles with an automatic transmission, the gear

lever must be in P (Park) to turn the ignition switch to the OFF position.

4. Apply the parking brake. See *Electric Parking Brake* \$\dip 200\$.

riangle 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, press and hold the ENGINE START/STOP button for longer than two seconds, or press twice in five seconds.

ACC/ACCESSORY (Amber Indicator Light): This mode allows you to use some electrical accessories when the engine is off.

With the ignition off, pressing the button once without the brake pedal applied will place the ignition system in ACC/ACCESSORY.

The ignition will switch from ACC/ ACCESSORY to OFF after five minutes to prevent battery rundown.

ON/RUN/START (Green Indicator Light): This mode is for driving and starting. With the ignition off, and the brake pedal applied, pressing the button once will place the ignition system in ON/RUN/START. Once engine cranking begins, release the button. Engine cranking will continue until the engine starts. See *Starting the Engine* ♀ 191. The ignition will then remain in ON/RUN.

Service Mode

This power mode is available for service and diagnostics, and to verify the proper operation of the malfunction indicator lamp as may be required for emission inspection purposes. With the vehicle off, and the brake pedal not applied, pressing and holding the button for more than five seconds will place the vehicle in

Service Mode. The instruments and audio systems will operate as they do in ON/RUN, but the vehicle will not be able to be driven. The engine will not start in Service Mode. Press the button again to turn the vehicle off.

Starting the Engine

Move the gear lever to P (Park) or N (Neutral). To restart the engine when the vehicle is already moving, use N (Neutral) only.

Caution

Do not try to shift to P (Park) if the vehicle is moving. If you do, you could damage the transmission. Shift to P (Park) only when the vehicle is stopped.

Caution

If you add electrical parts or accessories, you could change the way the engine operates. Any

(Continued)

Caution (Continued)

Starting Procedure

 With the Keyless Access system, the Remote Keyless Entry (RKE) transmitter must be in the vehicle. Press ENGINE START/ STOP with the brake pedal applied. When the engine begins cranking, let go of the button.

> The idle speed will go down as the engine gets warm. Do not race the engine immediately after starting it.

If the RKE transmitter is not in the vehicle, if there is interference, or if the RKE battery is low, a Driver Information Center (DIC) will display a message. See Remote Keyless Entry (RKE) System Operation ⇒ 28.

Caution

Cranking the engine for long periods of time, by returning the ignition to the START position immediately after cranking has ended, can overheat and damage the cranking motor, and drain the battery. Wait at least 15 seconds between each try, to let the cranking motor cool down.

If the engine does not start after five to 10 seconds, especially in very cold weather (below -18 °C or 0 °F), it could be flooded with too much petrol. Try pushing the accelerator pedal all the way to the floor and holding it there as you press ENGINE START/STOP. Wait at least 15 seconds between each try, to allow the cranking motor to cool down. When the engine starts, release the accelerator. If the vehicle starts briefly but then stops again, do the same thing. This clears the extra petrol from the engine. Do

not race the engine immediately after starting it. Operate the engine and transmission gently until the oil warms up and lubricates all moving parts.

Stop/Start System

Marning

Exiting the vehicle without first shifting into P (Park) may cause the vehicle to move. You or others may be injured. Because the vehicle may have an auto engine Stop/Start feature, the vehicle's engine might seem to be shut off; however, once the brake pedal is released, the engine will start up again. The engine may restart even while the brake is applied.

Shift to P (Park) and turn the ignition off before exiting the vehicle

If equipped with the 2.0L L4, the vehicle has a fuel saving stop/start system to shut off the engine to help conserve fuel.

Auto Stop/Start

When the brakes are applied and the vehicle is at a complete stop, the engine may turn off. When stopped, the tachometer may display Auto Stop, or the Auto Stop light may come on in the instrument cluster. See *Rev Counter* ⇔ 123 and *Auto Stop Mode (Uplevel Cluster)* ⇔ 134. When the brake pedal is released or the accelerator pedal is pressed, the engine may restart.

Auto Stop may be deactivated if:

- A minimum vehicle speed is not reached.
- The engine or transmission is not at the required operating temperature.
- The outside temperature is not in the required operating range, typically below -10 °C (14 °F) or above 50 °C (122 °F).
- The gear lever is in any gear other than D (Drive).
- The battery has been recently disconnected.
- The battery charge is low.

- The interior comfort level has not reached the required level for the climate control system or demist settings. See Dual Automatic Climate Control System

 164.
- The Auto Stop time is greater than two minutes.



The automatic engine stop/start function can be disabled using the switch. The indicator on the switch will illuminate when the system is operational.

When \widehat{A} comes on green in the instrument cluster, the system is active. The system is not active when it comes on white with a slash through it.

Retained Accessory Power (RAP)

Some vehicle accessories may be used after the ignition is turned off.

The power windows and sunroof, if equipped, will continue to work for up to 10 minutes or until any door is opened.

The infotainment system will continue to work for 10 minutes, until the driver door is opened, or until the ignition is turned on or placed in ACC/ACCESSORY.

Shifting Into Park

To shift into P (Park):

1. Hold the brake pedal down and set the parking brake.

See *Electric Parking Brake* \$\dip 200.

- Move the shift lever into P (Park) by holding in the button on the shift lever and pushing the lever all the way toward the front of the vehicle.
- 3. Turn the ignition off.
- 4. Take the Remote Keyless Entry (RKE) transmitter with you.

Leaving the Vehicle with the Engine Running

⚠ Warning

It can be dangerous to leave the vehicle with the engine running. It could overheat and catch fire.

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly 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

(Continued)

Warning (Continued)

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* \Rightarrow 193. If you are towing a trailer, see *Driving Characteristics and Towing Tips* \Rightarrow 237.

If you have to leave the vehicle with the engine running, the vehicle must be in P (Park) and the parking brake set. After shifting into P (Park), try to move the shift lever out without first pushing the button on the shift lever.

If you can, the shift lever was not fully locked into P (Park).

Torque Lock

Torque lock is when the weight of the vehicle puts too much force on the parking pawl in the transmission. This happens when parking on a hill and shifting the transmission into P (Park) is not done properly and then it is difficult to shift out of P (Park). To prevent torque lock, set the parking

brake and then shift into P (Park). To find out how, see "Shifting Into 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 release system. The shift lock release is designed to prevent movement of the gear lever out of P (Park), unless the ignition is on and the brake pedal is applied.

The shift lock release is always functional except in the case of an uncharged or low voltage (less than 9 volt) battery.

If the vehicle has an uncharged battery or a battery with low voltage, try charging or jump starting the battery. See *Jump Starting* \$\dip 303\$ for more information.

To shift out of P (Park):

1. Apply the brake pedal.

- 2. Release the parking brake. See Electric Parking Brake \$ 200.
- Press the shift lever button.
- Move the shift lever.

If unable to shift out of P (Park):

- 1. Fully release the shift lever button.
- 2. While holding down the brake pedal, press the shift lever button again.
- Move the shift lever.

If the shift lever will not move from P (Park), consult your dealer or a professional towing service.

Parking over Things That Burn



⚠ Warning

Things that can burn could touch hot exhaust parts under the vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

Extended Parking

It is best not to park with the vehicle running. If the vehicle is left running, be sure it will not move and there is adequate ventilation.

See Shifting Into Park \$\Display\$ 193 and Engine Exhaust \$\price 195

If the vehicle is left parked and running with the RKE transmitter outside the vehicle, it will turn off after one hour.

If the vehicle is left parked and running with the RKE transmitter inside the vehicle, it will turn off after two hours.

The vehicle could turn off sooner if it is parked on a hill, due to lack of available fuel.

The timer will reset if the vehicle is taken out of P (Park) while it is running.

Engine Exhaust



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* \Rightarrow 193 and *Engine Exhaust* \Rightarrow 195.

If parking on a hill and pulling a trailer, see *Driving Characteristics and Towing Tips* \Rightarrow 237.

Automatic Transmission



There are several different positions for the shift lever.

P: This position locks the drive wheels. Use P (Park) 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 unless you have to. 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* \Leftrightarrow 193. If you are pulling a trailer, see *Driving Characteristics and Towing Tips* \Leftrightarrow 237.

Make sure the shift lever is fully in P (Park) before starting the engine. The vehicle has an electronic shift lock release system. Fully apply the regular brakes first and then press the shift lever button before shifting from P (Park) when the ignition is on. If you cannot shift out of P (Park),

ease pressure on the shift lever and 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* \Rightarrow 194.

Caution

Shifting to R (Reverse) while the vehicle is moving forward could damage the transmission. The repairs would not be covered by the vehicle warranty. Shift to R (Reverse) only after the vehicle is stopped.

R: Use this gear to reverse.

N: In this position, the engine does not connect with the wheels. To restart the engine when the vehicle is already moving, use N (Neutral) only.

⚠ Warning

Shifting into a drive gear while the engine is running at high speed is dangerous. Unless your foot is firmly on the brake pedal, the vehicle could move very rapidly. You could lose control and hit people or objects. Do not shift into a drive gear while the engine is running at high speed.

Caution

Shifting out of P (Park) or N (Neutral) with the engine running at high speed may damage the transmission. The repairs would not be covered by the vehicle warranty. Be sure the engine is not running at high speed when shifting the vehicle.

Caution

A transmission hot message may display if the automatic gearbox fluid is too hot. Driving under this condition can damage the vehicle. Stop and idle the engine to cool the automatic gearbox fluid. This message clears when the gearbox fluid has cooled sufficiently.

D: This position is for normal driving. If more power is needed for overtaking, press the accelerator pedal down.

Downshifting the transmission in slippery road conditions could result in skidding. See "Skidding" under Loss of Control \Rightarrow 176.

M: This mode can be entered with the shift lever in the D (Drive) position by pressing the M (Manual Mode) button on the top of the shift lever. M (Manual Mode) allows the driver to select gears appropriate for current driving conditions. M (Manual Mode) can be exited with a second press of the M (Manual Mode) button. See *Manual Mode* \Rightarrow 198.

Caution

Spinning the tyres or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If the vehicle is stuck, do not spin the tyres. When stopping on a hill, use the brakes to hold the vehicle in place.

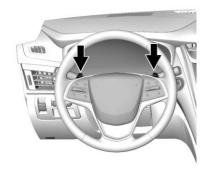
While in Sport or Track Mode, the vehicle monitors driving behavior, and automatically enables Performance Shift Features when spirited driving is detected. These features maintain lower transmission gears to increase available engine braking and improve acceleration response. The vehicle will exit these features and return to Sport or Track Mode normal operation after a short period when no spirited driving is detected. See *Driver Mode Control* ⇔ 203.

Manual Mode

Tap Shift

Caution

Driving with the engine at a high rpm without upshifting while using Tap Shift, could damage the vehicle. Always upshift when necessary while using Tap Shift.



Vehicles with Tap Shift have controls on the back of the steering wheel to manually shift the automatic transmission To enter Permanent Tap Shift Mode:

- With the gear lever in D (Drive), press the M (Manual Mode) button on the top of the gear lever. While in Tap Shift Mode, the M of the PRNDM section of the instrument cluster will become highlighted, and the current gear is indicated.
- Tap the left control to downshift and the right control to upshift. To shift to the lowest available gear, press and hold the left control.
- 3. To exit, press the M (Manual Mode) button a second time.

With the shift lever in D (Drive) and not in Permanent Tap Shift Mode, the tap shift controls will activate a temporary tap manual shift mode, allowing the transmission to be manually shifted. Automatic shifts return after no manual shifts have been done for seven to 10 seconds. The Temporary Tap Shift Mode can also be deactivated by holding the right upshift control briefly.

While using Tap Shift, the vehicle will have firmer, quicker shifting. You can 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 lower gear if the engine rpm is too high or to the next higher gear when the maximum engine rpm is reached.

If shifting is prevented for any reason, a SHIFT DENIED message will be displayed in the instrument cluster.

When accelerating the vehicle from a stop in snowy and icy conditions, it is suggested to shift into second gear. A higher gear allows the vehicle to gain more traction on slippery surfaces.

Drive Systems

All-Wheel Drive

Vehicles with this feature always send engine power to all four wheels. It is fully automatic, and adjusts itself as needed for road conditions.

Brakes

Antilock Brake System (ABS)

This vehicle has an Antilock Brake System (ABS), an advanced electronic braking system that helps prevent a braking skid.

When the vehicle begins to drive away, ABS checks itself. A momentary motor or clicking noise may be heard while this test is going on, and it may even be noticed that the brake pedal moves a little. This is normal.



If there is a problem with ABS, this warning light stays on. See *Antilock Brake System (ABS) Warning Light*

⇒ 130.

If driving safely on a wet road and it becomes necessary to slam on the brakes and continue braking to avoid a sudden obstacle, a computer senses the wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each wheel.

ABS can change the brake pressure to each wheel, as required, faster than any driver could. This can help you steer around the obstacle while braking hard.

As the brakes are applied, the computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: ABS does not change the time needed to get a foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, there will not be enough time to apply the brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even with ABS.

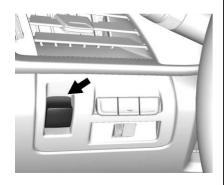
Using ABS

Do not pump the brakes. Just hold the brake pedal down firmly and let ABS work. You may hear the ABS pump or motor operating and feel the brake pedal pulsate. This is normal.

Braking in Emergencies

ABS allows you to steer and brake at the same time. In many emergencies, steering can help more than even the very best braking.

Electric Parking Brake



The vehicle has an Electric Parking Brake (EPB). The EPB can always be activated, even if the ignition is off. To prevent draining the battery, avoid repeated cycles of the EPB system when the engine is not running.

The system has a Electric Parking Brake light, and a Escretic Parking Brake light.

See Electric Parking Brake Light

⇒ 130
and Service Electric Parking Brake Light

⇒ 130.

Before leaving the vehicle, check for the (P) light to ensure that the parking brake is applied.

EPB Apply

To apply the EPB:

- Be sure the vehicle is at a complete stop.
- Lift up the EPB switch momentarily.

The (P) light will flash and then stay on once the EPB is fully applied. If the (P) light flashes continuously, then the EPB is only partially applied

or there is a problem with the EPB. A DIC message will display. Release the EPB and try to apply it again. If the light does not come on, or keeps flashing, have the vehicle serviced. Do not drive the vehicle if the \bigcirc light is flashing. See your dealer. See *Electric Parking Brake Light* \Leftrightarrow 130.

If the Plight is on, press the EPB switch and hold it. Continue to hold the switch until the Plight remains on. If the Plight remains on, see your retailer.

If the EPB is applied while the vehicle is moving, the vehicle will decelerate as long as the switch is pressed. If the switch is pressed until the vehicle comes to a stop, the EPB will remain applied.

The vehicle may automatically apply the EPB in some situations when the vehicle is not moving. This is normal, and is done to periodically check the correct operation of the EPB system.

If the EPB fails to apply, block the rear wheels to prevent vehicle movement.

EPB Release

To release the EPB:

- 1. Turn the ignition on or to ACC/ ACCESSORY.
- 2. Apply and hold the brake pedal.
- 3. Press the EPB switch momentarily.

The EPB is released when the (P) light is off.

If the Plight is on, release the EPB by pressing and holding the EPB switch. Continue to hold the switch until the Plight is off. If either light stays on after release is attempted, see your dealer.

Caution

Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Make sure that the parking brake is fully released and the brake warning light is off before driving.

Automatic EPB Release

The EPB will automatically release if the vehicle is running, placed into gear and an attempt is made to drive away. Avoid rapid acceleration when the EPB is applied, to preserve parking brake lining life.

Brake Assist

This vehicle has a brake assist feature designed to assist the driver in stopping or decreasing vehicle speed in emergency driving conditions. This feature uses the stability system hydraulic brake control module to supplement the power brake system under conditions where the driver has quickly and forcefully applied the brake pedal in an attempt to quickly stop or slow down the vehicle. The stability system hydraulic brake control module increases brake pressure at each corner of the vehicle until the ABS activates. Minor brake pedal pulsation or pedal movement during this time is normal and the driver should continue to apply the brake pedal as the driving situation dictates. The brake assist feature will

automatically disengage when the brake pedal is released or brake pedal pressure is quickly decreased.

Hill Start Assist (HSA)

Hill Start Assist (HSA) will activate when the vehicle is stopped on a moderate to steep grade to help prevent it from rolling in the unintended direction.

After the brake pedal has been released and before the accelerator pedal has been pressed, HSA uses braking pressure to hold the vehicle stationary.

If HSA is holding the vehicle, a DIC message displays.

The vehicle will roll if in a drive gear and facing downhill, or in R (Reverse) and facing uphill.

Once HSA is active it will hold the vehicle, unless the driver door is opened or the driver seat belt is unbuckled prior to releasing the brake pedal.

Ride Control Systems

Traction Control/Electronic Stability Control

The vehicle has a Traction Control System (TCS) and StabiliTrak, 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, the system brakes the spinning wheel(s) and/or reduces engine power to limit wheel spin.

StabiliTrak activates when the computer senses a difference between the intended path and the direction the vehicle is actually travelling. StabiliTrak selectively applies braking pressure at any one of the vehicle's brakes to help steer the vehicle in the intended direction.

If cruise control is being used and TCS 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* ▷ 184 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.

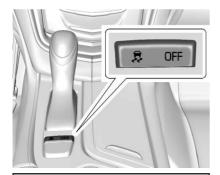
If either system fails to turn on or to activate, a message may display in the Driver Information Centre (DIC), and comes on and stays on to indicate that the system is inactive and is not assisting the driver in maintaining control. The vehicle is safe to drive, but driving should be adjusted accordingly.

If \$\overline{\o

- Stop the vehicle.
- 2. Turn the engine off and wait 15 seconds.
- Start the engine.

Drive the vehicle. if \mathbb{R} comes on and stays on, the vehicle may need more time to diagnose the problem. If the condition persists, see your dealer.

Turning the Systems Off and On



Caution

Do not repeatedly brake or accelerate heavily when TCS is off. The vehicle driveline could be damaged.

To turn off only TCS, press and release \mathcal{B}^{m} . The traction off light \mathcal{B}^{m} displays in the instrument cluster. A DIC message may display.

To turn TCS on again, press and release $\mathfrak{D}^{\#}$. The traction off light $\mathfrak{D}^{\#}$ displayed in the instrument cluster will turn off.

If TCS is limiting wheel spin when \mathfrak{F}^m is pressed, the system will not turn off until the wheels stop spinning.

To turn off both TCS and StabiliTrak, press and hold \mathcal{R}^{gr} until the traction off light \mathcal{L} and StabiliTrak OFF light come on and stay on in the instrument cluster. A DIC message may display.

To turn TCS and StabiliTrak on again, press and release . The traction off light and StabiliTrak OFF light in the instrument cluster turn off.

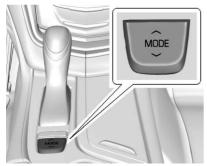
Adding accessories can affect the vehicle's performance. See *Accessories* and *Modifications* \Rightarrow 246.

Driver Mode Control

Driver Mode Control attempts to add a sportier feel, provide a more comfortable ride, or assist in different weather conditions or terrain. This system simultaneously changes the software settings of various sub-systems. Depending on the option package, available features and mode selected, the suspension, steering and powertrain will change settings in order to achieve the desired mode characteristics. If the vehicle is equipped with Magnetic Ride Control, selecting the various Driver Modes adjusts the ride of the vehicle to enhance the ride performance for the road conditions and the selected mode.

While in the Sport and/or Track Modes, the vehicle monitors driving behaviour and automatically enables Performance Shift Features when spirited driving is detected. These features maintain lower transmission gears to increase available engine braking and improve acceleration response. The vehicle will exit these features and return to normal Sport or

Track Mode operation after a short period when no spirited driving is detected.



Driver Mode Control Switch

The Driver Mode Control has three or four modes: Tour, Sport, Snow/Ice, and Track. The Track Mode is for V-Series models only. Press ∧ or V on the MODE switch on the centre console to make a mode selection. The first press of the switch will show the current mode. Subsequent presses will scroll though the available modes. The Tour and Sport Modes will feel similar on a smooth road. Select a new setting whenever driving conditions change.

Tour Mode

Use for normal city and highway driving to provide a smooth, soft ride.

Sport Mode

Use where road conditions or personal preference demand a more controlled response.

When selected, the Sport Mode indicator will display.

Competitive Driving Mode can be accessed through this mode.

Snow/Ice Mode

Use when more traction is needed during slippery conditions.

When selected, the Snow/Ice Mode indicator will display.

This feature is not intended for use when the vehicle is stuck in sand, mud, ice, snow, or gravel. If the vehicle becomes stuck, see *If the Vehicle Is Stuck* ▷ 184.

Track Mode (V-Series Only)

Use when maximum vehicle handling is desired.

When selected, the Track Mode indicator will display.

When in Track Mode, the automatic transmission and steering will function similar to Sport Mode. The accelerator pedal is adjusted to give maximum control during the highest level of spirited driving. The Magnetic Ride Control will be set to the optimum level for vehicle responsiveness. Competitive Driving Mode or PTM can be accessed through this mode.

There are six attributes that vary by mode as shown below. Not all vehicles have all features, depending on the vehicle options.

Modes:	TOUR Default	SPORT	SNOW/ICE	TRACK
Throttle Progression	Tour	Tour	Snow/Ice	Track
Transmission Shift Mode	Tour	Sport	Tour	Track
Steering (Assist Effort)	Tour	Sport	Tour	Track
Magnetic Ride Control (if equipped)	Tour	Sport	Tour	Track
Launch Control (V-Series Only)	NA	NA	NA	Available
Stability Control	Tour	Tour	Tour	Track
Performance Traction Management (if equipped) (V-Series Only)	NA	NA	NA	Available
Engine Sound Management	Tour	Sport	Tour	Track

Driver Mode Selector Attributes Affected

The Gauge Cluster Display is configured for each mode when linked (default):

Throttle Progression

Adjusts throttle sensitivity by selecting how quick or slow the throttle reacts to input.

- Snow/Ice The accelerator pedal will reduce engine torque at small pedal inputs. This allows better wheel control on slippery surfaces.
- Track The accelerator pedal is adjusted to give maximum control during the highest level of spirited driving.

Transmission Shift Mode

Sport or Track – Performance Mode Lift Foot (PMLF) allows the transmission to hold the current gear after a quick release of a heavily applied accelerator pedal. This provides greater engine braking and enhanced vehicle control without using the paddles. Performance Algorithm Shift (PAS) recognises aggressive cornering, heavy braking, and high acceleration to select and hold lower gears when not using paddles. The shifts are also firmer to increase the quickness of shifting.

Steering (Assist Effort)

Adjusts from a lighter steering feel in Tour Mode to reduced assist in Sport and Track Mode for more steering feel.

Magnetic Ride Control (if equipped)

Adjusts the shock dampening firmness from a comfort tune in Tour Mode to an optimized responsiveness tune in Sport and Track.

Launch Control (V-Series Only)

Available only in Track Mode for maximum "off-the-line" acceleration when in Competitive Driving Mode or PTM.

Stability Control

 Competitive Mode allows less computer control to permit some slide and drift and is selected with the button – only available in Track Mode. StabiliTrak can be turned off by pressing and holding the button for five seconds.

PTM (Performance Traction Management) (if equipped) (V-Series Only)

- · Available in Track Mode.
- There are five selectable settings.

Driver Mode Customization

The selections made in the Driving Mode menu overwrite the main vehicle mode selection via the buttons or switch on the center console. In order to customize and overwrite, the driver select one of the three settings by touching the infotainment display.

When in the customization screen for each system, select one of four options:

Auto (Follows the mode switch)

- Tour
- Sport
- Track

The default will be to follow the vehicle mode switch settings, but the main vehicle mode selection for the currently selected system can be overwritten using this menu. The settings selected in this menu will set the vehicle behavior in all selected vehicle modes, and will be retained over each ignition cycle. They do not have to be reset each time the vehicle is started.

Competitive Driving Mode

To select this optional handling mode, press &** quickly two times and the DIC will display the appropriate message. While in the Competitive Driving Mode, the traction off light and StabiliTrak OFF light * will come on in the instrument cluster. TCS does not limit wheel spin, the Electronic Limited-Slip Differential (eLSD) allows increased vehicle agility, and more effort is required to turn the steering

wheel. See "Limited-Slip Differential (V-Series Only)" later in this section. Adjust your driving accordingly.

Press 🐉 again, or turn the ignition to ACC/ACCESSORY and restart the vehicle, to turn TCS back on. The traction off light 🖨 and StabiliTrak OFF light 🍰 will go out in the instrument cluster.

Caution

When traction control is turned off or Competitive Driving Mode is active, it is possible to lose traction.

Performance Traction Management (V-Series Only)

Performance Traction Management (PTM) integrates the Traction Control, StabiliTrak, and Selective Ride Control systems to provide improved and consistent performance when cornering. The amount of available engine power is based on the mode selected, track conditions, driver skill, and the radius of each corner.



This light is on when the vehicle is in the PTM mode.

To select this optional handling mode, the vehicle mode must be Track. Then quickly press \mathfrak{F}^{or} on the center console two times. PERF TRAC 1 - WET ACTIVE HANDLING ON displays in the DIC.

When PTM is active, the up and down buttons will no longer change Drive Modes, but instead change PTM modes.

To select a mode while in PTM, press the Driver Mode Control/PTM buttons on the centre console.

To experience the performance benefit of this system, after entering a bend and at the point where normal acceleration occurs, fully push the accelerator pedal. The PTM system

will modify the level of engine power for a smooth and consistent corner exit.

The PTM system contains five modes. These modes are selected by pressing the Driver Mode Control/PTM buttons on the centre console. Scroll up or down through modes 1–5 by pressing the MODE up and down buttons The following is a DIC display description and the recommended usage of each mode:

PERF TRAC 1 - WET ACTIVE HANDLING ON

- Intended for all driver skill levels.
- Wet or damp conditions only not intended for use in heavy rain or standing water.
- StabiliTrak is on and engine power is reduced based on conditions.

PERF TRAC 2 - DRY ACTIVE HANDLING ON

- For use by less experienced drivers or while learning a new track.
- Dry conditions only.

 StabiliTrak is on and engine power is slightly reduced.

PERF TRAC 3 – SPORT ACTIVE HANDLING ON

- For use by drivers who are familiar with the track.
- Dry conditions only.
- Requires more driving skill than mode 2.
- StabiliTrak is on and more engine power is available than in mode 2.

PERF TRAC 4 - SPORT ACTIVE HANDLING OFF

- For use by drivers who are familiar with the track.
- Dry conditions only.
- Requires more driving skill than modes 2 or 3.
- StabiliTrak is off and available engine power is the same as mode 3.

PERF TRAC 5 - RACE ACTIVE HANDLING OFF

- For use by experienced drivers who are familiar with the track.
- Dry conditions only.
- Requires more driving skill than in other modes.
- StabiliTrak is off and engine power is available for maximum cornering speed.

Press and release ** to turn off PTM and return to the traction control and StabiliTrak systems. The traction off light ** and StabiliTrak OFF light ** will go out.

Launch Control (V-Series Only)

A Launch Control feature is available, within Competitive Driving Mode or Performance Traction Management (V-Series), 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 60 and quarter mile times are desirable.

Launch Control is only available when the following criteria are met:

- Competitive Driving Mode is selected or any of the Performance Traction Management modes are selected (V-Series). The TCS light comes on the instrument panel and the appropriate DIC message displays.
- The vehicle is not moving.
- The steering wheel is pointing straight.
- The brake pedal must be firmly pressed to the floor, equivalent to a panic brake event.
- The accelerator pedal is rapidly applied to wide open throttle. (If the vehicle rolls due to wide open throttle, release the throttle, press the brake pedal more firmly, and re-apply the accelerator 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. Allow the engine rpm to stabilise. A smooth, quick release of the brake pedal, while maintaining the fully pressed accelerator pedal, will manage wheel slip.

After the vehicle is launched, the system continues in Competitive **Driving Mode or Performance Traction** Management (V-Series).

Competitive Driving Mode, PTM, 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 Differential (V-Series Only)

If equipped, the Electronic Limited-Slip Differential (eLSD) is automatically activated. eLSD actively monitors vehicle sensors and driver inputs to determine the amount of change for the conditions. With eLSD, the vehicle has:

- Enhanced high-speed control.
- Improved traction through corners, allowing more acceleration
- More precise steering.
- Increased vehicle agility.
- Integration with StabiliTrak.

For vehicles with eLSD, driven under severe conditions, the rear axle fluid should be changed.

and Scheduled Maintenance \$ 319.

Cruise Control



⚠ Warning

Cruise control can be dangerous where you cannot drive safely at a steady speed. Do not use cruise control on winding roads or in heavy traffic.

Cruise control can be dangerous on slippery roads. On such roads, fast changes in tyre traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

With cruise control, a speed of about 40 km/h (25 mph) or more can be maintained without keeping your foot on the accelerator. Cruise control does not work at speeds below about 40 km/h (25 mph).

If the StabiliTrak® system begins to limit wheel spin while using cruise control, the cruise control automatically disengages. See Traction Control/Electronic Stability Control \Rightarrow 202. If a collision alert occurs when

cruise control is activated, cruise control is disengaged. See Forward Collision Alert (FCA) System

→ 226. When road conditions allow the cruise control to be safely used, cruise control can be turned back on.

Cruise control will disengage if either TCS or StabiliTrak is turned off.

If the brakes are applied, the cruise control disengages.



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

+RES: If there is a set speed in memory, press the control up briefly to resume to that speed or press and hold to accelerate. If the cruise control is already active, use to increase vehicle speed. To increase speed by 1 km/h (1 mph), press +RES up to the first detent. To increase speed to the next 5 km/h (5 mph) mark on the speedometer, press +RES up to the second detent.

SET-: Press the control down briefly to SET- to set the speed and activate cruise control. If cruise control is already active, use to decrease vehicle speed. To decrease speed by 1 km/h (1 mph), press SET- down to the first detent. To decrease speed to the next 5 km/h (5 mph) mark on the speedometer, press SET- down to the second detent.

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

Setting Cruise Control

If the 5 button is on when not in use, SET- or +RES could get pressed and go into cruise when not desired. Keep the 5 button off when cruise is not being used.

- 1. Press (8).
- 2. Get up to the desired speed.
- 3. Press and release SET-.
- 4. Remove your foot from the accelerator.

When the cruise control has been set to the desired speed, a green cruise control indicator appears on the instrument cluster and a cruise set speed message appears on the Head-Up Display (HUD), if equipped.

Resuming a Set Speed

If the cruise control is set at a desired speed and then the brakes are applied or \bigotimes is pressed, the cruise control is disengaged without erasing the set speed from memory.

Once the vehicle speed reaches about 40 km/h (25 mph) or more, press +RES up to the first detent briefly. The vehicle returns to the previous set speed.

Increasing Speed While Cruise Control is at a Set Speed

If the cruise control system is already activated:

- Press and hold +RES up until the desired speed is reached, then release it
- To increase vehicle speed in small increments, briefly press +RES up to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) faster.
- To increase vehicle speed in larger increments, briefly press +RES up to the second detent. For each press, the vehicle speed increases to the next 5 km/h (5 mph) mark on the speedometer.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇒ 119. The increment value used depends on the units displayed.

Reducing Speed While Cruise Control is at a Set Speed

If the cruise control system is already activated:

- Press and hold SET- down until the desired lower speed is reached, then release it.
- To decrease the vehicle speed in small increments, briefly press SET- down to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) slower.
- To decrease the vehicle speed in larger increments, briefly press SET- down to the second detent.
 For each press, the vehicle speed decreases to the next 5 km/h
 (5 mph) mark on the speedometer.

The cruise control system may automatically brake to slow the vehicle down (CTS model only). The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* \$\phi\$ 119. 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 will slow down to the previously set cruise speed. While pressing the accelerator pedal or shortly following the release to override cruise control, briefly pressing SET— will result in cruise control set to the current vehicle speed.

Using Cruise Control on Hills

How well the cruise control will work on hills depends upon the vehicle speed, load, and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain the vehicle speed. When going downhill, the cruise control system may automatically brake to slow the vehicle down (CTS model only). Also, you may have to

brake or shift to a lower gear to keep the vehicle speed down. If the brake pedal is applied, cruise control disengages.

Ending Cruise Control

There are four ways to end cruise control:

- Step lightly on the brake pedal.
- Press ☒.
- Shift the transmission to N (Neutral).
- Press (6).

Erasing Speed Memory

The cruise control set speed is erased from memory if (S) is pressed or if the ignition is turned off.

Adaptive Cruise Control

If equipped with Adaptive Cruise Control (ACC), it allows the driver to select the cruise control set speed and following gap. Read this entire section before using this system. The following gap is the following time between your vehicle and a vehicle detected directly ahead in your path moving in the same direction. If no vehicle is detected in your path, ACC works like regular cruise control. ACC uses camera and radar sensors. See *Declaration of Conformity* ♀ 334.

If a vehicle is detected in your path, ACC can apply acceleration or limited, moderate braking to maintain the selected following gap. To disengage ACC, apply the brake. If ACC is controlling your vehicle speed when the Traction Control System (TCS) or electronic stability control system activates, the ACC may automatically disengage. See *Traction Control/ Electronic Stability Control ⇒ 202*. When road conditions allow ACC to be safely used, the ACC can be turned back on.

ACC will not engage if the TCS or electronic stability control system is disabled.

⚠ Warning

ACC has limited braking ability and may not have time to slow the vehicle down enough to avoid a collision with another vehicle you are following. This can occur when vehicles suddenly slow or stop ahead, or enter your lane. Also see "Alerting the Driver" in this section. Complete attention is always required while driving and you should be ready to take action and apply the brakes. See *Defensive Driving* \$\to\$ 175.

Marning

ACC will not detect or brake for children, pedestrians, animals, or other objects.

Do not use ACC when:

- On winding and hilly roads or when the sensors are blocked by snow, ice, or dirt. The system may not detect a vehicle ahead. Keep the entire front of the vehicle clean.
- Visibility is low, such as in mist, rain, or snow conditions.
 ACC performance is limited under these conditions.
- On slippery roads where fast changes in tyre traction can cause excessive wheel slip.



(S): Press to turn the system on or off. A white cruise control indicator comes on.

+RES: Press the control up briefly to resume the previous set speed or to increase vehicle speed if ACC is already activated. To increase speed by 1 km/h (1 mph), press +RES up to the first detent. To increase speed to the next 5 km/h (5 mph) mark on the speedometer, press +RES up to the second detent.

SET-: Press the control down briefly to set the speed and activate ACC or to decrease vehicle speed if ACC is already activated. To decrease speed

by 1 km/h (1 mph), pressSET- down to the first detent. To decrease speed to the next 5 km/h (5 mph) mark on the speedometer, press SET- down to the second detent.

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

: Press to select a following gap time (or distance) setting for ACC of Far, Medium, or Near.

Switching Between ACC and Regular Cruise Control

To switch between ACC and regular cruise control, press and hold ⋈. A Driver Information Display (DIC) message displays.





ACC Indicator

Regular Cruise Control Indicator

When ACC is engaged, a green indicator will be lit on the instrument cluster. When the regular cruise

control is engaged, a green (5) indicator will be lit on the instrument cluster.

When the vehicle is turned on, the cruise control mode will be set to the last mode used before the vehicle was turned off.

⚠ Warning

Always check the cruise control indicator on the instrument cluster to determine which mode cruise control is in before using the feature. If ACC is not active, the vehicle will not automatically brake for other vehicles, which could cause an accident if the brakes are not applied manually. You and others could be seriously injured or killed.

Setting Adaptive Cruise Control

If the cruise control is on when not in use, the cruise on/off control could get pressed and cruise control could

become active when not desired. Keep cruise control button off when cruise is not being used.

Select the set speed desired for cruise. This is the vehicle speed when no vehicle is detected in its path.

ACC will not set at a speed less than 25 km/h (16 mph), although it can be resumed when driving at lower speeds.

To set ACC:

- 1. Press (6).
- Get up to the desired speed.
- Press and release the SET– control.
- 4. Remove foot from the accelerator.

After ACC is set, it may immediately apply the brakes if a vehicle ahead is detected closer than the selected following gap.



The ACC indicator displays in the instrument cluster and Head-Up Display (HUD) (if equipped). When the ACC is active, the indicator turns green.

Be mindful of speed limits, surrounding traffic speeds, and weather conditions when selecting the set speed.

Resuming a Set Speed

If the ACC is set at a desired speed and then the brakes are applied, the ACC is disengaged without erasing the set speed from memory.

To begin using ACC again, press +RES up briefly. The vehicle returns to the previous set speed.

Increasing Speed While ACC is at a Set Speed

If ACC is already activated, do one of the following:

- Use the accelerator to get to the higher speed. Press SET- down.
 Release the control and the accelerator pedal. The vehicle will now cruise at the higher speed.
 - When the accelerator pedal is pressed, ACC will not brake because it is overridden. The ACC indicator will turn blue on the instrument cluster and the Head-Up Display (HUD).
- Press and hold +RES up until the desired set speed appears on the display, then release it.
- To increase vehicle speed in small increments, press +RES up to the first detent. For each press, the vehicle goes 1 km/h (1 mph) faster.
- To increase vehicle speed in larger increments, press +RES up to the second detent. For each press, the

vehicle speed increases to the next 5 km/h (5 mph) mark on the speedometer.

When it is determined that there is no vehicle ahead or the vehicle ahead is beyond the selected following gap, then the vehicle speed will increase to the set speed.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ▷ 119. The increment value used depends on the units displayed.

Reducing Speed While ACC is at a Set Speed

If ACC is already activated, do one of the following:

- Use the brake to get to the desired lower speed. Press SET- down and release the accelerator pedal. The vehicle will now cruise at the lower speed.
- Press and hold SET- down until the desired lower speed is reached, then release it.

- To decrease the vehicle speed in smaller increments, press SETdown to the first detent. For each press, the vehicle goes about 1 km/h (1 mph) slower.
- To decrease the vehicle speed in larger increments, press SETdown to the second detent. For each press, the vehicle speed decreases to the next 5 km/h (5 mph) mark on the speedometer.

The speedometer reading can be displayed in either English or metric units. See *Instrument Cluster* ⇔ 119. The increment value used depends on the units displayed.

Selecting the Follow Distance

When a slower moving vehicle is detected ahead within the selected following gap, ACC will adjust the vehicle's speed and attempt to maintain the follow distance gap selected.

Press on the steering wheel to adjust the following gap. Each press cycles the gap button through three settings: Far, Medium, or Near.

When pressed, the current gap setting displays briefly on the instrument cluster and HUD, if equipped.
Subsequent presses cycle the gap button through three settings: Far, Medium, or Near. The gap setting will be maintained until it is changed.

Since each gap setting corresponds to a following time (Far, Medium, or Near), the following distance will vary based on vehicle speed. The faster the vehicle speed, the further back your vehicle will follow a vehicle detected ahead. Consider traffic and weather conditions when selecting the following gap. The range of selectable gaps may not be appropriate for all drivers and driving conditions.

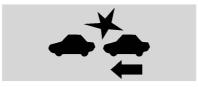
Changing the gap setting automatically changes the alert timing sensitivity (Far, Medium, or Near) for the Forward Collision Alert (FCA) feature. See Forward Collision Alert (FCA) System

⇒ 226.

Alerting the Driver



Without Head-Up Display



With Head-Up Display

If ACC is engaged, driver action may be required when ACC cannot apply sufficient braking because of approaching a vehicle too rapidly.

When this condition occurs, a series of red lights or the collision alert symbol on the HUD, if equipped, will flash on the windscreen. Either eight beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. See "Collision/ Detection Systems" under *Vehicle Personalisation* ♀ 143.

See *Defensive Driving* \Rightarrow 175.

Approaching and Following a Vehicle



The vehicle ahead symbol is in the instrument cluster and HUD display, if equipped.

The vehicle ahead symbol only displays when a vehicle is detected in your vehicle's path moving in the same direction.

If this symbol is not displaying, ACC will not respond to or brake to vehicles ahead.

ACC automatically slows the vehicle down and adjusts vehicle speed to follow the vehicle in front at the selected follow gap. The vehicle speed increases or decreases to follow the vehicle in front of you, but will not exceed the set speed. It may apply limited braking, if necessary. When braking is active, the brake lamps will come on. The automatic braking may feel or sound different than if the brakes were applied manually. This is normal.

Stationary or Very Slow-Moving Objects

🗥 Warning

ACC may not detect and react to stopped or slow-moving vehicles ahead of you. For example, the system may not brake for a vehicle it has never detected moving. This can occur in stop-and-go traffic or when a vehicle suddenly appears due to a vehicle ahead changing lanes. Your vehicle may not stop and could cause a crash. Use caution when using ACC. Your complete attention is always required while driving and you should be ready to take action and apply the brakes.

ACC Automatically Disengages

ACC may automatically disengage and the driver will need to manually apply the brakes to slow the vehicle if:

- The sensors are blocked.
- The Traction Control System (TCS) or electronic stability control system has activated or been disabled.
- The radar falsely reports blockage when driving in a desert or remote area with no other vehicles or roadside objects. A DIC message may display to indicate that ACC is temporarily unavailable.
- There is a fault in the system.

The ACC indicator will turn white when ACC is no longer active.

Notification to Resume ACC

ACC will maintain a follow gap behind a detected vehicle and slow your vehicle to a stop behind that vehicle.

If the stopped vehicle ahead has driven away and ACC has not resumed, the vehicle ahead symbol will flash as a reminder to check traffic before proceeding. In addition, the left and right sides of the Safety Alert Seat will pulse three times, or three beeps will sound. See "Alert Type" and "Go Notifier" in "Collision/ Detection Systems" under *Vehicle Personalisation*

↑ 143.

When the vehicle ahead drives away, press +RES or the accelerator pedal to resume ACC. If stopped for more than two minutes or if the driver door is opened and the driver seat belt is unbuckled, the ACC automatically applies the Electric Parking Brake to hold the vehicle. The EPB status light will turn on. See *Electric Parking Brake* ⇒ 200. To release the EPB, depress the accelerator pedal.

A DIC warning message may display indicating to shift to P (Park) before exiting the vehicle.



If ACC has stopped the vehicle, and if ACC is disengaged, turned off, or cancelled, the vehicle will no [Continued]

Warning (Continued)

longer be held at a stop. The vehicle can move. When ACC is holding the vehicle at a stop, always be prepared to manually apply the brakes.



Leaving the vehicle without placing it in P (Park) can be dangerous. Do not leave the vehicle while it is being held at a stop by ACC. Always place the vehicle in P (Park) and turn off the ignition before leaving the vehicle.

ACC Override

If using the accelerator pedal while ACC is active, the ACC indicator turns blue on the instrument cluster and in the HUD (if equipped) to indicate that automatic braking will not occur. ACC will resume operation when the accelerator pedal is not being pressed.



The ACC will not automatically apply the brakes if your foot is resting on the accelerator pedal. You could crash into a vehicle ahead of you.

Bends in the Road

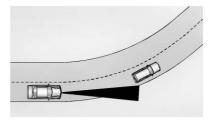


On bends, ACC may not detect a vehicle ahead in your lane. You could be startled if the vehicle accelerates up to the set speed, especially when following a vehicle exiting or entering exit ramps. You could lose control of the vehicle or crash. Do not use ACC while driving on an entrance or exit ramp. Always be ready to use the brakes if necessary.

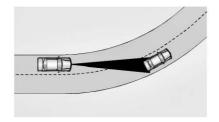
⚠ Warning

On bends, ACC may respond to a vehicle in another lane, or may not have time to react to a vehicle in your lane. You could crash into a vehicle ahead of you, or lose control of your vehicle. Give extra attention in bends and be ready to use the brakes if necessary. Select an appropriate speed while driving in bends.

ACC may operate differently in a sharp bend. It may reduce the vehicle speed if the bend is too sharp.



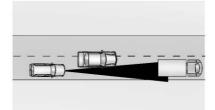
When following a vehicle and entering a bend, ACC may not detect the vehicle ahead and accelerate to the set speed. When this happens the vehicle ahead symbol will not appear.



ACC may detect a vehicle that is not in your lane and apply the brakes.

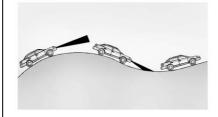
ACC may occasionally provide an alert and/or braking that is considered unnecessary. It could respond to vehicles in different lanes, signs, guardrails, and other stationary objects when entering or exiting a bend. This is normal operation. The vehicle does not need service.

Other Vehicle Lane Changes



ACC will not detect a vehicle ahead until it is completely in the lane. The brake may need to be manually applied.

Do Not Use ACC on Hills and When Towing a Trailer



Do not use ACC when driving on steep hills or when towing a trailer. ACC will not detect a vehicle in the lane while driving on steep hills. The driver will often need to take over acceleration and braking on steep hills, especially when towing a trailer. If the brakes are applied, the ACC disengages.

Ending ACC

There are three ways to disengage ACC:

- Step lightly on the brake pedal.
- Press ⋈.
- Press (5).

Erasing Speed Memory

The cruise control set speed is erased from memory if (5) is pressed or if the ignition is turned off.

Cleaning the Sensing System

The camera sensor on the windscreen behind the rear-view mirror and the radar sensors on the front of the vehicle can become blocked by snow, ice, dirt, or mud. These areas need to be cleaned for ACC to operate properly.

For cleaning instructions, see "Washing the Vehicle" under *Exterior Care* ⇔ 309.

System operation may also be limited under snow, heavy rain, or road spray conditions.

Driver Assistance Systems

This vehicle may have features that work together to help avoid crashes or reduce crash damage while driving, reversing, and parking. Read this entire section before using these systems.

riangle Warning

Do not rely on the Driver Assistance Systems. These systems do not replace the need for paying attention and driving safely. You may not hear or feel alerts or warnings provided by these systems. Failure to use proper care when driving may result in injury, death, or vehicle damage. See Defensive Driving \$\Display\$ 175.

Under many conditions, these systems will not:

 Detect children, pedestrians, bicyclists, or animals.

(Continued)

Warning (Continued)

- Detect vehicles or objects outside the area monitored by the system.
- Work at all driving speeds.
- Warn you or provide you with enough time to avoid a crash.
- Work under poor visibility or bad weather conditions.
- Work if the detection sensor is not cleaned or is covered by ice, snow, mud, or dirt.
- Work if the detection sensor is covered up, such as with a sticker, magnet, or metal plate.
- Work if the area surrounding the detection sensor is damaged or not properly repaired.

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

Audible or Safety Alert Seat

If equipped with the Safety Alert Seat, the driver seat cushion may provide a vibrating pulse alert instead of beeping. To change this, see "Collision/Detection Systems" under *Vehicle Personalisation*

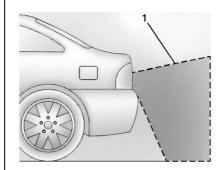
143.

Assistance Systems for Parking or Reversing

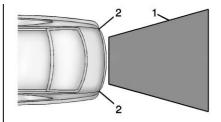
If equipped, the Rear Vision Camera (RVC), Rear Parking Assist (RPA), Front Parking Assist (FPA), Surround Vision, Front Vision Camera, Curb View Camera, Rear Cross Traffic Alert (RCTA), and Automatic Parking Assist (APA) may help the driver park or avoid objects. Always check around the vehicle when parking or backing.

Rear Vision Camera (RVC)

When the gear is changed into R (Reverse), the RVC displays an image of the area behind the vehicle on the infotainment display. The previous screen displays when the vehicle is shifted out of R (Reverse) after a short delay. To return to the previous screen sooner, press any button on the infotainment system, shift into P (Park), or reach a vehicle speed of approximately 12 km/h (8 mph).



1. View Displayed by the Camera



- 1. View Displayed by the Camera
- 2. Corners of the Rear Bumper

Displayed images may be farther or closer than they appear. The area displayed is limited and objects that are close to either corner of the bumper or under the bumper do not display.

A warning triangle may display to show that Rear Parking Assist (RPA) has detected an object. This triangle changes from amber to red and increases in size the closer the object.

Surround Vision (CTS Only)

If equipped, Surround Vision displays an image of the area surrounding the vehicle, along with the front or rear camera views on the infotainment display. The front camera is in the grille or near the front emblem, the side cameras are on the bottom of the outside rearview mirrors, and the rear camera is above the number plate.

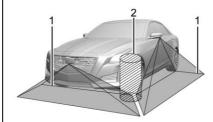
⚠ Warning

The Surround Vision cameras have blind spots and will not display all objects near the corners of the vehicle. Folding side mirrors that are out of position will not display surround view correctly. Always check around the vehicle when parking or backing.



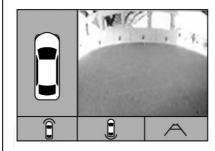
1. Views Displayed by the Surround Vision Cameras

2. Area Not Shown



- 1. Views Displayed by the Surround Vision Cameras
- 2. Area Not Shown

Front Vision Camera (CTS Only)



If equipped, a view of the area in front of the vehicle shows on the infotainment display. The view displays after shifting from R (Reverse) to a forward gear, or by pressing CAMERA in the centre stack, and when the vehicle is moving forward slower than 8 km/h (5 mph). If equipped, the front view camera also displays when the Front Parking Assist system detects an object within 30 cm (12 in).

Curb View Camera (CTS-V Series Only)



If equipped, a view of the area in front of the vehicle shows on the infotainment display. The display shows a top down view at the top of the screen and left and right front camera images on the bottom. The

front views display after shifting from R (Reverse) to a forward gear, or by pressing CAMERA in the centre console, and when the vehicle is moving forward slower than 8 km/h (5 mph). If equipped, the front camera images also display when the Parking Assist system detects an object within 60 cm (24 in). The front cameras are on both sides of the front fascia.

\triangle Warning

The camera(s) do not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object outside of the cameras' field of view, below the bumper, or under the vehicle. Shown distances may be different from actual distances. Do not drive or park the vehicle using only these camera(s). Always check behind and around the vehicle before driving. Failure to use proper care may result in injury, death, or vehicle damage.

Parking Assist

With RPA, and if equipped with FPA, as the vehicle moves at speeds of less than 8 km/h (5 mph) the sensors on the bumpers may detect objects up to 2.5 m (8 ft) behind and 1.2 m (4 ft) in front of the vehicle within a zone 25 cm (10 in) high off the ground and below bumper level. These detection distances may be shorter during warmer or humid weather. Blocked sensors will not detect objects and can also cause false detections. Keep the sensors clean of mud, dirt, snow, ice, and slush; and clean sensors after a car wash in freezing temperatures.

⚠ Warning

The Parking Assist system does not detect children, pedestrians, bicyclists, animals, or objects located below the bumper or that are too close or too far from the vehicle. It is not available at speeds greater than 8 km/h (5 mph). To prevent injury, death or vehicle

(Continued)

Warning (Continued)

damage, even with Parking Assist, always check the area around the vehicle and check all mirrors before moving forward or reversing.



The instrument cluster may have a parking assist display with bars that show "distance to object" and object location information for the Parking Assist system. As the object gets closer, more bars light up and the bars change colour from yellow to amber to red.

When an object is first detected in the rear, one beep will be heard from the rear, or both sides of the Safety Alert Seat will pulse two times. When an

object is very close (<0.6 m (2 ft) in the vehicle rear, or <0.3 m (1 ft) in the vehicle front), five beeps will sound from the front or rear depending where the object is detected, or both sides of the Safety Alert Seat will pulse five times. Beeps for FPA are higher pitched than for RPA.

Rear Cross Traffic Alert (RCTA)

If equipped, RCTA shows a red warning triangle with a left or right pointing arrow on the infotainment display to warn of traffic coming from the left or right. This system detects objects coming from up to 20 m (65 ft) from the left or right-hand side of the vehicle. When an object is detected, either three beeps sound from the left or right or three Safety Alert Seat pulses occur on the left or right side, depending on the direction of the detected vehicle.

Use caution while reversing when towing a trailer, as the RCTA detection zones that extend out from the back of the vehicle do not move further back when a trailer is towed.

Turning the Features On or Off



Press P on the center stack to turn on or off the Front and Rear Parking Assist and Rear Cross Traffic Alert system at the same time. The indicator light next to the button comes on when the features are on and turns off when the features have been disabled.

Turn off parking assist when towing a trailer.

To turn the rear parking assist symbols on or off, see "Rear Camera" under Vehicle Personalisation

⇒ 143.

RCTA can also be turned on or off through vehicle personalisation. See "Collision/Detection Systems" under

Automatic Parking Assist (APA)

If equipped, APA searches for and steers the vehicle into parallel and perpendicular parking spots. When using APA, you must still change gears, and control the brakes and accelerator. A display and audible beeps help to guide parking maneuvers.



⚠ Warning

APA does not apply the brakes. APA may not detect objects in the parking space, objects that are soft or narrow, objects high off the ground such as flat-bed trucks, or objects below ground level such as large potholes. Always verify that the parking space is appropriate for parking a vehicle. APA does not respond to changes in the parking space, such as movement of an adjacent vehicle, or a person or object entering the parking space. APA does not detect or avoid traffic that is behind or alongside of the

(Continued)

Warning (Continued)

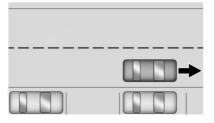
vehicle. Always be prepared to stop the vehicle during the parking manoeuvre.

Press Pon on the centre console to enable the system to search for a parking space that is large enough and within 1.5 m (5 ft) of the vehicle. The vehicle speed must be below 30 km/h (18 mph). The system cannot:

- Detect whether it is a legal parking space.
- Park exactly lined up with the vehicle next to it if the spot is approached at an angle or if the parking space is angled.
- Park exactly centred in a spot that is marked too large.
- Always detect short curbs.

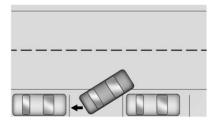
When enabled, APA searches for parallel parking spaces to the right of the vehicle. To search for a parking space to the left, turn on the left indicator or, if available, change the

side selection in the infotainment display. To switch the parking mode between parallel and perpendicular, press and hold P^{ND}_{\square} during the search process or, if available, change the parking mode in the infotainment display.



After completely passing a large enough space, an audible beep occurs and a red stop symbol is displayed.

If the vehicle is in R (Reverse), but does not steer into the expected space, this may be because the system is manoeuvring the vehicle into a previously detected space. The APA system does not need service.



APA will instruct the vehicle to stop once a large enough space is found. Follow the displayed instructions. When instructed to drive in reverse, shift to R (Reverse) to engage automatic steering. The steering wheel will briefly vibrate as a reminder to remove hands from the steering wheel. Check surroundings and continue braking or accelerating as needed, and be prepared to stop to avoid vehicles, pedestrians, or objects.

If the vehicle exceeds 10 km/h (6 mph), APA is automatically disengaged and automatic steering will turn off. A progress arrow displays the status of the parking maneuver. Depending on the space size, additional manoeuvres may be required, and there will be additional

instructions. When changing gears, allow the automatic steering to complete before continuing the parking manoeuvre. Upon successful completion of a manoeuvre, APA will beep and display a PARKING COMPLETE message. Place the vehicle in P (Park).

APA may automatically disengage if:

- The steering wheel is used by the driver.
- The maximum allowed speed is exceeded.
- There is a failure with the APA system.
- Electronic stability control or antilock brakes are activated.
- A high priority vehicle message is displayed in the DIC.

To cancel APA, press P again.

When the System Does Not Seem to **Work Properly**

The APA system may require a short period of driving along bends to calibrate.

Assistance Systems for Driving

If equipped, when driving the vehicle in a forward gear, Forward Collision Alert (FCA), Lane Departure Warning (LDW), Lane Keep Assist (LKA), Side Blind Zone Alert (SBZA), Lane Change Alert (LCA), and/or Forward Automatic Braking (FAB) can help to avoid a crash or reduce crash damage.

Forward Collision Alert (FCA) System

If equipped, the FCA system may help to avoid or reduce the harm caused by front-end crashes. When approaching a vehicle ahead too quickly, FCA provides a flashing red alert on the windscreen and rapidly beeps or pulses the Safety Alert Seat. FCA also lights an amber visual alert if following another vehicle much too closely.

FCA detects vehicles within a distance of approximately 60 m (197 ft) and operates at speeds above 40 km/h (25 mph). If the vehicle has Adaptive Cruise Control (ACC), it can detect

vehicles to distances of approximately 110 m (360 ft) and operates at all speeds. See Adaptive Cruise Control \$ 212



⚠ Warning

FCA is a warning system and does not apply the brakes. When approaching a slower-moving or stopped vehicle ahead too rapidly, or when following a vehicle too closely, FCA may not provide a warning with enough time to help avoid a crash. It also may not provide any warning at all. FCA does not warn of pedestrians, animals, signs, crash barriers, bridges, construction barrels, or other objects. Be ready to take action and apply the brakes. See

FCA can be disabled with either the FCA steering wheel control or, if equipped, through vehicle personalisation. See "Collision/ Detection Systems" under Vehicle Personalisation \Rightarrow 143.

Detecting the Vehicle Ahead



FCA warnings will not occur unless the FCA system detects a vehicle ahead. When a vehicle is detected, the vehicle ahead indicator will display green. Vehicles may not be detected on bends, motorway exit ramps, or hills, due to poor visibility; or if a vehicle ahead is partially blocked by pedestrians or other objects. FCA will not detect another vehicle ahead until it is completely in the driving lane.

Marning

FCA does not provide a warning to help avoid a crash, unless it detects a vehicle. FCA may not detect a vehicle ahead if the FCA sensor is blocked by dirt, snow, or ice, or if [Continued]

Warning (Continued)

the windscreen is damaged. It may also not detect a vehicle on winding or hilly roads, or in conditions that can limit visibility such as fog, rain, or snow, or if the headlamps or windscreen are not cleaned or in proper condition. Keep the windscreen, headlamps, and FCA sensors clean and in good repair.

Collision Alert



With Head-Up Display



Without Head-Up Display

When your vehicle approaches another detected vehicle too rapidly, the red FCA display will flash on the windscreen. Also, eight high-pitched beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. When this Collision Alert occurs, the brake system may prepare for driver braking to occur more rapidly which can cause a brief, mild deceleration. Continue to apply the brake pedal as needed. Cruise control may be disengaged when the Collision Alert occurs.

Tailgating Alert



The vehicle ahead indicator will display amber when you are following a detected vehicle ahead much too closely.

Selecting the Alert Timing



The Collision Alert control is on the steering wheel. Press 🛬 to set the FCA timing to Far, Medium, Near, or on some vehicles. Off. The first button press shows the current setting on the DIC. Additional button presses will change this setting. The chosen setting will remain until it is changed and will affect the timing of both the Collision Alert and the Tailgating Alert features. The timing of both alerts will vary based on vehicle speed. The faster the vehicle speed, the farther away the alert will occur. Consider traffic and weather conditions when selecting the alert timing. The range of selectable alert timing may not be appropriate for all drivers and driving conditions.

If your vehicle is equipped with Adaptive Cruise Control (ACC), changing the FCA timing setting automatically changes the ACC following gap setting (Far, Medium, or Near).

Following Distance Indicator

The following distance to a moving vehicle ahead in your path is indicated in following time in seconds on the Driver Information Center (DIC). See Driver Information Centre (DIC) ⇒ 136. The minimum following time is 0.5 seconds away. If there is no vehicle detected ahead, or the vehicle ahead is out of sensor range, dashes will be displayed.

Unnecessary Alerts

FCA may provide unnecessary alerts for turning vehicles, vehicles in other lanes, objects that are not vehicles, or shadows. These alerts are normal operation and the vehicle does not need service.

Cleaning the System

If the FCA system does not seem to operate properly, this may correct the issue:

 Clean the outside of the windscreen in front of the rearview mirror.

- Clean the entire front of the vehicle.
- Clean the headlights.

Forward Automatic Braking (FAB)

If the vehicle has Adaptive Cruise Control (ACC), it also has FAB, which includes Intelligent Brake Assist (IBA). When the system detects a vehicle ahead in your path that is travelling in the same direction that you may be about to crash into, it can provide a boost to braking or automatically brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear. Depending on the situation, the vehicle may automatically brake moderately or hard. This forward automatic braking can only occur if a vehicle is detected. This is shown by the FCA vehicle ahead indicator being lit. See Forward Collision Alert (FCA) System \Rightarrow 226.

The system works when driving in a forward gear above 4 km/h (2 mph). It can detect vehicles up to approximately 60 m (197 ft).

⚠ Warning

FAB is an emergency crash preparation feature and is not designed to avoid crashes. Do not rely on FAB to brake the vehicle. FAB will not brake outside of its operating speed range and only responds to detected vehicles.

FAB may not:

- Detect a vehicle ahead on winding or hilly roads.
- Detect all vehicles, especially vehicles with a trailer, tractors, muddy vehicles, etc.
- Detect a vehicle when weather limits visibility, such as in fog, rain, or snow.
- Detect a vehicle ahead if it is partially blocked by pedestrians or other objects.

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

FAB may slow the vehicle to a complete stop to try to avoid a potential crash. If this happens, FAB may engage the Electric Parking Brake (EPB) to hold the vehicle at a stop. To release automatic braking, release the EPB or firmly press the accelerator pedal.

⚠ Warning

FAB may automatically brake the vehicle suddenly in situations where it is unexpected and undesired. It could respond to a turning vehicle ahead, guardrails, signs, and other non-moving objects. To override FAB, firmly press the accelerator pedal, if it is safe to do so.

Intelligent Brake Assist (IBA)

IBA may activate when the brake pedal is applied quickly by providing a boost to braking based on the speed of approach and distance to a vehicle ahead.

Minor brake pedal pulsations or pedal movement during this time is normal and the brake pedal should continue to be applied as needed. IBA will automatically disengage only when the brake pedal is released.



IBA may increase vehicle braking in situations when it may not be necessary. You could block the flow of traffic. If this occurs, take your foot off the brake pedal and then apply the brakes as needed.

FAB and IBA can be disabled through vehicle personalisation. See "Collision/Detection Systems" under *Vehicle Personalisation* \$\phi\$ 143.



Using FAB or IBA while towing a trailer could cause you to lose control of the vehicle and crash. Turn the system to Off when towing a trailer.

Side Blind Zone Alert (SBZA)

If equipped, the SBZA system is a lane-changing aid that assists drivers with avoiding crashes that occur with moving vehicles in the side blind zone (or spot) areas. When the vehicle is in a forward gear, the left or right side mirror display will light up if a moving vehicle is detected in that blind zone. If the indicator is activated and a vehicle is also detected on the same side, the display will flash as an extra warning not to change lanes. Since this system is part of the Lane Change Alert (LCA) system, read the entire LCA section before using this feature.

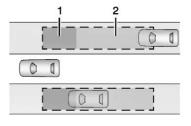
Lane Change Alert (LCA)

If equipped, the LCA system is a lane-changing aid that assists drivers with avoiding lane change crashes that occur with moving vehicles in the side blind zone (or spot) areas or with vehicles rapidly approaching these areas from behind. The LCA warning

display will light up in the corresponding outside side mirror and will flash if the indicator is on.

⚠ Warning

LCA does not alert the driver to vehicles outside of the system detection zones, pedestrians, bicyclists, or animals. It may not provide alerts when changing lanes under all driving conditions. Failure to use proper care when changing lanes may result in injury, death, or vehicle damage. Before making a lane change, always check mirrors, glance over your shoulder, and use the indicators.



- 1. SBZA Detection Zone
- 2. LCA Detection Zone

LCA Detection Zones

The LCA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2 m (6 ft) off the ground. The Side Blind Zone Alert (SBZA) warning area starts at approximately the middle of the vehicle and goes back 5 m (16 ft). Drivers are also warned of vehicles rapidly approaching this area up to approximately 25 m (82 ft) behind the vehicle.

How the System Works

The LCA symbol lights up in the side mirrors when the system detects a moving vehicle in the next lane over that is in the side blind zone or rapidly approaching from behind. This indicates it may be unsafe to change lanes. Before making a lane change, check the LCA display, check mirrors, glance over your shoulder, and use the indicators.





Left Side Mirror Display

Right Side Mirror Display

When the vehicle is started, both outside mirror LCA displays will briefly come on to indicate the system is operating. When the vehicle is in a forward gear, the left or right side mirror display will light up if a moving vehicle is detected in the next lane over in that blind zone or rapidly approaching that zone. If the indicator is activated in the same direction of a detected vehicle, this display will flash as an extra warning not to change lanes.

LCA can be disabled through vehicle personalisation. See "Collision/
Detection Systems" under Vehicle
Personalisation ⇒ 143. If LCA is disabled by the driver, the LCA mirror displays will not light up.

When the System Does Not Seem to Work Properly

The LCA system requires some driving for the system to calibrate to maximum performance. This calibration may occur more quickly if the vehicle is driven on a straight motorway with traffic and roadside objects (e.g., guardrails, barriers). During a trip, the LCA system is not operational until the vehicle first reaches a speed of 24 km/h (15 mph).

LCA displays may not come on when passing a vehicle quickly, for a stopped vehicle, or when towing a trailer. The LCA detection zones that extend back from the side of the vehicle do not move further back when a trailer is towed. Use caution while changing lanes when towing a trailer. LCA may alert to objects attached to the vehicle, such as a trailer, bicycle, or object extending out to either side of the vehicle. Attached objects may also interfere with the detection of vehicles. This is normal system operation; the vehicle does not need service.

LCA may not always alert the driver to vehicles in the next lane over. especially in wet conditions or when driving on sharp curves. The system does not need to be serviced. The system may light up due to guardrails, signs, trees, shrubs, and other non-moving objects. This is normal system operation; the vehicle does not need service.

LCA may not operate when the LCA sensors in the left or right corners of the rear bumper are covered with mud. dirt. snow. ice. or slush. or in heavy rainstorms. For cleaning instructions, see "Washing the Vehicle" under Exterior Care \$ 309. If the DIC still displays the system unavailable message after cleaning both sides of the vehicle toward the rear corners of the vehicle, see your dealer.

If the LCA displays do not light up when moving vehicles are in the blind zone or rapidly approaching that zone and the system is clean, the system may need service. Take the vehicle to your dealer.

Declaration of Conformity

See Declaration of Conformity \Rightarrow 334.

Lane Departure Warning (LDW)

If equipped, LDW may help avoid crashes due to unintentional lane departures. It may provide a warning if the vehicle is crossing a detected lane marking without using a indicator in the lane departure direction. Since this system is part of the Lane Keep Assist (LKA) system, read the entire LKA section before using this feature.

Lane Keep Assist (LKA)

If equipped, LKA may help avoid crashes due to unintentional lane departures. It may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking without using a indicator in that direction. It may also provide a Lane Departure Warning (LDW) system alert as the lane marking is crossed. The LKA system will not assist or provide an LDW alert if it

detects that you are actively steering. Override LKA by turning the steering wheel. LKA uses a camera to detect lane markings between 60 km/h (37 mph) and 180 km/h (112 mph).



⚠ Warning

The LKA system does not continuously steer the vehicle. It may not keep the vehicle in the lane or give a Lane Departure Warning (LDW) alert, even if a lane marking is detected.

The LKA and LDW systems may not:

- Provide an alert or enough steering assist to avoid a lane departure or crash.
- Detect lane markings under poor weather or visibility conditions. This can occur if the windscreen or headlights are blocked by dirt, snow, or ice, if they are not in

(Continued)

Warning (Continued)

proper condition, or if the sun shines directly into the camera.

- Detect road edges.
- Detect lanes on winding or hilly roads.

If LKA only detects lane markings on one side of the road, it will only assist or provide an LDW alert when approaching the lane on the side where it has detected a lane marking. Even with LKA and LDW, you must steer the vehicle. Always keep your attention on the road and maintain proper vehicle position within the lane, or vehicle damage, injury or death could occur. Always keep the windscreen, headlamps and camera sensors clean and in good repair. Do not use LKA in bad weather conditions.

⚠ Warning

Using LKA while towing a trailer or on slippery roads could cause loss of control of the vehicle and a crash. Turn the system off.

How the System Works

The LKA camera sensor is on the windscreen ahead of the rear-view mirror.

To turn LKA on and off, press **/=**\

When on, is green if LKA is available to assist and provide LDW alerts. It may assist by gently turning the steering wheel and display as amber if the vehicle approaches a detected lane marking without using a indicator in that direction. It may also provide an LDW alert by flashing a mber as the lane marking is crossed. Additionally, there may be three beeps, or the driver seat

may pulse three times, on the right or left, depending on the lane departure direction.

Take Steering

The LKA system does not continuously steer the vehicle. If LKA does not detect active driver steering, an alert, chime, or DIC message may be provided. Move the steering wheel to dismiss.

When the System Does Not Seem to Work Properly

The system performance may be affected by:

- Close vehicles ahead.
- Sudden lighting changes, such as when driving through tunnels.
- Banked roads.
- Roads with poor lane markings, such as two-lane roads.

If the LKA system is not functioning properly when lane markings are clearly visible, cleaning the windscreen may help. A camera blocked message may display if the camera is blocked. Cleaning the outside of the windscreen behind the rearview mirror may correct the issue. Some driver assistance systems may have reduced performance or not work at all. An LKA or LDW unavailable message may display if the systems are temporarily unavailable. This message could be due to a blocked camera. The LKA system does not need service. Clean the outside of the windscreen behind the rearview mirror

LKA assistance and/or LDW alerts may occur due to tar marks, shadows, cracks in the road, temporary or construction lane markings, or other road imperfections. This is normal system operation; the vehicle does not need service. Turn LKA off if these conditions continue.

Fuel

Use the recommended fuel for proper vehicle maintenance.

For the 2.0L L4 turbo engine (LTG), use unleaded petrol with a posted octane rating of 95 RON or higher. Unleaded petrol rated at 91 RON can be used, but acceleration and fuel economy will be reduced, and an audible knocking noise may be heard. If this occurs, use petrol rated at 95 RON as soon as possible, otherwise the engine could be damaged. If heavy knocking is heard when using unleaded petrol rated at 95 RON, the engine needs service.

For the 6.2L V8 supercharged engine (LT4), use unleaded petrol with a posted octane rating of 95 RON or higher. If the octane is less than 95 RON, the engine could be damaged and repairs would not be covered by the vehicle warranty. If heavy knocking is heard when using petrol rated at 95 RON octane, the engine needs service.

Caution

Do not use fuels with any of the following conditions; doing so may damage the vehicle and void its warranty:

- Fuel with any amount of methanol, methylal, and aniline. These fuels can corrode metal fuel system parts or damage plastic and rubber parts.
- Fuel containing metals such as methylcyclopentadienyl manganese tricarbonyl (MMT), which can damage the emissions control system and spark plugs.
- Fuel with a posted octane rating of less than the recommended fuel. Using this fuel will lower fuel economy and performance, and may decrease the life of the emissions catalyst.

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 additives to keep fuel injectors and intake valves clean. To make up for this lack of detergency, consult your retailer for the GM approved additive treatment. Add this additive to the fuel tank at every engine oil change or every 15,000 km (9,000 mi), whichever occurs first

Filling the Tank

⚠ Warning

Fuel vapours and fuel fires burn violently and can cause injury or death

(Continued)

Warning (Continued)

- 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.
- Keep sparks, flames, and smoking materials away from fuel.
- Do not leave the fuel pump unattended.
- Do not use a mobile phone while refuelling.
- 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 refuelling nozzle is inserted too quickly. This spray can happen if the tank is nearly full, and is more likely in hot

(Continued)

Warning (Continued)

weather. Insert the refuelling nozzle slowly and wait for any hiss noise to stop prior to beginning to flow fuel.



To open the fuel filler flap, push and release the rearward centre edge of the flap. The fuel door is locked when the vehicle doors are locked. Press on the RKE transmitter to unlock. See *Remote Keyless Entry (RKE) System Operation* ⇒ 28.

The vehicle has a capless refuelling system and does not have a fuel cap. The filling nozzle must be fully inserted and latched prior to starting fuel flow.



Overfilling the fuel tank by more than three clicks of a standard fill nozzle may cause:

- Vehicle performance issues, including engine stalling and damage to the fuel system.
- Fuel spills.
- Potential fuel fires.

Be careful not to spill fuel. Wait a few seconds after you have finished pumping before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See *Exterior Care*

⇒ 309.

⚠ 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.

Filling the Tank with a Portable Fuel Can

If the vehicle runs out of fuel and must be filled from a portable petrol can:



- Locate the capless funnel adapter from under the carpet in the boot.
- 2. Insert and latch the funnel into the capless fuel system.

Warning

Attempting to refuel without using the funnel adapter may cause fuel spillage and damage the capless fuel system. This could cause a fire and you or others could be badly burned and the vehicle could be damaged.

After filling the tank, remove and clean the funnel adapter and return it to the storage location.

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:

(Continued)

Warning (Continued)

- Use approved fuel containers.
- 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.

Trailer Towing

General Towing Information

Only use towing equipment that has been designed for the vehicle. Contact your dealer or trailering dealer for assistance with preparing the vehicle for towing a trailer. Read the entire section before towing a trailer.

For towing a disabled vehicle, see *Towing the Vehicle* \Rightarrow 306. For towing the vehicle behind another vehicle such as a motor home, see *Recreational Vehicle Towing* \Rightarrow 307.

Driving Characteristics and Towing Tips

Driving with a Trailer

When towing a trailer:

 Become familiar with the state and local laws that apply to trailer towing.

- Do not tow a trailer during the first 2 414 km (1,500 mi) to prevent damage to the engine, axle or other parts.
- Then during the first 800 km (500 mi) of trailer towing, do not drive over 80 km/h (50 mph) and do not make starts at full throttle.
- Vehicles can tow in D (Drive).
 Shift the transmission to a lower gear if the transmission shifts too often under heavy loads and/or hilly conditions.
- Do not use Adaptive Cruise Control when towing.
- The Forward Automatic Braking System should be set to Off when towing. See Forward Automatic Braking (FAB) ⇒ 229.
- Turn off Parking 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*

⇒ 195.

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.

Following Distance

Stay at least twice as far behind the vehicle ahead as you would when driving the vehicle without a trailer. This can help to avoid heavy braking and sudden turns.

Overtaking

More overtaking distance is needed when towing a trailer. The combination will not accelerate as quickly and is longer so it is necessary to go much farther beyond the passed vehicle before returning to the lane.

Reversing

Hold the bottom of the steering wheel with one hand. To move the trailer to the left, move that hand to the left. To move the trailer to the right, move your hand to the right. Always reverse slowly and, if possible, have someone guide you.

Making Turns

Caution

Making very sharp turns while trailering could cause the trailer to come in contact with the vehicle. The vehicle could be damaged. Avoid making very sharp turns while trailering.

When turning with a trailer, make wider turns than normal. Do this so the trailer will not strike soft

shoulders, curbs, road signs, trees, or other objects. Avoid jerky or sudden manoeuvres. Signal well in advance.

If the trailer indicator bulbs burn out. the arrows on the instrument cluster will still flash for turns. It is important to check occasionally to be sure the trailer bulbs are still working.

Driving on Grades

Reduce speed and shift to a lower gear before starting down a long or steep downgrade. If the transmission is not shifted down, the brakes might get hot and no longer work well.

Vehicles can tow in D (Drive). Shift the transmission to a lower gear if the transmission shifts too often under heavy loads and/or hilly conditions.

When towing at high altitude on steep uphill grades, consider the following: Engine coolant will boil at a lower temperature than at normal altitudes. If the engine is turned off immediately after towing at high altitude on steep uphill grades, the vehicle may show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground,

with the automatic transmission in P (Park) for a few minutes before turning the engine off. If the overheat warning comes on, see Engine Overheating \Rightarrow 259.

Parking on Hills



🗥 Warning

Parking the vehicle on a hill with the trailer attached can be dangerous. If something goes wrong, the rig could start to move. People can be injured, and both the vehicle and the trailer can be damaged. When possible, always park the rig on a flat surface.

If parking the rig on a hill:

- 1. Press the brake pedal, but do not shift into P (Park) yet. Turn the wheels into the curb if facing downhill or into traffic if facing uphill.
- 2. Have someone place chocks under the trailer wheels.

- 3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load
- Reapply the brake pedal. Then apply the parking brake and shift into P (Park).
- Release the brake pedal.

Leaving After Parking on a Hill

- Apply and hold the brake pedal.
- Start the engine.
- Shift into a gear.
- Release the parking brake.
- Release the brake pedal.
- Drive slowly until the trailer is clear of the chocks
- Stop and have someone pick up and store the chocks.

Maintenance when Trailer Towing

The vehicle needs service more often when pulling a trailer. Things that are especially important in trailer operation are automatic transmission fluid, engine oil, axle lubricant, belts,

cooling system and brake system. It is a good idea to inspect these before and during the trip.

Check periodically to see that all hitch nuts and bolts are tight.

Trailer Towing (L4 Engine)

A maximum speed of 100 km/h (62 mph) must not be exceeded, even in countries where higher speed limits are permitted.

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 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.

Use the following chart to determine how much the vehicle can weigh, based upon the vehicle model and options.

Vehicle	Maximum Trailer Weight	GCWR*	Maximum Tongue Weight**
2.0L Engine, AWD Sedan	1 136 kg (2,500 lb)	3 396 kg* (7,486 lb)*	46 kg** (100 lb)**
2.0L Engine, RWD Sedan	1 136 kg (2,500 lb)	3 296 kg* (7,266 lb)*	46 kg** (100 lb)**

*The Gross Combination Weight Rating (GCWR) is the total allowable weight of the completely loaded vehicle and trailer including any passengers, cargo, equipment, and conversions. The GCWR for the vehicle should not be exceeded.

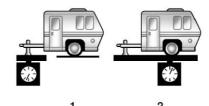
**If a weight-carrying hitch or a weight-distributing hitch is being used, the trailer tongue should weigh no less than 4% of the total loaded trailer weight, and no more than 46 kg (100 lb).

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* \Rightarrow 184.



The trailer tongue (1) should weigh no less than 4% and no more than 10% of the total loaded trailer weight (2). Do not exceed the maximum tongue loads for the hitch

After loading the trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, adjustments might be made by moving some items around in the trailer.

If an aftermarket coupling device is added to the vehicle, the combined mass of the vehicle, passengers, cargo in the vehicle, mass of the coupling device and trailer tongue load must not exceed the gross vehicle mass rating for the vehicle.

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* \$\dip 184\$. Make sure not to go over the GVW limit for the vehicle, including the weight of the trailer tongue.

Trailer Towing (V-Series)

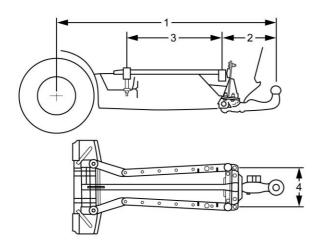
The vehicle is neither designed nor intended to tow a trailer.

Towing Equipment (L4 Engine)

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 ⇒ 195.



- Distance from the center of the hitch ball to the center point of the rear axle 149.5 cm (58.9 in)
- Distance from the center of the hitch ball to the rear hitch fastening location 40.7 cm (16.0 in)

- 3. Minimum distance from the rear hitch fastening location to the forward hitch fastening location 16.1 cm (6.3 in)
- Distance from the left side to the right side of the hitch fastening locations 16.1 cm (6.3 in)

The maximum allowable rear overhang for the trailer coupling point is 25 cm (9.8 in) from the center of

the hitch ball, or 31.5 cm (12.4 in) from the rear bumper when measured at the height of the hitch ball.

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? National and local regulations may require the trailer to have its own braking system if loaded above a certain threshold. Trailer brake requirements vary by region. Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted and maintained properly.

A loaded trailer that weighs more than 450 kg (1,000 lb) must be equipped with its own brake system, with brakes working on all axles.

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.

Trailer lamps should be visually checked at the beginning of each trip, and periodically on a longer trip.

Conversions and Add-Ons

Add-On Electrical Equipment

⚠ Warning

The Data Link Connector (DLC) is used for vehicle service and Emission Inspection/Maintenance testing. See *Malfunction Indicator Lamp (Check Engine Light)* ⇒ 127. A device connected to the DLC — such as an aftermarket fleet or driver-behaviour tracking device — may interfere with vehicle systems. This could affect vehicle operation and cause a crash. Such devices may also access information stored in the vehicle's systems.

Caution

Some electrical equipment can damage the vehicle or cause components not to work and would not be covered by the vehicle warranty. Always check with your dealer before adding electrical equipment.

Add-on equipment can drain the vehicle's 12-volt battery, even if the vehicle is not operating.

The vehicle has an airbag system. Before attempting to add anything electrical to the vehicle, see *Servicing the Airbag-Equipped Vehicle* \$ 84 and *Adding Equipment to the Airbag-Equipped Vehicle* \$ 85.

Vehicle Care

General Information	
General Information 2	46
Accessories and	
Modifications 2	46
Vehicle Checks	
Doing Your Own	
Service Work 2	47
Bonnet 2	47
Engine Compartment	
Overview 2	48
Engine Oil 2	51
Engine Oil Life System 2	53
Automatic Transmission	
Fluid 2	54
Engine Air Cleaner/Filter 2	54
Cooling System 2	55
Engine Overheating 2	59
Washer Fluid 2	60
Brakes 2	61
Brake Fluid 2	62
Battery	63
All-Wheel Drive 2	64
Starter Switch Check 2	65
Automatic Transmission Shift	
Lock Control Function	
Check 2	65

Park Brake and P (Park)	
Mechanism Check 26	66
Wiper Blade Replacement 26	56
Windshield Replacement 26	
Gas Strut(s)	
Headlamp Aiming	
Headlamp Aiming 26	08
Bulb Replacement	
Bulb Replacement 26	59
Halogen Bulbs 26	59
High Intensity Discharge (HID)	
Lighting 26	59
LED Lighting 26	
Back-Up Lamps 26	
Number Plate Lamp 27	70
Electrical System	
Electrical System Overload 27	71
Fuses and Circuit Breakers 27	
Engine Compartment Fuse	1
Block	7)
Instrument Panel Fuse Block 27	
Rear Compartment Fuse	,
Block	77
DIOCK 27	,
Wheels and Tyres	
Tyres 28	30
All-Season Tyres 28	
Winter Tyres 28	
Run-Flat Tyres 28	

Low-Profile Tyres	282
Summer Tyres	
Tyre Pressure	
Tyre Pressure for High-Speed	
Operation	285
Tyre Pressure Monitor	
System	285
Tyre Pressure Monitor	
Operation	
Tyre Inspection	289
Tyre Rotation	
When It Is Time for New	
Tyres	
Buying New Tyres	292
Different Size Tyres and	
Wheels	293
Wheel Alignment and Tyre	
Balance	
Wheel Replacement	294
Tyre Chains	
If a Tyre Goes Flat	295
Tyre Sealant and	
Compressor Kit	296
Storing the Tyre Sealant and	
Compressor Kit	303
Jump Starting	
Jump Starting	303
Towing the Vehicle	
Towing the Vehicle	306

Appearance Care	
Exterior Care	309
Interior Care	313

Recreational Vehicle Towing 307

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 suspension components caused by modifying vehicle height outside of factory settings will not be covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorise the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see Adding Equipment to the Airbag-Equipped Vehicle \Rightarrow 85.

Vehicle Checks

Doing Your Own Service Work

⚠ Warning

It can be dangerous to work on your vehicle if you do not have the proper knowledge, service manual, tools, or parts. Always follow owner's manual procedures and consult the service manual for your vehicle before doing any service work.

If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can.

This vehicle has an airbag system. Before attempting to do your own service work, see *Servicing the Airbag-Equipped Vehicle* \$ 84.

Keep a record with all parts receipts and list the mileage and the date of any service work performed.

Caution

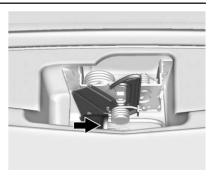
Even small amounts of contamination can cause damage to vehicle systems. Do not allow contaminants to contact the fluids, reservoir caps, or dipsticks.

Bonnet

To open the bonnet:



 Pull the bonnet release lever with this symbol on it. It is on the lower left side of the instrument panel.

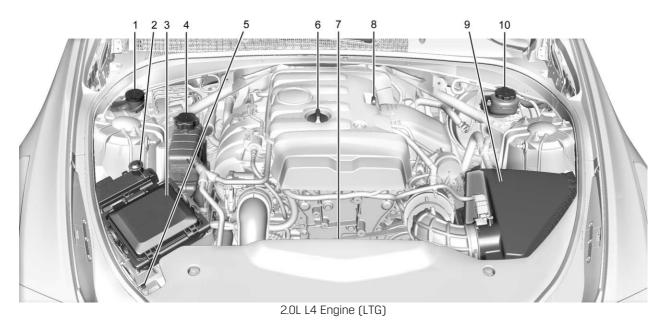


 Go to the front of the vehicle to find the secondary bonnet release handle. The handle is under the front edge of the bonnet near the centre. Push the handle to the right and at the same time raise the bonnet

To close the bonnet:

Before closing the bonnet, be sure all filler caps are on properly. Then, bring the bonnet from full open to within 152 mm (6 in) of the closed position. Pause, then push the front centre of the bonnet with a swift, firm motion to fully close the bonnet.

Engine Compartment Overview

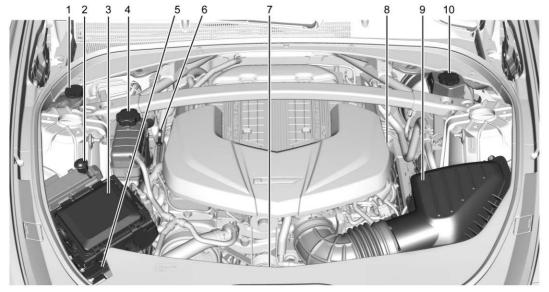


- 3. Engine Compartment Fuse Block

 ⇒ 272.
- 4. Engine Coolant Surge Tank and Pressure Cap. See *Cooling System*

 ⇒ 255.

- 7. Engine Cooling Fan (Out of View). See *Cooling System* \$\dip 255.
- 8. Engine Oil Dipstick. See *Engine Oil ⇔ 251*.
- 10. Brake Fluid Reservoir. See *Brake Fluid* \Rightarrow 262.



6.2L V8 Engine (LT4)

- 3. Engine Compartment Fuse Block

 ⇒ 272.

- 6. Engine Oil Dipstick. See *Engine* Oil \$\dip 251\$.
- 8. Engine Oil Fill Cap (Out of View). See *Engine Oil* ⇒ *251*.
- 9. Engine Air Cleaner/Filter \$ 254.
- 10. Brake Fluid Reservoir. See *Brake Fluid* \$\dip 262\$.

Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Use engine oil approved to the proper specification and of the proper viscosity grade. See "Selecting the Right Engine Oil" in this section.
- Check the engine oil level regularly and maintain the proper oil level.
 See "Checking Engine Oil" and "When to Add Engine Oil" in this section.
- Always dispose of engine oil properly. See "What to Do with Used Oil" in this section.

Checking Engine Oil

Check the engine oil level regularly, every 650 km (400 mi), especially prior to a long trip. The engine oil

dipstick handle is a loop. See *Engine Compartment Overview* \Rightarrow 248 for the location.



The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

If a low oil Driver Information Centre (DIC) message displays, check the oil level

Follow these guidelines:

 To get an accurate reading, park the vehicle on level ground. Check the engine oil level after the engine has been off for at least two hours. Checking the engine oil level on steep gradients or too soon after engine shutoff can result in incorrect readings. Accuracy improves when checking a cold engine prior to starting. Remove the dipstick and check the level. • If unable to wait two hours, the engine must be off for at least 15 minutes if the engine is warm, or at least 30 minutes if the engine is not warm. Pull out the dipstick, wipe it with a clean paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.

When to Add Engine Oil



2.0L L4 Turbo Engine (LTG)



6.2L V8 Supercharged Engine (LT4)

If the oil is below the cross-hatched area at the tip of the dipstick and the engine has been off for at least 15 minutes, add 1 L (1 qt) of the recommended oil and then recheck the level. See "Selecting the Right Engine Oil" later in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see Capacities and Specifications

⇒ 326.

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 [Continued]

Caution (Continued)

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 $\Rightarrow 248$ 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

Specification

Ask for and use full synthetic engine oils that meet the dexos1 specification.

Engine oils that have been approved by GM as meeting the dexos1 specification are marked with the dexos1 approved logo.



Caution

Use only engine oil that is approved to the dexos 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 °C (-20 °F), an SAE 0W-30 oil may be used. An oil of this viscosity grade will provide easier cold starting for the engine at extremely low temperatures. When selecting an oil of the appropriate viscosity grade, it is recommended to select an oil of the correct specification. See "Specification" earlier in this section.

Engine Oil Additives/Engine Oil Flushes

Do not add anything to the oil. The recommended oils meeting the dexos1 specification are all that is needed for good performance and engine protection.

Engine oil system flushes are not recommended and could cause engine damage not covered by the vehicle warranty.

What to Do with Used Oil

Used engine oil contains certain elements that can be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the trash or pouring it on the ground, into sewers, or into streams or bodies of water. Recycle it by taking it to a place that collects used oil.

Engine Oil Life System When to Change Engine Oil

This vehicle has a computer system that indicates when to change the engine oil and filter. This is based on a combination of factors which include engine revolutions, engine temperature, and miles driven. Based on driving conditions, the mileage at which an oil change is indicated can vary considerably. For the oil life system to work properly, the system must be reset every time the oil is changed.

When the system has calculated that oil life has been diminished, it indicates that an oil change is necessary. A CHANGE ENGINE OIL SOON message comes on. Change the oil as soon as possible within the next 1 000 km (600 mi). It is possible that, if driving under the best conditions, the oil life system might indicate that an oil change is not necessary for up to a year. The engine oil and filter must be changed at least once a year and, at this time, the system must be reset. Your dealer has trained service people who will perform this work and reset the system. It is also important to check the oil regularly over the course of an oil drain interval and keep it at the proper level.

If the system is ever reset accidentally, the oil must be changed at 5 000 km (3,000 mi) since the last oil change. Remember to reset the oil life system whenever the oil is changed.

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

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

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. Contact the dealer for additional information.

Change the fluid and filter at the intervals listed in *Scheduled Maintenance* ⇔ 319, and be sure to use the fluid listed in *Recommended Fluids and Lubricants* ⇔ 322.

Engine Air Cleaner/Filter

When to Inspect the Engine Air Cleaner/Filter

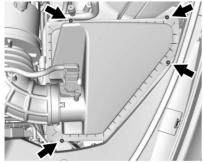
For intervals on changing and inspecting the engine air cleaner/filter, see *Scheduled Maintenance* \Rightarrow 319.

How to Inspect the Engine Air Cleaner/Filter

Do not start the engine or have the engine running with the engine air cleaner/filter housing open. Before removing the engine air cleaner/filter, make sure that the engine air cleaner/filter housing and nearby components are free of dirt and debris. Remove the engine air cleaner/filter. Lightly tap and shake the engine air cleaner/filter

(away from the vehicle), to release loose dust and dirt. Inspect the engine air cleaner/filter for damage, and replace if damaged. Do not clean the engine air cleaner/filter or components with water or compressed air.

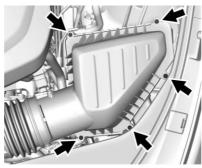
To inspect or replace the air cleaner/filter:



2.0L L4 Engine (LTG)

- 1. Remove the screws on top of the air cleaner/filter cover.
- Lift the air cleaner/filter cover away from the air cleaner/filter housing.
- 3. Pull out the air cleaner/filter.

- Inspect or replace the air cleaner/filter.
- Reverse Steps 1-3 to reinstall the air cleaner/filter cover.



6.2L V8 Engine (LT4)

- Remove the screws on top of the air cleaner/filter cover.
- Lift the air cleaner/filter cover away from the air cleaner/filter housing.
- 3. Pull out the air cleaner/filter.
- Inspect or replace the engine air cleaner/filter.
- Reverse Steps 1-3 to reinstall the air cleaner/filter cover.

⚠ Warning

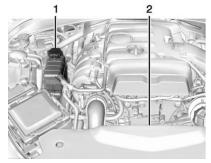
Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air; it helps to stop flames if the engine backfires. Use caution when working on the engine and do not drive with the air cleaner/filter off.

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 driving.

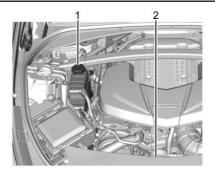
Cooling System

The cooling system allows the engine to maintain the correct working temperature.



2.0L L4 Engine (LTG)

- 1. Engine Coolant Surge Tank and Pressure Cap
- 2. Engine Cooling Fan (Out of View)



6.2L V8 Engine (LT4)

- Engine Coolant Surge Tank and Pressure Cap
- 2. Engine Cooling Fan (Out of View)

\triangle Warning

An underbonnet electric fan 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

Do not touch heater or radiator hoses, or other engine parts. They can be very hot and can burn you. Do not run the engine if there is a leak; all coolant could leak out. That could cause an engine fire and can burn you. Fix any leak before driving the vehicle.

Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL engine coolant. See *Scheduled Maintenance* ⇔ 319 and *Recommended Fluids and Lubricants* ⇔ 322.

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* \Rightarrow 259.

What to Use



Do not touch heater or radiator hoses, or other engine parts. They can be very hot and can burn you. Do not run the engine if there is a leak; all coolant could leak out. That could cause an engine fire and can burn you. Fix any leak before driving the vehicle.

Use a 50/50 mixture of clean drinkable water and DEX-COOL coolant. This mixture:

- Gives freezing protection down to -37 °C (-34 °F), outside temperature
- Gives boiling protection up to 129 °C (265 °F), engine temperature
- · Protects against rust and corrosion
- Will not damage aluminium parts
- Helps keep the proper engine temperature

Caution

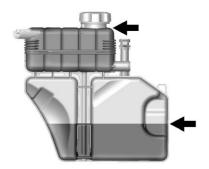
Do not use anything other than a mix of DEX-COOL coolant that meets GM Standard GMW3420 and clean, drinkable water. Anything else can cause damage to the engine cooling system and the vehicle, which would not be covered by the vehicle warranty.

Never dispose of engine coolant by putting it in the 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.

It is normal to see coolant moving in the upper coolant hose return line when the engine is running. It is also normal to see bubbles entering the surge tank through the small hose.



Check to see if coolant is visible in the coolant surge tank. If the coolant inside the coolant surge tank is boiling, do not do anything else until it cools down.

It is normal for the coolant level in the bottom chamber to rise and fall with operating temperature and ambient conditions. Coolant will evaporate from the bottom chamber in normal operation. This will happen faster when the vehicle is driven for long periods in hot, dry conditions.

If no coolant is visible in the coolant surge tank, add coolant as follows:

How to Add Coolant to the Coolant Surge Tank



Spilling coolant on hot engine parts can burn you. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough.

⚠ Warning

Plain water, or other liquids such as alcohol, may boil before the proper coolant mixture does. With plain water or the wrong mixture, the engine could get too hot but there would not be an overheat warning. The engine could catch fire and you or others could be burned.

⚠ Warning

Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to jet out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap itself, is hot. Wait for the cooling system and pressure cap to cool.

Caution

Failure to follow the specific coolant fill procedure could cause the engine to overheat and could cause system damage. If coolant is not visible in the surge tank, contact your retailer.

If no problem is found, check to see if coolant is visible in the coolant surge tank. If coolant is visible but the coolant level is not at the bottom of the fill neck, add a 50/50 mixture of

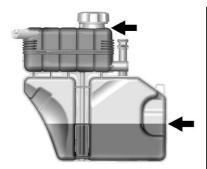
clean, drinkable water and DEX-COOL coolant. Be sure the cooling system, including the coolant surge tank pressure cap, is cool before you do it.



 Remove the coolant surge tank pressure cap from the top chamber when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot.

Turn the pressure cap slowly anticlockwise. If you hear a hiss, wait for that to stop. This will allow any pressure still left to be vented out the discharge hose.

Keep turning the pressure cap slowly and remove it. Open the surge tank service port cap to the lower chamber. The service port is behind the top chamber.



- Fill the surge tank top chamber with the proper mixture to the bottom of the fill neck. The top chamber needs to be completely full. Fill the surge tank bottom chamber through the service port to approximately half.
- 4. With the coolant surge tank pressure cap off and the surge tank service port cap open, start the engine and let it run until you can feel the upper radiator hose getting hot. Watch out for the engine cooling fan(s).

By this time, the coolant level inside the coolant surge tank top chamber may be lower. If the level is lower, add more of the proper mixture to the surge tank top chamber until the level reaches the bottom of the fill neck.

- Replace the surge tank pressure cap tightly and close the surge tank service port cap.
- 6. Check the level in the surge tank top and bottom chambers when the cooling system has cooled down. If the coolant is not at the proper levels, repeat Steps 1–6 and reinstall the pressure cap and close the service port. If the coolant still is not at the proper levels when the system cools down again, see your dealer.

Caution

If the pressure cap is not tightly installed, coolant loss and engine damage may occur. Be sure the cap is properly and tightly secured.

Engine Overheating

The vehicle has an indicator to warn of the engine overheating.

If the decision is made not to lift the bonnet when this warning appears, 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 fan is running. If the engine is overheating, the fan should be running. If it is not, do not continue to run the engine. Have the vehicle serviced.

Caution

Do not run the engine if there is a leak in the engine cooling system. This can cause a loss of all coolant and can damage the system and vehicle. Have any leaks fixed right away.

If Steam Is Coming from the Engine Compartment



Steam and scalding liquids from a hot cooling system are under pressure. Turning the pressure cap, even a little, can cause them to jet out at high speed and you could be burned. Never turn the cap when the cooling system, including the pressure cap itself, is hot. Wait for the cooling system and pressure cap to cool.

If Steam Is Coming from the Engine Compartment with No Overheat Warning (V-Series Only)

The V-Series bonnet vent is functional, and will allow water from rain and car washes to enter the engine compartment and contact hot surfaces. If steam is seen coming from the bonnet vent with no accompanying overheat warning, no action is required.

If No Steam Is Coming from the Engine Compartment

If an engine overheat warning is displayed but no steam can be seen or heard, the problem may not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day
- Stops after high-speed driving
- Idles for long periods in traffic

If the overheat warning is displayed with no sign of steam:

- 1. Turn the air conditioning off.
- Turn the heater on to the highest temperature and to the highest fan speed. Open the windows as necessary.
- 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 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.

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 may fall below freezing, use a fluid that has sufficient protection against freezing.

Adding Washer Fluid



Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment*Overview

248 for reservoir location.

Caution

- Do not use washer fluid that contains any type of water repellent coating. This can cause the wiper blades to chatter or skip.
- Do not use engine coolant (antifreeze) in the windscreen washer. It can damage the windscreen washer system and paint.

(Continued)

Caution (Continued)

- Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage the washer fluid tank and other parts of the washer system.
- When using concentrated washer fluid, follow the manufacturer instructions for adding water.
- Fill the washer fluid tank only three-quarters full when it is very cold. This allows for fluid expansion if freezing occurs, which could damage the tank if it is completely full.

Brakes

Disc brake 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.



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.

If equipped with high performance brake linings, there could be an increased build-up of brake dust as well as minor noises as compared to standard brake linings.

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 ⇔* 326.

Brake pads should be replaced as complete sets.

Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign that brake service may be required.

Replacing Brake System Parts

Always replace brake system parts with new, approved replacement parts. If this is not done, the brakes may not work properly. The braking performance expected can change in

many other ways if the wrong replacement brake parts are installed or parts are improperly installed.

Brake Fluid



The brake master cylinder reservoir is filled with GM approved DOT 3 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview*

⇒ 248 for the location of the reservoir.

Checking Brake Fluid

With the vehicle in P (Park) on a level surface, the brake fluid level should be between the minimum and maximum marks on the brake fluid reservoir.

There are only two reasons why the brake fluid level in the reservoir may go down:

 Normal brake lining wear. When new linings are installed, the fluid level goes back up. A fluid leak in the brake hydraulic system. Have the brake hydraulic system fixed. With a leak, the brakes will not work well.

Always clean the brake fluid reservoir cap and the area around the cap before removing it.

Do not top off the brake fluid. Adding fluid does not correct a leak. If fluid is added when the linings are worn, there will be too much fluid when new brake linings are installed. Add or remove fluid, as necessary, only when work is done on the brake hydraulic system.

⚠ Warning

If too much brake fluid is added, it can spill on the engine and burn, if the engine is hot enough. You or others could be burned, and the vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system.

When the brake fluid falls to a low level, the brake warning light comes on. See *Brake System Warning Light*

⇒ 129.

Brake fluid absorbs water over time which degrades the effectiveness of the brake fluid. Replace brake fluid at the specified intervals to prevent increased stopping distance. See *Scheduled Maintenance* ♀ 319.

What to Add

Use only GM approved DOT 3 brake fluid from a clean, sealed container. See *Recommended Fluids and Lubricants* ⇒ 322.

⚠ Warning

The wrong or contaminated brake fluid could result in damage to the brake system. This could result in the loss of braking leading to a possible injury. Always use the proper GM approved brake fluid.

Caution

If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Immediately wash off any painted surface.

Battery

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

The battery is in the boot, behind the trim panel, on the driver side of the vehicle. Refer to the replacement number shown on the original battery label when a new battery is needed.

This vehicle has an Absorbed Glass Mat (AGM) 12-volt battery. Installation of a standard 12-volt battery will result in reduced 12-volt battery life.

When using a 12-volt battery charger on the 12-volt AGM battery, some chargers have an AGM battery setting on the charger. If available, use the AGM setting on the charger, to limit

charge voltage to 14.8 volts. Follow the charger manufacturer's instructions.













⚠ Warning

Do not use a match or flame near a vehicle's battery. If you need more light, use a torch.

Do not smoke near a vehicle's battery.

When working around a vehicle's battery, shield your eyes with protective glasses.

(Continued)

Warning (Continued)

Keep children away from vehicle batteries.

⚠ Warning

Batteries have acid that can burn you and gas that can explode. You can be hurt badly if you are not careful.

Follow instructions carefully when working around a battery.

Battery posts, terminals and related accessories contain lead and lead compounds which can cause cancer and reproductive harm. Wash hands after handling.

After a power loss, such as disconnecting the battery or removing the maxi fuses in the power distribution fuse block, the following steps must be performed to calibrate

the electronic throttle control. If this is not done, the engine will not run properly.

- 1. Turn the ignition on but do not start the engine.
- Leave the ignition on for at least three minutes so that the electronic throttle control will cycle and relearn its home position.
- 3. Turn the ignition off.
- 4. Start and run the engine for at least 30 seconds.

Vehicle Storage

Infrequent Usage: Remove the black, negative (-) cable from the battery to keep the battery from running down.

Extended Storage: Remove the black, negative (-) cable from the battery or use a battery trickle charger.

All-Wheel Drive

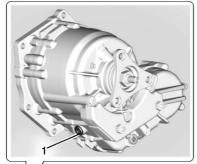
If the vehicle is equipped with All-Wheel-Drive (AWD), this is an additional system that needs lubrication.

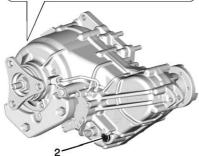
Transfer Case

When to Check Lubricant

It is not necessary to regularly check the transfer case fluid unless a leak is suspected or an unusual noise is heard. A fluid loss could indicate a problem. Have it inspected and repaired.

How to Check Lubricant





- 1. Fill Plug
- 2. Drain Plug

To get an accurate reading, the vehicle should be on a level surface.

If the level is below the bottom of the fill plug hole, on the transfer case, some lubricant will need to be added. Add enough lubricant to raise the level to the bottom of the fill plug hole. Use care not to overtighten the fill plug.

What to Use

Starter Switch Check

⚠ Warning

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

 Before starting this check, be sure there is enough room around the vehicle.

- Firmly 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.
- Try to start the engine in each gear. The vehicle should start only in P (Park) or N (Neutral).
 If the vehicle starts in any other position, contact your dealer for service.

Automatic Transmission Shift Lock Control Function Check

⚠ Warning

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

 Before starting this check, be sure there is enough room around the vehicle. It should be parked on a level surface.

- 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.

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

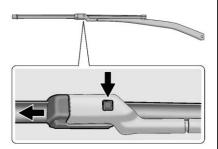
Windscreen wiper blades should be inspected for wear and cracking.

Caution

Allowing the wiper arm to touch the windscreen when no wiper blade is installed could damage the windscreen. Any damage that occurs would not be covered by the vehicle warranty. Do not allow the wiper arm to touch the windscreen.

To replace the windscreen wiper blade:

 Pull the windscreen wiper assembly away from the windscreen. The passenger side wiper arm has limited travel.



- Press the button in the middle of the wiper arm connector, and pull the wiper blade away from the arm connector.
- 3. Remove the wiper blade.
- 4. Reverse Steps 1–3 for wiper blade replacement.

Windshield Replacement HUD System

The windscreen is part of the HUD system. If the windscreen must be replaced, get one that is designed for HUD or the HUD image may look out of focus.

Driver Assistance Systems

If the windshield needs to be replaced and the vehicle is equipped with a front camera sensor for the Driver Assistance Systems, a GM replacement windshield is recommended. The replacement windshield must be installed according to GM specifications for proper alignment. If it is not, these systems may not work properly, they may display messages, or they may not work at all. See your dealer for proper windshield replacement.

Gas Strut(s)

This vehicle is equipped with gas strut(s) to provide assistance in lifting and holding open the bonnet/boot/tailgate system in full open position.

⚠ Warning

If the gas struts that hold open the bonnet, boot, and/or tailgate fail, you or others could be seriously injured. Take the vehicle to your (Continued)

Warning (Continued)

retailer for service immediately. Visually inspect the gas struts for signs of wear, cracks, or other damage periodically. Check to make sure the bonnet/boot/tailgate is held open with enough force. If struts are failing to hold the bonnet/boot/tailgate, do not operate. Have the vehicle serviced.

Caution

Do not apply tape or hang any objects from gas struts. Also do not push down or pull on gas struts. This may cause damage to the vehicle.







Boot



Tailgate

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, or any bulb changing procedure not listed in this section, contact your retailer.

Halogen Bulbs



Halogen bulbs have pressurised gas inside and can burst if you drop or scratch the bulb. You or others could be injured. Be sure to read and follow the instructions on the bulb package.

High Intensity Discharge (HID) Lighting

⚠ Warning

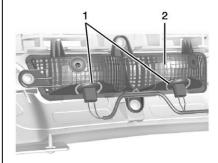
The High Intensity Discharge (HID) lighting system operates at a very high voltage. If you try to service any of the system components, you could be seriously injured. Have your dealer or a qualified technician service them.

After an HID headlamp bulb has been replaced, the beam might be a slightly different shade than it was originally. This is normal.

LED Lighting

This vehicle has several LED lamps. For replacement of any LED lighting assembly, contact your dealer.

Back-Up Lamps

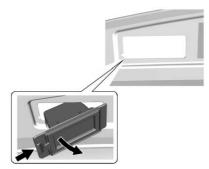


- Reversing Bulb Socket
- 2. Reversing Lamp Assembly

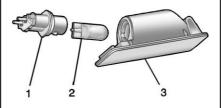
To replace one of these bulbs:

- Reach under the rear fascia and locate the reversing lamp assembly.
- Remove the bulb socket (1) by turning anticlockwise and pulling straight out of the lamp assembly (2).
- 3. Pull the bulb out of the socket.
- 4. Install the new bulb in the bulb socket.
- 5. Install the bulb socket by turning clockwise.

Number Plate Lamp



Lamp Assembly



Bulb Assembly

- Bulb Socket
- 2. Bulb
- 3. Lamp Assembly

To replace one of these bulbs:

- 1. Push the lamp assembly (3) toward the centre of the vehicle.
- 2. Pull the lamp assembly down to remove.
- 3. Turn the bulb socket (1) anticlockwise to remove it from the lamp assembly (3).
- 4. Pull the bulb (2) straight out of the bulb socket (1).
- Push the replacement bulb straight into the bulb socket and turn the bulb socket clockwise to install it into the lamp assembly.
- Push the lamp assembly back into position until the release tab locks into place.

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. Wiper function is available immediately after the wiper switch is set to off, and back to on.

To protect the wiper motor from overheating, the wipers may slow down when the windscreen is dry for a long period of time. If a period of dry operation, or little moisture, exceeds 10 minutes, the wipers may switch to intermittent operation, and remain there. When moisture is again detected on the windscreen, wiper operation will return to the operator selected speed.

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.



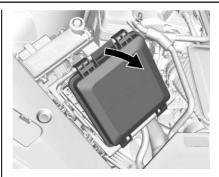
Fuses and circuit breakers are marked with their ampere rating. Do not exceed the specified amperage rating when replacing fuses and circuit breakers. Use of an oversized fuse or circuit breaker can result in a vehicle fire. You and others could be seriously injured or killed.

To check a fuse, look at the silver-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.

Engine Compartment Fuse Block

The underbonnet fuse block is on the passenger side of the engine compartment.

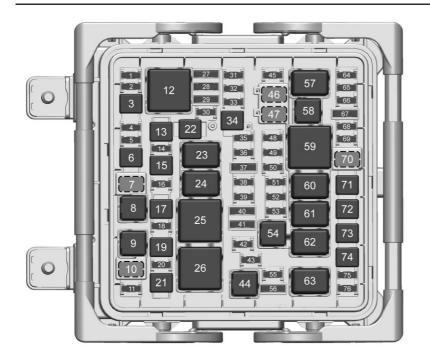


Lift the fuse block cover to access the fuses.

The vehicle may not be equipped with all of the fuses and relays shown.

Caution

Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.



Fuses	Usage
1	-
2	-
3	Passenger motorised seat belt
4	-
5	-
6	Driver power seat
7	-
8	Headlamp washer
9	-
10	-
11	-
12	-
13	Passenger power seat
14	-
15	Passive entry/Passive start
16	-
17	Headlamp washers
18	Seat belt

Fuses	Usage	Fuses	Usage	Fuses	Usage
19	Anti-lock brake	35	Steering column lock	51	Engine control
	system pump	36	Rear bussed electrical		module/Iignition
20	Anti-lock brake		center/Ignition	52	Transmission control
2.1	system valve	37	-/Malfunction		module/Ignition
21	-		Indicator Lamp/	53	Coolant pump
22	Driver motorised		Ignition	55	-
	seat belt	38	Aeroshutter	56	Transmission control
25	Engine control	39	O2 sensor/Emissions		module–/
26	module -	40	Ignition coil even/O2 sensor	64	Adaptive headlamp levelling
27	-/Heated seat 2	41	Ignition coil odd	65	Left HID headlamp
28	–/Reverse lock out	42	Engine control	66	Right HID headlamp
29		12	module	67	o i
29	Adaptive forward lighting/Automatic	43	-	07	Left/Right main beam headlight
	headlamp leveling/	44	-	68	Headlight levelling
	Pedestrian protection	45	Washer		motor
30	=	48	Instrument panel/	69	Horn
31	Passenger window switch		Body/Ignition	71	Cooling fan
32	-	49	Fuel system control	*72	Starter 2
_	-		module/Ignition	*73	Brake vacuum pump
33 34	Sunroof Front wiper	50	Heated steering wheel	74	Starter 1
		1			

Fuses	Usage
75	Air conditioning clutch
76	-
Relays	Usage
23	Wiper control
24	Wiper speed
46	Rear washer
47	Front washer
54	Coolant pump
57	Dipped beam headlight relay
58	High-beam headlam
59	Run/Crank
60	Starter 2
61	Vacuum pump
62	Starter 1
63	Air conditioning control
70	Horn

Instrument Panel Fuse Block

The instrument panel fuse block is in the end of the driver side of the instrument panel.

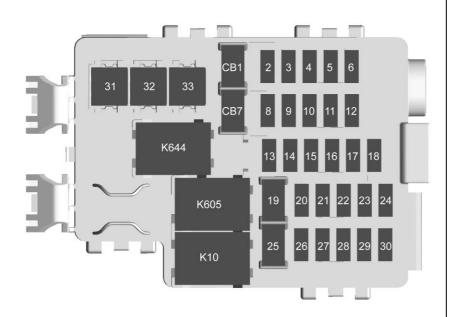


To access the fuses, remove the end panel by gently prying with a plastic tool near each clip, beginning at the point shown.



To install the end cover, insert the tabs on the back of the cover into the slots in the instrument panel at the points shown. Align the clips with the slots in the instrument panel, and press the cover into place.

The vehicle may not be equipped with all of the fuses and relays shown.



		Fuses	Usage
Fuses 2	Usage Cupholder motor	3	Electric steering column lock

Fuses	Usage
4	=
5	=
6	Tilt and telescopic steering column
8	Data link connector
9	Glovebox release
10	Shunt
11	Body control module 1
12	Body control module 5
13	Body control module 6
14	=
15	Body control module 2
16	Transmission control module
17	-
18	-
19	Auxiliary power socket

Fuses	Usage
20	Lighter
21	Wireless charger
22	Sensing diagnostic module/Automatic occupant sensing
23	Radio/DVD/Heating, ventilation/Air conditioning control
24	Display
25	Heated steering wheel
26	Wireless charger
27	Steering wheel controls
28	-
29	Visor vanity lamp
30	-
31	Retained accessory power/Accessory
32	-

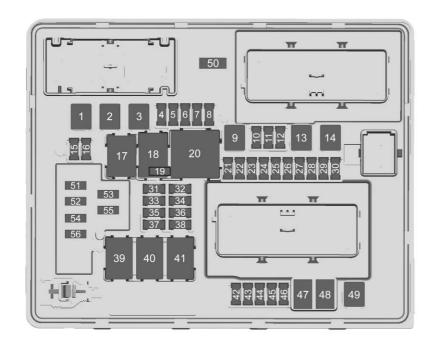
Fuses	Usage
33	Front heating, ventilation/Air conditioning control blower
Circuit Breakers	Usage
CB1	Auxiliary power socket
CB7	-
Relays	Usage
K10	Retained accessory power/Accessory
K605	Logistics
K644	Retained accessory power/Accessory / Glovebox release

Rear Compartment Fuse Block



The rear compartment fuse block is behind a cover on the driver side of the rear compartment.

The vehicle may not be equipped with all of the fuses, relays, and features shown.



Fuses	Usage
*1	Rear driver control module/DC DC transformer
2	Left window
3	Body control module 8
*4	Alternate current inverter
5	Passive entry/Passive start/Battery 1
6	Body control module 4
7	Heated mirrors
8	Amplifier
9	Rear window demister
*10	Glass break
*11	Trailer connector
12	OnStar (if equipped)
13	Right window
14	Electric parking brake

Fuses	Usage	Fuses	Usage	Fuses	Usage
15	-	*31	Transfer case control	44	-
16	Boot release		module/Rear control drive module	45	Battery regulated
*19	Logistics	32	Theft module/		voltage control
21	Mirror window module	32	Universal garage door opener/Rain sensor	46	Engine control module/Battery
22	-	*33	Ultrasonic parking	47	=
23	Canister vent		assist	48	-
24	Body control	*34	Radio/DVD	*49	Trailer module
	module 2	*35	-/Exhaust valve	*53	-
*25	Rear vision camera	*36	Trailer	55	-
*26	Front ventilated seats	37	37 Fuel system control	_	
*27	*27 Side blind zone alert/ Lane departure		module	Relays	Usage
		*38	Fuel pump prime/	*17	Trailer
	warning/External		Exhaust valve	*18	Logistics
	object calculating module	39	=	20	Rear window
*28	Trailer/Sunshade	*42	Memory seat module		demister
*29	Rear heated seats	43	Body control module 3	*40	Run/Crank 2 V-Series
				*41	Fuel pump prime
*30	Semi-active damping system				relay/Run crank 2

Relays	Usage
50	Child door lock security
51	Rear closure
52	Rear closure 2
54	Door lock security
*56	Fuel door

^{*} Optional

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 and a serious crash. See Vehicle Load Limits \$ 184.
 (Continued)

Warning (Continued)

- 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.
- Worn or old tyres can cause a crash. If the tread is badly worn, replace them.

(Continued)

Warning (Continued)

- 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.

See *Tyre Pressure for High-Speed Operation ⇒ 285* for inflation pressure adjustment for high-speed driving.

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* \$\dip 281\$.

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* ⇒ 292.

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.
- 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.

Run-Flat Tyres

This vehicle, when new, may have had run-flat tyres. There is no spare tyre, no tyre changing equipment and no place to store a tyre in the vehicle.

The vehicle also has a Tyre Pressure Monitor System (TPMS) that indicates a loss of tyre pressure in any of the tyres.



If the low tyre warning light displays on the instrument cluster, the handling capabilities will be reduced during severe manoeuvres. Driving too fast could cause loss of control and you or others could be injured. Do not drive over 90 km/h (55 mph) when the low tyre warning light is displayed. Drive cautiously and check the tyre pressures as soon as possible.

Run-flat tyres can be driven on with no air pressure. There is no need to stop on the side of the road to change the tyre. Continue driving; however, do not drive too far or too fast. Driving on the tyre may not be possible if there is permanent damage. To prevent permanent damage, keep speed below 80 km/h (50 mph). With a light load the vehicle can be driven up to 100 km (60 mi); with a moderate load 80 km (50 mi); and a heavy load 45 km (25 mi). As soon as possible, contact the nearest authorised GM or run-flat servicing facility for inspection and repair or replacement.

When driving on a deflated run-flat tyre, avoid potholes and other road hazards that could damage the tyre and/or wheel beyond repair. When a tyre has been damaged, or driven any distance while deflated, check with an authorised run-flat tyre service centre to determine whether the tyre can be repaired or should be replaced. To maintain the run-flat feature, all replacement tyres must be run-flat tyres.

To locate the nearest GM or run-flat servicing facility, call Customer Assistance.

The valve stems on run-flat tyres have sensors that are part of the TPMS. See *Tyre Pressure Monitor System* ♀ 285. These sensors contain batteries that are designed to last for 10 years under normal driving conditions. See your dealer for wheel or sensor replacement.

Caution

Using liquid sealants can damage the tyre valves and tyre pressure monitor sensors in the run-flat tyres. This damage is not covered by the vehicle warranty. Do not use liquid sealants in run-flat tyres.

Low-Profile Tyres

If the vehicle has 265/35ZR19 or 295/30ZR19 size tyres, they are classified as low-profile tyres.

Caution

Low-profile tyres are more susceptible to damage from road hazards or curb impact than standard profile tyres. Tyre and/or wheel assembly damage can occur when coming into contact with road hazards like potholes, or sharp edged objects, or when sliding into a kerb. The warranty does not cover this type of damage. Keep tyres set to the correct inflation pressure and when possible, avoid contact with kerbs, potholes, and other road hazards.

Summer Tyres

High Performance Summer Tyres

This vehicle may come with 245/40R18 (front) and 275/35R18 (rear) or 265/35ZR19 (front) and 295/30ZR19 (rear) high performance summer tires. 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. It is recommended that winter tyres be installed on the vehicle if frequent driving at temperatures below approximately 5 °C (40 °F) or on ice or snow covered roads is expected. See *Winter Tyres* ⇒ 281.

Caution

High performance summer tires have rubber compounds that lose flexibility and may develop surface cracks in the tread area at temperatures below -7 °C (20 °F). Always store high performance summer tires indoors and at temperatures above -7 °C (20 °F) when not in use. If the tires have been subjected to -7 °C (20 °F) or less, let them warm up in a heated space to at least 5 °C (40 °F) for 24 hours or more before being installed or driving a vehicle on which they are installed. Do not

(Continued)

Caution (Continued)

apply heat or blow heated air directly on the tyres. Always inspect tyres before use. See *Tyre Inspection* \Rightarrow 289.

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.
- Poor handling.

(Continued)

Caution (Continued)

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 ⇒ 184*.

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.

How to Check

Use a good quality pocket-type gauge to check the 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 the 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 in high, press on the metal stem in the centre of the tyre valve to release air. Re-check the tyre pressure with the tyre gauge.

Put the valve caps back on the valve stems to keep out dirt and moisture and prevent leaks. Use only valve caps designed for the vehicle by GM. TPMS sensors could be damaged and would not be covered by the vehicle warranty.

Tyre Pressure for High-Speed Operation



Driving at high speeds, 160 km/h (100 mph) or higher, puts additional strain on tyres. Sustained high-speed driving causes excessive heat build-up and can cause sudden tyre failure. This could cause 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 allow the vehicle to be driven at high speeds, make sure the tyres are rated for high-speed operation, are in excellent condition, and are set to the correct cold tyre inflation pressure for the vehicle load.

Vehicles with P245/45R17 95V, P245/40R18 93V, or 255/35R19 96V size tyres require inflation pressure adjustment when driving the vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold tyre inflation pressure to 280 kPa (41 psi).

Vehicles with 245/40R18 93Y and 275/35R18 95Y or 265/35ZR19 (94Y) and 295/30ZR19 (100Y) size tyres require inflation pressure adjustment when driving the vehicle at speeds of 160 km/h (100 mph) or higher. Set the cold tyre inflation pressure to 300 kPa (44 psi).

Sustained operation at speeds over 160 km/h (100 mph) requires a load limit of the driver and one passenger, with no additional cargo. When loaded above this level, up to the GVW, do not operate the vehicle above 160 km/h (100 mph).

Return the tyres to the recommended cold tyre inflation pressure when high-speed driving has ended. See *Vehicle Load Limits* \Rightarrow 184 and *Tyre Pressure* \Rightarrow 283.

Tyre Pressure Monitor System

Caution

Modifications made to the Tyre Pressure Monitor System (TPMS) by anyone other than an 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*

⇒ 286 for additional information.

See Declaration of Conformity \Rightarrow 334.

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 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* \$\phi\$ 184.

A message to check the pressure in a specific tyre displays in the Driver Information Centre (DIC). 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)* \(\Dig \) 136.

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 needs to be inflated to the proper pressure.

A Tyre and Loading Information label, attached to your vehicle, shows the size of the original equipment tyres and the correct inflation pressure for the tyres when they are cold. See

Vehicle Load Limits \Rightarrow 184 for an example of the Tyre and Loading Information label and its location. Also see *Tyre Pressure* \Rightarrow 283.

The TPMS can warn about a low tyre pressure condition but it does not replace normal tyre maintenance. See *Tyre Inspection* \Rightarrow 289, *Tyre Rotation* \Rightarrow 290, and *Tyres* \Rightarrow 280.

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 \$\dip 296\$ for information regarding the inflator kit materials and instructions.

Tyre Loading Selection — If Equipped

Adjust the vehicle tyre pressures to match the load condition according to the Tyre and Loading Information label. See *Vehicle Load Limits* \$\dip 184\$.

Select the appropriate Tyre Loading setting. See *Instrument Cluster* \Rightarrow 119.

If tyre pressures and Tyre Loading do not match, the tyre pressure light may indicate a low tyre. See *Tyre Pressure*

⇒ 283.

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 pressure warning light flashes for about one minute and then stays on for the remainder of the ignition cycle. A DIC warning message also displays. The malfunction light and DIC warning message come on at each

ignition cycle until the problem is corrected. Some of the conditions that can cause these to come on are:

- One of the road 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 malfunction light and the DIC message should go off when the TPMS sensors are installed and

- the sensor matching process is performed successfully. See your dealer for service.
- Replacement 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 ⇒ 292.
- 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 pressure 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 vehicle's 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 tyre. 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.
- Place the vehicle in Service Mode. See *Ignition Positions* ⇒ 189.
- Make sure the Tyre Pressure info display option is turned on. The info displays on the DIC can be

- turned on and off through the Settings menu. See *Driver Information Centre (DIC)* ⇒ 136.
- 4. Use the five-way DIC control on the right side of the steering wheel to scroll to the Tyre Pressure screen under the DIC info page. See *Driver Information Centre (DIC)* ⇒ 136.
- Press and hold the SEL button in the centre of the five-way DIC control.
 - The horn sounds twice to signal the receiver is in relearn mode and the TYRE LEARNING ACTIVE message displays on the DIC screen.
- 6. Start with the driver side front tyre.
- 7. 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.

- 8. Proceed to the passenger side front tyre, and repeat the procedure in Step 7.
- Proceed to the passenger side rear tyre, and repeat the procedure in Step 7.
- 10. Proceed to the driver side rear tyre, and repeat the procedure in Step 7. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tyre, and the TPMS sensor matching process is no longer active. The TYRE LEARNING ACTIVE message on the DIC display screen goes off.
- 11. Turn the vehicle off.
- 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

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.

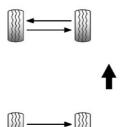
See When It Is Time for New Tyres

⇒ 291 and Wheel Replacement

⇒ 294.

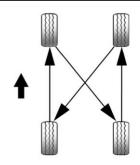
Directional tyres should not be rotated. Each tyre and wheel should be used only in the position it is in. Directional tyres

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 \Rightarrow 283 and Vehicle Load Limits \Rightarrow 184.

Reset the Tyre Pressure Monitor System. See *Tyre Pressure Monitor Operation ⇒ 286*.

Check that all wheel nuts are properly tightened. See "Wheel Nut Torque" under *Capacities and Specifications* \Rightarrow 326.

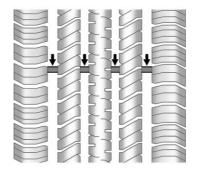
⚠ Warning

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* \Rightarrow 289 and *Tyre Rotation* \Rightarrow 290.

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 ⇒ 290 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.

Marning

Tyres could explode during improper service. Attempting to mount or dismount a tyre could cause injury or death. Only your dealer or authorised tyre service centre should mount or dismount the 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. Never exceed the winter tyre's maximum speed capability when using winter tyres with a lower speed rating.



Never drive faster than the speed the tyres are rated, regardless of the legal speed limit. When frequently driving the vehicle at high speeds

(Continued)

Warning (Continued)

and/or for prolonged periods of time, check with your vehicle/tyre dealer for the proper type of tyres to use for the specific driving and weather conditions.

⚠ Warning

Mixing tyres of different sizes (other than those originally installed on the vehicle), 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 tyre on all four wheels.

⚠ Warning

Using bias-ply tyres on the vehicle may cause the wheel rim flanges to develop cracks after (Continued)

Warning (Continued)

many miles of driving. 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.

The Tyre and Loading Information label indicates the original equipment tyres on the vehicle. See *Vehicle Load Limits* ⇔ *184* 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.

riangle 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

(Continued)

Warning (Continued)

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 \Rightarrow 292 and Accessories and Modifications \Rightarrow 246.

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 aim, bumper height, vehicle ground clearance, and tyre or tyre chain clearance to the body and chassis.

Used Replacement Wheels



Replacing a wheel with a used one is dangerous. How it has been used or how far it has been driven may be unknown. It could fail suddenly and cause a crash. When replacing wheels, use a new GM original equipment wheel.

Tyre Chains

Use tyre chains or other traction devices only when necessary.

Before using tyre chains, check with the tyre manufacturer to make sure tyre chains are compatible with the tyres on the vehicle. Follow the manufacturer's instructions.

Tyre chains are only permitted on P245/40R18 93V size tyres. Install them on the rear tyres only, as tightly as possible with the ends securely fastened.

Only use low profile tyre chains that are the proper size for the tyres and add no more than 6 mm thickness to the tyre tread and inner sidewall.

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

If the vehicle has run-flat tyres, there is no need to stop on the side of the road to change a flat tyre. See *Run-Flat Tyres* \Rightarrow 282.

⚠ Warning

Special tools and procedures are required to service a run-flat tyre. If these special tools and procedures are not used, injury or vehicle damage may occur. Always be sure the proper tools and procedures, as described in the service manual, are used.

It is unusual for a tyre to blow out while driving, especially if the tyres are maintained properly. See *Tyres* ⇒ 280. 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

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 this vehicle does not have run-flat tyres and a tyre goes flat, avoid further tyre and wheel damage by driving slowly to a level place, well off the road, if possible.

- 1. Turn on the hazard warning flashers. See Hazard Warning Flashers \$ 153.
- 2. Apply the parking brake firmly.
- 3. Put an automatic transmission in P (Park) or a manual gearbox in 1 (First) or R (Reverse).
- Turn off the ignition.
- Inspect the flat tyre.

∠!\ 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 authorised tyre service centre repair or replace the flat tyre as soon as possible.

If this vehicle has a tyre sealant kit and the tyre has been separated from the wheel, has damaged sidewalls, or has a puncture larger than 6 mm (0.25 in), the tyre is too severely damaged for the tyre sealant and compressor kit to be effective. If the tyre has a puncture less than 6 mm (0.25 in) in the tread area of the tyre, see Tyre Sealant and Compressor Kit \$ 296.

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. 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 \Rightarrow 195.



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, 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.

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:



- Selector Switch (Sealant/Air or Air Only)
- 2. On/Off Button
- 3. Pressure Gauge

- 4. Pressure Deflation Button
- 5. Tyre Sealant Canister
- 6. Sealant/Air Hose (Clear)
- 7. Air Only Hose (Black)
- 8. Power Plug
- Canister Release Button (Under Sealant/Air Hose)

Tyre Sealant

Read and follow the safe handling instructions on the label adhered to the sealant canister.

Check the tyre sealant expiration date on the sealant canister. The sealant canister should be replaced before its expiration date. Replacement sealant canisters are available at your local dealer. See "Removal and Installation of the Sealant Canister" later in this section.

There is only enough sealant to seal one tyre. After usage, the sealant canister and sealant/air hose assembly must be replaced. See "Removal and Installation of the Sealant Canister" later in this section.

Using the Tyre Sealant and Compressor Kit to Temporarily Seal and Inflate a Punctured Tyre

Follow the directions closely for correct sealant usage.



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.

See *If a Tyre Goes Flat* \Rightarrow 295 for other important safety warnings.

Do not remove any objects that have penetrated the tyre.

- Remove the tyre sealant and compressor kit from its storage location. See Storing the Tyre Sealant and Compressor Kit

 303.
- 2. Unwrap the sealant/air hose (6) and the power plug (8).
- Place the kit on the ground.
 Make sure the tyre valve stem is positioned close to the ground so the hose will reach it.
- Remove the valve stem cap from the flat tyre by turning it anticlockwise.
- Attach the sealant/air hose (6) onto the tyre valve stem. Turn it clockwise until it is tight.

6. Plug the power plug (8) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets.
See Power Sockets ⇒ 114.

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.

- Start the vehicle. The vehicle must be running while using the air compressor.
- 8. Press and turn the selector switch (1) anticlockwise to the Sealant + Air position.
- Press the on/off (2) button to turn the tyre sealant and compressor kit on.

The compressor will inject sealant and air into the tyre.

The pressure gauge (3) 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.

10. Inflate the tyre to the recommended inflation pressure using the pressure gauge (3). The recommended inflation pressure can be found on the Tyre and Loading Information label. See *Tyre Pressure*

⇒ 283.

The pressure gauge (3) 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.

(Continued)

Caution (Continued)

The tyre is too severely damaged and the tyre sealant and compressor kit cannot inflate the tyre. Remove the power plug from the accessory power outlet and unscrew the inflating hose from the tyre valve.

- Press the on/off button (2) 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 12–18 must be done immediately after Step 11.
 - Be careful while handling the tyre sealant and compressor kit as it could be warm after usage.
- 12. Unplug the power plug (8) from the accessory power outlet in the vehicle.

- Turn the sealant/air hose (6) anticlockwise to remove it from the tyre valve stem.
- 14. Replace the tyre valve stem cap.
- Replace the sealant/air hose (6), and the power plug (8) back in their original location.



- 6. If the flat tyre was able to inflate to the recommended inflation pressure, remove the maximum speed label from the sealant canister (5) and place it in a highly visible location. Do not exceed the speed on this label until the damaged tyre is repaired or replaced.
- Return the equipment to its original storage location in the vehicle.

- 18. Immediately drive the vehicle 8 km (5 mi) to distribute the sealant in the tyre.
- 19. Stop at a safe location and check the tyre pressure. Refer to Steps 1–11 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.

20. Wipe off any sealant from the wheel, tyre and vehicle.

- 21. Dispose of the used sealant canister (5) and sealant/air hose(6) assembly at a local dealer or in accordance with local regulations and practices.
- Replace with a new canister assembly available from your dealer.
- 23. After temporarily sealing the tyre using the tyre sealant and compressor kit, take the vehicle to an authorised dealer 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)

To use the air compressor to inflate a tyre with air only and not sealant:



See *If a Tyre Goes Flat* \Rightarrow 295 for other important safety warnings.

- Remove the tyre sealant and compressor kit from its storage location. See Storing the Tyre Sealant and Compressor Kit

 303.
- 2. Unwrap the air only hose (7) and the power plug (8).
- Place the kit on the ground.
 Make sure the tyre valve stem is positioned close to the ground so the hose will reach it
- Remove the tyre valve stem cap from the flat tyre by turning it anticlockwise.
- 5. Attach the air only hose (7) onto the tyre valve stem by turning it clockwise until it is tight.
- 6. Plug the power plug (8) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets.

 See Power Sockets

 114

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.

- Start the vehicle. The vehicle must be running while using the air compressor.
- 8. Press and turn the selector switch (1) clockwise to the Air Only position.
- 9. Press the on/off (2) button to turn the compressor on.

The compressor will inflate the tyre with air only.

10. Inflate the tyre to the recommended inflation pressure using the pressure gauge (3). The recommended inflation pressure can be found on the Tyre and Loading Information label. See *Tyre Pressure* ♀ 283.

The pressure gauge (3) may read higher than the actual tyre pressure while the compressor is on. Turn the compressor off to get an accurate reading. The

compressor may be turned on/off until the correct pressure is reached.

If you inflate the tyre higher than the recommended pressure you can adjust the excess pressure by pressing the pressure deflation button (4) until the proper pressure reading is reached. This option is only functional when using the air only hose (7).

- Press the on/off button (2) to turn the tyre sealant and compressor kit off.
 - Be careful while handling the tyre sealant and compressor kit as it could be warm after usage.
- Unplug the power plug (8) from the accessory power outlet in the vehicle.
- Disconnect the air only hose (7) from the tyre valve stem, by turning it anticlockwise, and replace the tyre valve stem cap.

- 14. Replace the air only hose (7) and the power plug (8) and cord back in its original location.
- Place the equipment in the original storage location in the vehicle.



The tyre sealant and compressor kit has an accessory adapter located in a compartment on the bottom of its housing that may be used to inflate air mattresses, balls, etc.

Removal and Installation of the Sealant Canister

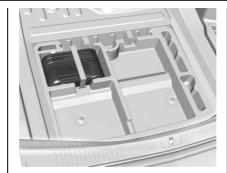
To remove the sealant canister:

- Unwrap the sealant/air hose to access the canister release button.
- 2. Press the canister release button (9).
- 3. Pull up and remove the canister.
- Replace with a new canister which is available from your dealer.
- 5. Push the new canister into place.
- 6. Rewrap the sealant/air hose.

Storing the Tyre Sealant and Compressor Kit

To access the tyre sealant and compressor kit:

- 1. Open the boot. See *Boot* \Rightarrow 39.
- 2. Lift the cover.



- 3. Remove the strap.
- 4. Remove the tyre sealant and compressor kit.

To store the tyre sealant and compressor kit, reverse the steps.

Jump Starting

For more information about the vehicle battery, see *Battery* \Rightarrow 263.

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.



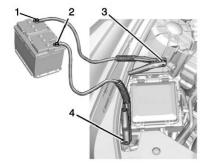
Batteries can hurt you. They can be dangerous because:

- 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. Good Battery Positive **Terminal**
- 2. Good Battery Negative **Terminal**

- 3. Discharged Battery Remote Positive terminal
- 4. Discharged Battery Remote **Negative Ground Terminal**

The jump start positive terminal (1) and negative post (2) are on the battery of the vehicle providing the jump start.

The jump start remote positive terminal (3) and the remote negative ground terminal (4) for the discharged battery are on the passenger side of the vehicle.

The positive jump start connection for the discharged battery is under a red cover. Remove the cover to expose the terminal.

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

Caution

If the other vehicle does not have a 12-volt system with a negative ground, both vehicles can be (Continued)

Caution (Continued)

damaged. Only use a vehicle that has a 12-volt system with a negative ground for jump starting.

- Position the two vehicles so that they are not touching.
- Set the parking brake firmly and put the shift lever in P (Park) with an automatic transmission. or Neutral with a manual gearbox.

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.

 Turn ignition off. Turn off all lights and accessories in both vehicles, except the hazard warning flashers if needed.

⚠ Warning

An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing, and tools away from any 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.

riangle Warning

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

- Connect one end of the red positive (+) cable to the remote positive (+) terminal on the discharged battery.
- Connect the other end of the red positive (+) cable to the positive (+) terminal of the good battery.
- Connect one end of the black negative (-) cable to the negative (-) terminal of the good battery.
- Connect the other end of the black negative (-) cable to the remote negative (-) grounding terminal for the discharged battery.
- Start the engine in the vehicle with the good battery and run the engine at idle speed for at least four minutes.

 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.

After starting the disabled vehicle and removing the jump leads, allow it to idle for several minutes.

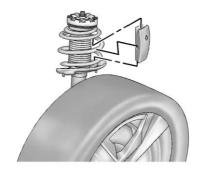
Towing the Vehicle

Caution

Incorrectly towing a disabled vehicle may cause damage. The damage would not be covered by the vehicle warranty.

Do not lash or hook to suspension components. Use the proper straps around the tyres to secure the vehicle.

Use only a flatbed tow truck for towing a disabled vehicle. Never use a sling type lift or damage will occur. Use ramps to help reduce approach angles if necessary. A towed vehicle should have its drive wheels off the ground. Consult a professional towing service if the disabled vehicle must be towed.



Due to low ramp angles on the V-Series only, use care when loading the vehicle onto a flatbed carrier. Front spring spacers were provided for lifting the front suspension if more clearance is necessary when towing.

Consult your dealer or a professional towing service if the disabled vehicle must be towed.

Front Tow Eye

Caution

Improper use of the tow eye can cause vehicle damage. Use caution and low speeds to prevent damage to the vehicle.

If the vehicle is equipped with tow eye, only use the tow eye to pull the vehicle onto a flatbed car carrier from a flat road surface. Do not use the tow eye to pull the vehicle from snow, mud or sand. The tow eye is located underneath the load floor, near the spare tyre or the compressor kit, if equipped.

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 and turn it until it is fully tightened. When the tow eye is removed, reinstall the cover with the notch in the original position.



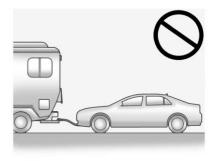
Recreational Vehicle Towing

Recreational vehicle towing means towing the vehicle behind another vehicle such as a motor home. The two most common types of recreational vehicle towing are known as dinghy towing and dolly towing. Dinghy towing is towing the vehicle with all four wheels on the ground. Dolly towing is towing the vehicle with two wheels on the ground and two wheels up on a device known as a dolly.

Here are some important things to consider before recreational vehicle towing:

- What is the towing capacity of the towing vehicle? Be sure to read the tow vehicle manufacturer's recommendations.
- What is the distance that will be travelled? Some vehicles have restrictions on how far and how long they can tow.
- Is the proper towing equipment going to be used? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is the vehicle ready to be towed? Just as preparing the vehicle for a long trip, make sure the vehicle is prepared to be towed.

Dinghy Towing



Caution

If the vehicle is towed with all four wheels on the ground, the drivetrain components could be damaged. The repairs would not be covered by the vehicle warranty. Do not tow the vehicle with all four wheels on the ground.

The vehicle was not designed to be towed with all four wheels on the ground. If the vehicle must be towed, a dolly should be used. See the following information on dolly towing.

Caution

Use of a shield mounted in front of the vehicle grille could restrict airflow and cause damage to the transmission. The repairs would not be covered by the vehicle warranty. If using a shield, only use one that attaches to the towing vehicle.

Dolly Towing (Rear-Wheel-Drive Vehicles)



To dolly tow a rear-wheel-drive vehicle from the rear:

- Attach the dolly to the tow vehicle following the dolly manufacturer instructions.
- 2. Put the rear wheels on the dolly.
- 3. Shift the transmission to P (Park).
- Firmly apply the parking brake.

- Use an adequate clamping device designed for towing to ensure that the front wheels are locked into the straight-ahead position.
- Secure the vehicle to the dolly following the manufacturer instructions.
- Release the parking brake only after the vehicle being towed is firmly attached to the towing vehicle.
- 8. Turn the ignition to off.

Dolly Towing (All-Wheel Drive Vehicles)





Vehicles with all-wheel drive cannot be dolly towed.

Appearance Care

Exterior Care

Locks

Washing the Vehicle

To preserve the vehicle's finish, wash it often and out of direct sunlight.

Caution

Do not use petroleum-based, acidic, or abrasive cleaning agents as they can damage the vehicle's paint, metal, or plastic parts. If damage occurs, it would not be covered by the vehicle warranty. Approved cleaning products can be obtained from your dealer. Follow all manufacturer directions regarding (Continued)

Caution (Continued)

correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.

Caution

Avoid using high-pressure 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.

Caution

Do not power wash any component under the bonnet that has this symbol.

This could cause damage that would not be covered by the vehicle warranty.

If using an automatic car wash, follow the car wash instructions. The 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, chrome or stainless steel. To prevent damage always follow these cleaning instructions:

- Be sure the moulding is cool to the touch before applying any cleaning solution.
- Use only approved cleaning solutions for aluminium, chrome or stainless steel. 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 cleaners that are not intended for automotive use.
- Use a nonabrasive wax on the vehicle after washing to protect and extend the moulding finish.

Carbon Fiber Care

Cleaning Exterior Lamps/Lenses, Emblems, Decals, and Stripes

Use only lukewarm or cold water, a soft cloth, and a car washing soap to clean exterior lamps, lenses, emblems, decals, and stripes. Follow instructions under "Washing the Vehicle" previously in this section.

Lamp covers are made of plastic, and some have a UV protective coating. Do not clean or wipe them when dry.

Do not use any of the following on lamp covers:

Abrasive or caustic agents.

- Washer fluids and other cleaning agents in higher concentrations than suggested by the manufacturer.
- Solvents, alcohols, fuels, or other harsh cleaners.
- Ice scrapers or other hard items.
- Aftermarket appearance caps or covers while the lamps are illuminated, due to excessive heat generated.

Caution

Failure to clean lamps properly can cause damage to the lamp cover that would not be covered by the vehicle warranty.

Caution

Using wax on low gloss black finish stripes can increase the gloss level and create a non-uniform finish. Clean low gloss stripes with soap and water only.

Air Intakes

Clear debris from the air intakes, between the bonnet and windscreen when washing the vehicle.

Windscreen and Wiper Blades

Clean the outside of the windscreen with glass cleaner.

Clean rubber blades using a 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 weatherstrip lubricant on weatherstrips to make them last longer, seal better, and not stick or squeak. Lubricate weatherstrips at least once a year. Hot, dry climates may require more frequent application. Black marks from rubber material on painted surfaces can be removed by rubbing with a clean cloth. See *Recommended Fluids and Lubricants* \$\display 322.

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, 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

(Continued)

Caution (Continued)

brushes. Damage could occur and the repairs would not be covered by the vehicle warranty.

Brake System

Visually inspect brake lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Inspect disc brake pads for wear and discs for surface condition. Inspect drum brake linings/ shoes for wear or cracks. Inspect all other brake parts.

Steering, Suspension, and Chassis Components

Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year.

Inspect power steering for proper attachment, connections, binding, leaks, cracks, chafing, etc.

Visually check constant velocity joint boots and axle seals for leaks.

Body Component Lubrication

Lubricate all key lock cylinders, bonnet hinges, liftgate hinges, and the steel fuel door hinge, unless the components are plastic. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

Underbody Maintenance

At least twice a year, spring and fall, use plain water to flush any corrosive materials from the underbody. Take care to thoroughly clean any areas where mud and other debris can collect.

Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

Sheet Metal Damage

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the vehicle warranty.

Finish Damage

Quickly repair minor chips and scratches with touch-up materials available from your dealer to avoid corrosion. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

Chemical Paint Spotting

Airborne pollutants can fall upon and attack painted vehicle surfaces causing blotchy, ring-shaped 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. Newspapers or dark garments can 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.

Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage. Apply all cleaners directly to the cleaning cloth. Do not spray cleaners on any switches or controls. Remove cleaners quickly.

Before using cleaners, read and follow all safety instructions on the label. While cleaning the interior, open the doors and windows to get proper ventilation.

To prevent damage, do not clean the interior using the following cleaners or techniques:

- Never use a razor or any other sharp object to remove soil from any interior surface.
- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with too much pressure.
- Do not use laundry detergents or dishwashing soaps with degreasers. For liquid cleaners, use approximately 20 drops per 3.8 L (1 gal) of water. A concentrated soap solution will create streaks and attract dirt. Do not use solutions that contain strong or caustic soap.
- Do not heavily saturate the upholstery when cleaning.
- Do not use solvents or cleaners containing solvents.

Interior Glass

To clean, use a terry cloth fabric dampened with water. Wipe droplets left behind with a clean dry cloth. If necessary, use a commercial glass cleaner after cleaning with plain water.

Caution

To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.

Cleaning the windscreen with water during the first three to six months of ownership will reduce tendency to fog.

Speaker Covers

Vacuum around a speaker cover gently, so that the speaker will not be damaged. Clean spots with water and mild soap.

Coated 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 vacuum brush attachment is being used, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible:

- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soil, remove as much as possible prior to vacuuming.

To clean:

- Saturate a clean, lint-free colour-fast cloth with water. Microfiber cloth is recommended to prevent lint transfer to the fabric or carpet.
- Remove excess moisture by gently wringing until water does not drip from the cleaning cloth.
- 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.

- Continue gently rubbing the soiled area until there is no longer any colour transfer from the soil to the cleaning cloth.
- 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.

After cleaning, use a paper towel to blot excess moisture.

Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays

Use a microfibre cloth on high gloss surfaces or vehicle displays. First, use a soft bristle brush to remove dirt that can scratch the surface. Then gently clean by rubbing with a microfibre cloth. 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 vehicle warranty.

Instrument Panel, Leather, Vinyl, Other Plastic Surfaces, Low Gloss Paint Surfaces, and Natural Open Pore Wood Surfaces

Use a soft microfiber cloth dampened with water to remove dust and loose dirt. For a more thorough cleaning, use a soft microfiber cloth dampened with a mild soap solution.

Caution

Soaking or saturating leather, especially perforated leather, as well as other interior surfaces, may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, or spot removers. Do not use cleaners that contain silicone or wax-based products. Cleaners containing these solvents can permanently change the appearance and feel of leather or soft trim, and are not recommended.

Do not use cleaners that increase gloss, especially on the instrument panel. Reflected glare can decrease visibility through the windscreen 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 Seat Belts

Keep belts clean and dry.

⚠ Warning

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

Floor Mats

⚠ Warning

If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals.

Interference with the pedals can cause unintended acceleration and/ or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

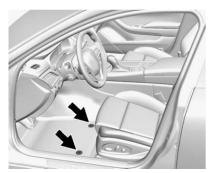
Use the following guidelines for proper floor mat usage.

- The original equipment floor mats were designed for your vehicle.
 If the floor mats need replacing, it is recommended that GM certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the pedals.

 Always check that the floor mats do not interfere with the pedals.
- Do not use a floor mat if the vehicle is not equipped with a floor mat retainer on the driver side floor.
- Use the floor mat with the correct side up. Do not turn it over.
- Do not place anything on top of the driver side floor mat.
- Use only a single floor mat on the driver side.
- Do not place one floor mat on top of another.

The driver side floor mat is held in place by two button-type retainers.

Removing and Replacing the Floor Mats



- Pull up on the rear of the floor mat to unlock the retainers and remove.
- Reinstall by lining up the floor mat retainer openings over the carpet retainers and snap into position.
- 3. Make sure the floor mat is properly secured in place. Verify the floor mat does not interfere with the pedals.

Service and Maintenance

General Information	18
Scheduled Maintenance Scheduled Maintenance 3	19
Recommended Fluids, Lubricants, and Parts Recommended Fluids and	
Lubricants 3	22
Maintenance Replacement Parts 3	23

General Information

Caution

Damage caused by improper maintenance can lead to costly repairs and may not be covered by the vehicle warranty. Maintenance intervals, checks, inspections, recommended fluids, and lubricants are important to keep the vehicle in good working condition.

Do not have chemical flushes that are not approved by GM performed on the vehicle. The use of flushes, solvents, cleaners, or lubricants that are not approved by GM could damage the vehicle, requiring expensive repairs that are not covered by the vehicle warranty.

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

Change engine oil and filter when indicated by the oil life system, at 15 000 km (30 000 km if equipped with 2.0L L4 engine), or at one year, whichever comes first. 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.

Vehicle Inspection

Inspect the following items when indicated by the oil life system, at 15 000 km (30 000 km if equipped with 2.0L L4 engine), or at one year, whichever comes first:

Change the engine oil and filter.
 Reset the oil life system.

- Engine coolant level check.
- Engine cooling system inspection.
 Visual inspection of hoses, pipes, fittings, and clamps and replacement, if needed.
- 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.
- 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.
- Visually inspect gas strut for signs of wear, cracks, or other damage. Check the hold open ability of the strut. If the hold open is low, service the gas strut. See Gas Strut(s) ⇒ 267.

- 320
- 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.
- Inspect sunroof track and seal, if equipped. See *Sunroof* ⇒ 51.

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 (if applicable). More frequent passenger compartment air filter replacement may be needed if driving in areas with heavy traffic, poor air quality, high dust levels, or environmental allergens. Passenger compartment air filter replacement may also be needed if there is reduced airflow, window misting, or odours. Your GM retailer can help determine when to replace the filter.
- Engine air filter replacement.
 If driving in dusty conditions,
 inspect the filter at each oil
 change or more often as needed.

Note: All vehicles with rear-wheel drive — change driveline axle oil every 30 000 km, if vehicle is used for towing purposes.

Replace Every 2 Years

Note: All vehicles with rear-wheel drive — change driveline axle oil every 30 000 km, if vehicle is used for towing purposes.

Additional Maintenance Every 60 000 km

 Replace brake fluid. Or every two years, whichever occurs first.

Additional Maintenance Every 72 000 km

- All-wheel-drive vehicles only: Transfer case fluid 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 when used for taxi. police, or delivery service. During any maintenance, if a power washer is used to clean mud and dirt from the underbody, do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the fluid. Contaminated fluid will decrease the life of the transfer case and/or drive axles and should be replaced.
- 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 when used for taxi, police, or delivery service.

Additional Maintenance Every 80 000 km

- Visually check all fuel and vapour lines and hoses for proper attachment, connection, routing, and condition.
- Rear axle fluid replace, if equipped with limited slip differential.

Additional Maintenance Every 96 000 km

Spark plugs — replace.

Additional Maintenance Every 120 000 km

 Rear axle fluid — replace, (severe service) vehicles without limited slip differential.

Additional Maintenance Every 161 000 km

All-wheel-drive vehicles only:
 Transfer case fluid change. During any maintenance, if a power washer is used to clean mud and dirt from the underbody, do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the fluid.

 Contaminated fluid will decrease the life of the transfer case and/or drive axles and should be replaced.

Additional Maintenance Every 240 000 km

 Rear axle fluid — replace, (normal service) vehicles without limited slip differential.

Additional Maintenance Every 250 000 km

 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

Usage	Fluid/Lubricant	
Automatic Transmission	DEXRON-HP Automatic Transmission Fluid.	
Chassis Lubrication	Lubricant meeting requirements of NLGI #2, Category LB or GC-LB, see your retailer.	
Electronic Limited-Slip Differential (eLSD) Hydraulic Apply Fluid (V-Series Only)	DEXRON-VI Automatic Transmission Fluid.	
Engine Coolant	50/50 mixture of clean, drinkable water and use only DEX-COOL Coolant. See Cooling System \Leftrightarrow 255.	
Engine Oil	Engine oil meeting the dexos1 specification of the proper SAE viscosity grade. ACDelco dexos1 full synthetic is recommended. See <i>Engine Oil</i> \Rightarrow 251.	
Bonnet Latch Assembly, Secondary Latch, Pivots, Spring Anchor and Release Pawl	Lubricant meeting requirements of NLGI #2, Category LB or GC-LB. See your dealer.	
Hydraulic Brake System	DOT 3 Hydraulic Brake Fluid.	
Key Lock Cylinders, Bonnet and Door Hinges	Multi-Purpose Lubricant. See your dealer.	
Front and Rear Axle (All-Wheel Drive)	See your dealer.	
Rear Axle (Rear Wheel Drive)	See your dealer.	

Usage	Fluid/Lubricant
Transfer Case (All-Wheel Drive)	See your dealer.
Weatherstrip Conditioning	Weatherstrip Lubricant. See your dealer.
Windscreen Washer	Automotive windscreen washer fluid that meets regional freeze protection requirements.

Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

Part	GM Part Number	ACDelco Part Number
Engine Air Cleaner/Filter		
2.0L L4 Engine	20857930	A3178C
6.2L V8 Engine	22935844	A3203C
Engine Oil Filter	,	
2.0L L4 Engine	12640445	PF64
6.2L V8 Engine	12640445	PF64
Passenger Compartment Air Filter	13508023	CF185
Spark Plugs	·	
2.0L L4 Engine	12647827	41-125
6.2L V8 Engine	12642722	41–128

324 SERVICE AND MAINTENANCE

Part	GM Part Number	ACDelco Part Number
Wiper Blades		
Driver Side – 60 cm (23.6 in)	84017839	-
Passenger Side – 45 cm (17.7 in)	84017838	-

Technical Data

Vehicle	Identification
Vehicle	Identification

Number (VIN)

Service Parts Identification	. 323
Label	. 325
Vehicle Data	
Capacities and Specifications	. 326
Engine Drive Belt Routing	. 329

225

Vehicle Identification

Vehicle Identification Number (VIN)



This legal identifier is in the front corner of the instrument panel, on the driver side of the vehicle. It can be seen through the windscreen from outside. The Vehicle Identification Number (VIN) also appears on the Vehicle Certification and Service Parts labels and certificates of title and registration.

Engine Identification

The eighth character in the VIN is the engine code. This code identifies the vehicle's engine, specifications, and replacement parts. See "Engine Specifications" under *Capacities and Specifications* \Rightarrow 326 for the vehicle's engine code.

Service Parts Identification Label

There may be a label on the inside of the boot that contains the following information:

- Vehicle Identification Number (VIN)
- Model designation
- Paint information
- Production options and special equipment

If there is no label, there is a barcode on the certification label on the centre (B) pillar to scan for this same information.

Vehicle Data

Capacities and Specifications

The following approximate capacities are given in metric and English conversions. See *Recommended Fluids and Lubricants* \Rightarrow 322.

Application	Сара	Capacities	
Application	Metric	English	
Air Conditioning Refrigerant	For the air conditioning system refrigerant type and charge amount, see the refrigerant label under the bonnet. See your dealer for more information.		
Cooling System - Engine			
2.0L L4 Engine	8.8 L	9.3 qt	
6.2L V8 Engine (V-Series)	10.4 L	12.9 qt	
6.2L V8 Engine (V-Series) Low Temperature Radiator	2.0 L	2.2 qt	
Engine Oil with Filter			
2.0L L4 Engine RWD	4.7 L	5.0 qt	
2.0L L4 Engine AWD	5.7 L	6.0 qt	
6.2L V8 Engine	9.5 L	10.0 qt	
Fuel Tank	72 L	19 gal	
Transfer Case - AWD	0.8 L	0.8 qt	

Aunlication	Capacities	
Application	Metric	English
Rear Axle (with limited slip)	1.2 L	1.3 qt
Wheel Nut Torque	190 N• m	140 lb ft

All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling.

Engine Specifications

Engine	VIN Code	Horsepower	Torque	Spark Plug Gap
2.0L L4 Engine	X	200 kW (268 hp)@ 5500 min ⁻¹	400 N•m (295 lb ft)@ 3000 min ⁻¹	0.75–0.90 mm (0.030– 0.035 in)
6.2L V8 Engine	6	477 kW (640 hp)@ 6400 min ⁻¹	850 N•m (627 lb ft)@ 3600 min ⁻¹	0.725–0.875 mm (0.029– 0.034 in)

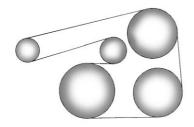
Fuel Consumption and Emissions Information

	Urban	Extra-Urban	Combined
2.0L L4 – RWD			
Carbon Dioxide (g/km)	246	141	180
Fuel Economy (L/100 km)	10.8	6.2	7.8

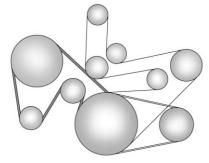
Fuel Consumption and Emissions Information (cont'd)

	Urban	Extra-Urban	Combined
2.0L L4 – AWD			
Carbon Dioxide (g/km)	257	156	193
Fuel Economy (L/100 km)	11.3	6.8	8.4
6.2L V8 (V-Series only)			
Carbon Dioxide (g/km)	459	203	298
Fuel Economy (L/100 km)	20.0	8.9	13.0

Engine Drive Belt Routing



2.0L L4 Engine



6.2L V8 Engine

Customer Information

Customer Information

Vehicle Data Recording and Privacy

venicle Data Recording and	
Privacy	336
OnStar	337
Infotainment System	337

Customer Information

Radio Frequency Identification (RFID)

Radio Frequency Identification (RFID) technology is used in some vehicles for functions such as tyre pressure monitoring and ignition system security. It is also used 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 Cadillac vehicles does not use or record personal information or link with any other Cadillac system containing personal information.

Libcurl and Unzip Acknowledgements

OnStar - Software Acknowledgements

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Declaration of Conformity

Transmission Systems

This vehicle has systems that transmit and/or receive radio waves subject to Directive 1999/5/EU or Directive 2014/53/EU. The manufacturers of the systems listed below declare conformity with Directive 1999/5/EU or Directive 2014/53/EU. The full text of the EU declaration of conformity for each system is available at the following Internet address: www.cadillaceurope.com/conformity.

Importer

Opel/Vauxhall Bahnhofsplatz 65423 Rüsselsheim am Main Germany

Rear Radar Unit

Autoliv ASP-AEC Autoliv B.V. & Co. KG Postfach 1320 D-85203 Dachau Germany

Operating frequency: 24.05 – 24.25 GHz

Maximum transmit power: 16 dBm EIRP

Aerial Module

FUBA Automotive Electronics GmbH TecCenter D-31162 Bad Salzdetfurth Germany

Aerial Module

Harada Industries Europe Limited Oskar-Schindler-Street 10 D-50769 Cologne Germany

Aerial Module

Kathrein Automotive GmbH Roemerring 1 D-31137 Hildesheim Germany

Aerial Module

Laird Daimlerring 31 D-31135 Hildesheim Germany

Front Radar Unit

Continental Automotive GmbH ADC Automotive Distance Control Systems GmbH Peter-Dornier-Strasse 10 D-88131 Lindau Germany

Operating frequency: 76 – 77 GHz Maximum transmit power: 30

dBm EIRP

Immobiliser

Continental Automotive GmbH Siemensstrasse 12 D-93055 Regensburg Germany

Operating frequency: 125 kHz

Maximum transmit power: 5.1 dBuA/M @ 10 m

Radio Remote Control Receiver

Continental Automotive GmbH Siemensstrasse 12 D-93055 Regensburg Germany

Electronic Key Transmitter

Denso Corporation 1-1 Showa-cho Kariya-shi Aichi-ken, 448-8661 Japan

Operating frequency: 433.92 MHz Maximum transmit power: -5.88 dBm

Electronic Key Receiver

Denso Corporation Waldeckerstaße 11 D-64546 Mörfelden-Walldorf Germany

Operating frequency: 125 kHz

Maximum transmit power: 0.968 mW

Garage Door Opener

Gentex GmbH Georg-Ohm-Strasse 6 D-74235 Erlenbach Germany

Operating frequency: 433.05 -

434.79 MHz

Maximum transmit power: 10 dBm

Radio

Harman International Industries Becker-Goering-Str. 16 Karlsbad Baden-Wuerttember D-76307 Germany

 Operating Frequency (MHz)
 Maximum Transmit Power (dBm)

 2400-2483.5
 9

 2400-2483.5
 19

 5725-5875
 13.9

Radio

Fujitsu Ten Limited 2-28 Gosho-dori 1-chome Hyogo-ku, Kobe 652-8510 Japan

Operating frequency: 2402 – 2480 MHz

Maximum transmit power: 1.5 mW

Performance Data Recording

Cosworth Electronics Ltd Brookfield Technology Centre Twentypence Road Cottenham, Cambridge CB24 8PS England

Tyre Pressure Sensors

Schrader Electronics Ltd. 11 Technology Park Belfast Road Antrim BT41 1QS, Northern Ireland United Kingdom

Operating frequency: 433.92 MHz Maximum transmit power: 10 dBm

OnStar Module

LG Electronics European Shared Service Center B.V. Krijgsman I 1186 DM Amstelveen The Netherlands

Operating	Maximum
Frequency	Transmit
(MHz)	Power (dBm)
880 – 915	33

Operating Frequency (MHz)	Maximum Transmit Power (dBm)
1710 – 1785	24
1850 – 1910	24
1920 – 1980	24
2500 – 2570	23

OnStar Module

LG Electronics European Shared Service Center B.V. Krijgsman 1 1186 DM Amstelveen

Operating Frequency (MHz)	Maximum Transmit Power (dBm)
2402 – 2480	4
2412 – 2462	18
880 – 915	33
1710 – 1785	24

Operating Frequency (MHz)	Maximum Transmit Power (dBm)
1850 – 1910	24
1920 – 1980	24
2500 – 2570	23

Radio Remote Control Transmitter

Continental Automotive GmbH Siemensstrasse 12 D-93055 Regensburg Germany

Operating frequency: 433.92 MHz Maximum transmit power: -5,7 dBm

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.

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.

OnStar

If the vehicle is equipped with OnStar® and has an active subscription, additional data may be collected through the OnStar system. This includes information about the vehicle's operation; collisions involving the vehicle; the use of the vehicle and its features; and, in certain situations, the location and approximate GPS speed of the vehicle. Refer to the OnStar Terms and Conditions and Privacy Statement on the OnStar website.

See OnStar Overview \$ 338.

Infotainment System

If the vehicle is equipped with a navigation system as part of the infotainment system, use of the system may result in the storage of destinations, addresses, telephone numbers, and other trip information. See the infotainment manual for information on stored data and for deletion instructions.

OnStar

OnStar Overview 338

OnStar Overview

OnStar system

OnStar is a personal connectivity and service assistant with integrated Wi-Fi hotspot. The OnStar service is available 24 hours a day, seven days a week.

Note: OnStar is not available for all markets. For further information, contact your retailer.

Note: In order to be available and operational, OnStar needs a valid OnStar subscription, functioning vehicle electrics, mobile service and GPS satellite link.

To activate the OnStar services and set up an account, press (3) and speak with an OnStar advisor.

Depending on the equipment of the vehicle, the following services are available:

- Emergency services and support in the case of a vehicle breakdown
- Wi-Fi hotspot
- Smartphone application

- Remote control, e.g. location of the vehicle, activation of horn and lights, control of central locking system
- Stolen vehicle assistance
- Vehicle diagnostics
- Destination download

Note: The OnStar module of the vehicle is deactivated after ten days without an ignition cycle. Functions requiring a data connection will be available again after switching on the ignition.

OnStar buttons









Privacy button

Press and hold wuntil an audio message is heard to activate or deactivate the transmission of the vehicle location.

Press (n) to answer a call or to end a call to an advisor.

Press 🕲 to access the Wi-Fi settings.

Service button

Press (a) to establish a connection to an advisor.

SOS button

Press so to establish a priority emergency connection to a specially trained emergency advisor.

Status LED

Green: The system is ready.

Green flashing: The system is on a call.

Red: A problem arose.

Off: System is in standby mode.

Red / green flashing for a short period of time: Transmission of the vehicle location has been deactivated.

OnStar services

General services

If you need any information concerning e.g. opening hours, point of interest and destinations or if you need any support e.g. in the case of a vehicle breakdown, a flat tyre and empty fuel tank, press 6 to establish a connection to an advisor.

Emergency services

In the case of an emergency situation, press (9) and talk to an advisor. The advisor then contacts emergency or assistance service providers and directs them to your vehicle.

In the case of an accident with activation of airbags or belt tensioners, an automatic emergency call is established. The advisor is immediately connected to your vehicle to see whether help is needed.

Wi-Fi hotspot

The Wi-Fi hotspot of the vehicle provides internet connectivity with a maximum speed of 4G/LTE.

Note: The Wi-Fi hotspot functionality is not available for all markets.

Up to seven devices may be connected.

To connect a mobile device with the Wi-Fi hotspot:

- 1. Press (N) and then select Wi-Fi settings on the Info-Display. The settings displayed include the Wi-Fi hotspot name (SSID), password and, if equipped, connection type.
- Start a Wi-Fi network search on your mobile device.
- Select your vehicle hotspot (SSID) when listed.
- When prompted, enter the password on your mobile device.

Note: To change the SSID or password, press on and talk to an OnStar advisor or login to your account.

To switch off the Wi-Fi hotspot functionality, press on to call an advisor

Smartphone app

With the smartphone app, some vehicle functions can be operated remotely:

- · Lock or unlock vehicle.
- Honk horn or flash lights.
- Check fuel level, engine oil life, if equipped, and tyre pressure (only with tyre pressure monitoring system).
- Send navigation destination to the vehicle, if equipped with a built-in navigation system.
- Locate vehicle on a map.
- Manage Wi-Fi settings.

To operate these functions, download the app from Apple's App Store or Google Play Store.

Remote control

If desired, use any phone to call an advisor, who can remotely operate specific vehicle functions. Find the respective OnStar phone number on our country-specific website.

The following functions are available:

- Lock or unlock vehicle.
- Provide information on the vehicle location.
- Honk horn or flash lights.

Stolen vehicle assistance

If the vehicle is stolen, report the theft to the authorities and request OnStar stolen vehicle assistance. Use any phone to call an advisor. Find the respective OnStar phone number on our country-specific website.

OnStar can provide support in locating and recovering the vehicle.

Theft alert

When the anti-theft alarm system is triggered, a notification is sent to OnStar. You are then informed about this event by text message or email.

Restart prevention

By sending remote signals, OnStar can prevent the vehicle from restarting once it has been turned off.

On-demand diagnostics

At any time e.g. if the vehicle displays a service message, press to contact an advisor and ask to complete a real-time diagnostic check to directly determine the issue. Depending on the results, the advisor will provide further support.

Diagnostic report

The vehicle automatically transmits diagnostic data to OnStar which sends a monthly email report to you and your preferred retailer.

Note: The retailer notification function can be disabled in your account.

The report contains the status of key operating systems of the vehicle like engine, transmission, airbags, ABS, and other major systems. It also provides information on possible maintenance items and tyre pressure (only with tyre pressure monitoring system).

To look at the information in greater detail, select the link within the email and log into your account.

Destination download

If equipped with this feature, a desired destination can be directly downloaded to the navigation system.

Press (b) to call an advisor and describe the destination or point of interest.

The advisor can look up any address or point of interest and directly send the destination to the built-in navigation system.

OnStar settings

OnStar PIN

To have full access to all OnStar services, a four-digit PIN is required. The PIN has to be personalised when first talking to an advisor.

To change the PIN, press of to call an advisor

Account data

An OnStar subscriber has an account, where all the data is stored. To request a change of the account information, press and talk to an advisor or login to your account.

If the OnStar service is used on another vehicle, press

and request that the account be transferred to the new vehicle

Note: In any case, if the vehicle is disposed of, sold or otherwise transferred, immediately inform OnStar about the changes and terminate the OnStar service on this vehicle.

Vehicle location

The vehicle location is transmitted to OnStar when service is requested or triggered. A message on the Info-Display informs about this transmission.

To activate or deactivate the transmission of the vehicle location, press and hold until an audio message is heard.

The deactivation is indicated by the status light flashing red and green for a short period of time and each time the vehicle is started.

Note: If the transmission of the vehicle location is deactivated, some services are no longer available.

Note: The vehicle location always remains accessible to OnStar in the case of an emergency.

Find the privacy policy in your account.

Software updates

OnStar may remotely carry out software updates without further notice or consent. These updates are to enhance or maintain safety and security or the operation of the vehicle.

These updates may concern privacy issues. Find the privacy policy in your account.

Index

A
Accessories and Modifications 246
Accessory Power193
Acknowledgements
Libcurl and Unzip
Adaptive Cruise Control212
Adaptive Forward
Lighting (AFL)152
Adaptive Forward Lighting
(AFL) Light135
Add-On Electrical Equipment 244
Adjustments
Lumbar, Front Seats58
Thigh Support58
Air Cleaner/Filter, Engine 254
Air Conditioning164, 169
Air Filter, Passenger
Compartment172
Air Vents171
Airbag System
Check85
How Does an Airbag Restrain?79
Passenger Sensing System80
What Makes an Airbag Inflate? 78
What Will You See after an
Airbag Inflates?79
When Should an Airbag
Inflate?

Airbag System (cont'd)
Where Are the Airbags?76
Airbags
Adding Equipment to the
Vehicle85
Passenger Status Indicator 126
Readiness Light 126
Servicing Airbag-Equipped
Vehicles84
System Check74
Alarm
Vehicle Security41
Alert
Lane Change 230
Side Blind Zone (SBZA) 230
All-Season Tyres281
All-Wheel Drive199, 264
Anti-theft
Locking System42
Antilock Brake System (ABS)199
Warning Light
Appearance Care
Exterior
Interior 313
Armrest Storage108
Ashtrays118
Assistance Systems for Driving $\dots 226$

Assistance Systems for Parking	Brakes261	Charging
and Reversing221	Antilock 199	Wireless
Auto Stop Mode134	Assist 201	Charging System Light127
Automatic	Fluid 262	Check
Dimming Mirrors45	Braking175	Engine Light (Malfunction
Door Locks37	Automatic Forward 229	Indicator) 127
Forward Braking 229	Bulb Replacement	Child Restraints
Headlamp System 152	Halogen Bulbs 269	Infants and Young Children88
Transmission	Headlamp Aiming 268	ISOFIX99
Transmission Fluid 254	Headlamps 269	Older Children86
Automatic Transmission	High Intensity Discharge	Securing
Manual Mode 198	(HID) Lighting 269	Systems90
Shift Lock Control Function	License Plate Lamps 270	Cigarette Lighter118
Check 265	Reversing Lamps 269	Circuit Breakers271
В	Buying New Tyres292	Cleaning
=	C	Exterior Care 309
Battery		Interior Care 313
Exterior Lighting Battery	Capacities and Specifications 326 Carbon Monoxide	Climate Control Systems
Saver		Dual Automatic 164
Jump Starting	Boot	Rear169
Load Management	Engine Exhaust	Clock114
Power Protection	Winter Driving 183	Cluster, Instrument119
Blade Replacement, Wiper266	Cargo	Compartments
Bonnet	Tie-Downs	Storage 107
Boost Gauge124	Caution, Danger, and Warning2	Competitive Driving Mode206
Brake	Centre Console Storage 108	Composite Materials
Parking, Electric 200	Chains, Tyre295	Compressor Kit, Tyre Sealant 296
System Warning Light 129		compressor Kit, Tyle Scalant270

Conformity
Declaration of
Control
Traction and Electronic
Stability 202
Control of a Vehicle175
Convenience Net109
Convex Mirrors 44
Coolant
Engine Temperature Gauge 125
Engine Temperature Warning
Light 132
Cooling164, 169
Cooling System255
Courtesy Lamps
Cruise Control
Light 136
Cruise Control, Adaptive212
Cupholders108
D
Danger, Warning, and Caution2
Data Collection
Infotainment System 337
OnStar 337
Data Recorder
Performance
Daytime Running Lamps (DRL)151

Driving (cont'd)
If the Vehicle is Stuck 184
Loss of Control
Off-Road Recovery 176
Track Events and Competitive 177
Vehicle Load Limits
Wet Roads181
Winter 183
Dual Automatic Climate
Control System 164
E
Electric Parking Brake200
Electric Parking Brake Light 130
Electrical Equipment, Add-On 244
Electrical System
Engine Compartment Fuse
Block 272
Fuses and Circuit Breakers 271
Instrument Panel Fuse Block 275
Overload
Rear Compartment Fuse
Block 277
Engine
Engine Air Cleaner/Filter
Air Cleaner/Filter
Air Cleaner/Filter
Air Cleaner/Filter

Engine (cont'd)	Floor Mats316	G
Coolant Temperature Gauge 125	Fluid	Gas Strut(s)26
Coolant Temperature	Automatic Transmission 254	Gauges
Warning Light 132	Brakes 262	Boost 12
Cooling System	Washer 260	Engine Coolant Temperature 12
Drive Belt Routing 329	Fog Lamp Light, Rear135	Fuel 12
Exhaust 195	Fog Lamps	Mileometer
Oil Life System	Rear 153	Rev Counter 12
Oil Pressure Light 134	Forward Automatic Braking 229	Speedometer 12
Overheating	Forward Collision Alert (FCA)	Trip Odometer 12
Power Messages143	System	Warning Lights and
Running While Parked 195	Front Seats	Indicators
Starting 20, 191	Heated and Ventilated62	General Information
Entry Lighting155	Fuel	Service and Maintenance 31
Equipment, Towing242	Additives 235	Towing
Exit Lighting155	Economy Driving26	Vehicle Care 24
Extended Parking194	Filling a Portable Fuel	Glove Box10
Exterior Lamp Controls149	Container 236	н
Exterior Lamps Off Reminder 151	Filling the Tank 235	
Exterior Lighting Battery Saver 156	Gauge	Halogen Bulbs26 Hazard Warning Flashers15
F	Low Fuel Warning Light 134	Head Restraints
• Features	Fuses	Head-up Display13
Memory13	Engine Compartment Fuse	Headlamps
Filter.	Block 272	Adaptive Forward
Engine Air Cleaner	Fuses and Circuit Breakers 271	Lighting (AFL)
Flash-to-Pass	Instrument Panel Fuse Block 275	Aiming
Flat Tyre	Rear Compartment Fuse	Automatic
1140 1 , 10	Block 277	Automatic 13

Headlamps (cont'd)
Bulb Replacement 269
Daytime Running
Lamps (DRL) 151
Flash-to-Pass
High Intensity Discharge
(HID) Lighting 269
Lamps On Reminder
Main-Beam On Light
Main/Dipped Beam Changer 151
Washer 114
Heated
Rear Seats66
Steering Wheel 111
steering wheer
Heated and Ventilated Front
•
Heated and Ventilated Front
Heated and Ventilated Front Seats
Heated and Ventilated Front Seats
Heated and Ventilated Front Seats 62 Heated Mirrors 45 Heating 164, 169
Heated and Ventilated FrontSeats62Heated Mirrors45Heating164, 169High-Speed Operation285
Heated and Ventilated Front Seats

Indicator
Vehicle Ahead 131
Indicator and Lane-Change
Signals153
Infants and Young Children,
Restraints 88
Infotainment157
Infotainment System337
Instrument Cluster119
Instrument Panel
Storage Area107
Interior Rearview Mirrors 46
Introduction2
ISOFIX Child Restraint Systems 99
J
Jump Starting
Jump Starting303
K Keyless Entry
K
K Keyless Entry
K Keyless Entry Remote (RKE) System28
K Keyless Entry Remote (RKE) System
K Keyless Entry Remote (RKE) System
K Keyless Entry Remote (RKE) System
K Keyless Entry Remote (RKE) System

T ((13)
Lamps (cont'd)
Exterior Lamps Off Reminder 15
Exterior Lighting Battery
Saver 156
Malfunction Indicator (Check
Engine) 127
Number Plate 270
On Reminder
Reading 154
Rear Fog 153
Lane Change Alert (LCA) 230
Lane Departure
Warning (LDW)232
Lane Keep Assist (LKA)232
Lane Keep Assist Light13
Lap-Shoulder Belt 69
LED Lighting269
Libcurl and Unzip
Acknowledgements
Light, Auto Stop Mode134
Lighter, Cigarette118
Lighting
Adaptive Forward 152
Entry
Exit
Illumination Control 154
LED
LLD 20.

Lights
Adaptive Forward Lighting
(AFL) Light
Airbag Readiness 126
Antilock Brake System (ABS)
Warning 130
Brake System Warning 129
Charging System 127
Check Engine (Malfunction
Indicator) 127
Cruise Control
Door Ajar 136
Driver Mode Control
Electric Parking Brake 130
Engine Coolant Temperature
Warning 132
Engine Oil Pressure 134
Flash-to-Pass
Fog Lamp, Rear
Lane Keep Assist 131
Low Fuel Warning 134
Main-Beam On 135
Main/Dipped Beam Changer 151
Seat Belt Reminders 125
Security
Service Electric Parking Brake 130
StabiliTrak OFF

Lights (cont'd)
Traction Control System
(TCS)/StabiliTrak
Traction Off 131
Tyre Pressure
Lights, Hazard153
Limited-Slip Differential 209
Locking Systems, Anti-theft 42
Locks
Automatic Door37
Delayed Locking37
Door34
Lockout Protection37
Power Door37
Safety38
Loss of Control176
Low Fuel Warning Light134
Low-Profile Tyres282
Lumbar Adjustment 58
Front Seats58
M
Main-Beam On Light135
Maintenance Schedule
Recommended Fluids and
Lubricants 322

Maintenance Schedule (cont'd)	
Scheduled Maintenance	319
Malfunction Indicator Lamp	. 127
Manual Mode	. 198
Memory Features	13
Memory Seats	60
Messages	
Engine Power	143
Vehicle	142
Vehicle Speed	143
Mileometer	. 123
Trip	123
Mirror	
Rear Camera	46
Mirrors	
Automatic Dimming	45
Automatic Dimming Rear View	46
Convex	44
Heated	45
Power	44
Tilt in Reverse	45
Mirrors, Interior Rearview	46
Mode	203
Driver Control	203
Monitor System, Tyre Pressure	. 285
· · · · · · · · · · · · · · · · · · ·	

348 INDEX

N	
Net, Convenience109	
New Vehicle Running-In188	
0	
Off-Road	
Recovery	
Oil	
Engine 251	
Engine Oil Life System 253	
Pressure Light	
Older Children, Restraints 86	
OnStar 337	
OnStar Overview	
Outlets	
Power 114	
Overheating, Engine259	
P	
Park	
Shifting Into	
Shifting Out of 194	
Parking	
Brake and P (Park)	
Mechanism Check 266	
Extended 194	
Over Things That Burn 194	
Parking Assist221	

Parking or Reversing
Assistance Systems 221
Passenger Airbag Status
Indicator 126
Passenger Compartment Air
Filter 172
Passenger Sensing System 80
Pedestrian Protection System 103
Performance Data
Recorder (PDR)
Personalisation
Vehicle143
Power
Door Locks
Mirrors44
Outlets
Protection, Battery 156
Retained Accessory (RAP) 193
Seat Adjustment55
Windows48
Pregnancy, Using Seat Belts 72
Privacy
Vehicle Data Recording 336

K	
Radio Frequency	
Identification (RFID)33	0
Reading Lamps15	
Rear Camera Mirror 4	6
Rear Climate Control System 16	9
Rear Fog Lamp Light13	5
Rear Fog Lamps15	
Rear Seat Pass-Through Door 6	7
Rear Seats 6	4
Heated6	
Rear View Mirrors	
Automatic Dimming4	6
Rear Vision Camera (RVC)22	1
Rear Window Sunshade 5	
Reclining Seat Backrests 5	9
Recommended Fluids and	
Lubricants32	2
Recreational Vehicle Towing 30	7
Remote Keyless Entry (RKE)	
System 2	8
Remote Vehicle Start 3	3
Replacement Parts	
Airbags8	6
Maintenance 32	3
Replacing Airbag System 8	6
Replacing Seat Belt System	
Parts after a Crash 7	4

Seat Belts (cont'd)
How to Wear Seat Belts
Properly68
Lap-Shoulder Belt69
Reminders 125
Replacing after a Crash74
Use During Pregnancy72
Seats
Head Restraints54
Heated and Ventilated Front62
Heated, Rear66
Lumbar Adjustment, Front58
Memory60
Power Adjustment, Front55
Rear64
Reclining Seat Backrests59
Seats and Restraints
Pedestrian Protection System 103
Securing Child Restraints 99, 10
Security
Light 134
Vehicle41
Vehicle Alarm4
Service
Accessories and
Modifications 246
Doing Your Own Work 247

350 INDEX

Storage Areas
Armrest
Centre Console 108
Convenience Net 109
Glove Box
Instrument Panel 107
Storage Compartments107
Storing the Tyre Sealant and
Compressor Kit 303
Struts
Gas
Stuck Vehicle184
Summer Tyres
Sun Visors 50
Sunroof 51
Sunshade
Rear Window50
Symbols
System
Forward Collision Alert (FCA) 226
Infotainment157, 337
Systems
Driver Assistance 220
т
Theft-Deterrent Systems 43
There becomes by steine

Theft-Deterrent Systems (cont'd)	
Immobiliser4	3
Thigh Support Adjustment 5	
Time11	
Towing	
Driving Characteristics 23	7
Equipment24	
General Information	
Recreational Vehicle 30	7
Trailer240, 24	2
Vehicle30	6
Track Events and Competitive	
Driving17	7
Traction	
Control System (TCS)/	
StabiliTrak Light13	2
Limited-Slip Differential 20	
Off Light	1
Traction Control/Electronic	
Stability Control	2
Trailer	
Towing240, 24	2
Transmission	
Automatic 19	6
Fluid, Automatic 25	
Triangle, Warning10	
Trip Odometer	
Trunk 3	

Tyres	280
All-Season	281
Buying New Tyres	292
Chains	295
Different Size	293
If a Tyre Goes Flat	295
Inspection	
Low Profile	
Pressure283,	
Pressure Light	
Pressure Monitor Operation	286
Pressure Monitor System	285
Rotation	
Run-Flat	282
Sealant and Compressor Kit	296
Sealant and Compressor Kit,	
Storing	303
Wheel Alignment and Tyre	
Balance	294
Wheel Replacement	294
When It Is Time for New	
Tyres	291
Winter	281
П	
Using This Manual	า
USING THIS MAINTAL	<i>1</i> .

V
Vehicle
Alarm System41
Control 175
Identification Number (VIN) 325
Load Limits
Messages 142
Personalisation
Remote Start33
Security
Speed Messages 143
Towing 306
Vehicle Ahead Indicator
Vehicle Care
Storing the Tyre Sealant and
Compressor Kit 303
Tyre Pressure 283
Vehicle Data Recording and
Privacy
Ventilation, Air171
Visors 50
W
Warning
Brake System Light 129
Caution and Danger
0

١	Warning (cont'd)
	Lane Departure (LDW) 232
1	Warning Lights, Gauges, and
	Indicators 118
1	Warning Triangle109
1	Warnings
	Hazard Lights 153
1	Washer Fluid260
1	Washer, Headlamps114
١	Wheels
	Alignment and Tyre Balance 294
	Different Size
	Replacement 294
١	When It Is Time for New Tyres 291
1	Where to Put the Restraint 92
1	Windows 48
	Power48
1	Windshield
	Replacement 267
	Wiper/Washer
1	Winter
	Driving 183
١	Winter Tyres281
١	Wiper Blade Replacement 266
١	Wireless Charging116



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