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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, GMC, the GMC Truck Emblem, YUKON, and DENALI are trademarks and/or service marks of General Motors LLC, its subsidiaries, affiliates, or licensors.

For vehicles first sold in Canada, substitute the name “General Motors of Canada Limited” for GMC wherever it appears in this manual.

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

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

Keep this manual in the vehicle for quick reference.

Canadian Vehicle Owners

Propriétaires Canadiens

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

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

Using this Manual

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

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

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

Vehicle Symbol Chart

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

🔧 : Adjustable Pedals

💰 : Airbag Readiness Light

🔧 : Antilock Brake System (ABS)

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

💡 : Brake System Warning Light

🔋 : Charging System

🔧 : Cruise Control

🔧 : Do Not Puncture

🔧 : Do Not Service

🌡 : Engine Coolant Temperature

💡 : Exterior Lamps

🔥 : Flame/Fire Prohibited

💡 : Fog Lamps

⛽ : Fuel Gauge

איור : Fuses
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繁: Headlamp High/Low-Beam Changer
繁: Heated Steering Wheel
繁: LATCH System Child Restraints
繁: Malfunction Indicator Lamp
繁: Oil Pressure
繁: Outside Power Foldaway Mirrors
繁: Power
繁: Remote Vehicle Start
繁: Safety Belt Reminders
繁: Tire Pressure Monitor
繁: Tow/Haul Mode
繁: Traction Control/StabiliTrak®
繁: Under Pressure
繁: Windshield Washer Fluid
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Instrument Panel
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1. Air Vents ⊳ 179.
2. Head-Up Display (HUD) ⊳ 140.
3. Traction Control/Electronic Stability Control ⊳ 218.
   • Power Assist Steps ⊳ 40 (If Equipped).
   • Parking Assist Button (If Equipped). See Assistance Systems for Parking or Backing ⊳ 231.
   • Lane Departure Warning (LDW) ⊳ 240 (If Equipped).
   • Pedal Adjust Switch (If Equipped). See Adjustable Throttle and Brake Pedal ⊳ 198.
4. Turn Signal Lever. See Turn and Lane-Change Signals ⊳ 168.
   • Windshield Wiper/Washer ⊳ 112.
7. Instrument Cluster ⊳ 120.
   • Tow/Haul Selector Button. See Tow/Haul Mode ⊳ 212.
   • Range Selection Mode (If Equipped). See Manual Mode ⊳ 209.
10. Infotainment ⊳ 173.
11. Dual Automatic Climate Control System ⊳ 174
13. Rear Climate Control Buttons. See Rear Climate Control System ⊳ 178.
15. Steering Wheel Controls. See the infotainment manual.
16. Horn ⊳ 112.
17. Steering Wheel Adjustment ⊳ 111.
19. Cruise Control ⊳ 221.
   • Adaptive Cruise Control ⊳ 224 (If Equipped).
   • Forward Collision Alert (FCA) System ⊳ 234 (If Equipped).
21. Data Link Connector (DLC) (Out of View). See Malfunction Indicator Lamp (Check Engine Light) ⊳ 129.
22. Automatic Transfer Case Knob (If Equipped). See Four-Wheel Drive ⊳ 213.
8 In Brief

Fog Lamps ▷ 169 (If Equipped).


Initial Drive Information

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

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

Remote Keyless Entry (RKE) System

The RKE transmitter is used to remotely lock and unlock the doors and it may work up to 60 m (197 ft) away from the vehicle.

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

_press_ : Press to lock all doors.

Lock and unlock feedback can be personalized. See Vehicle Personalization ▷ 155.

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

_press_ : Press twice to open the liftglass.
Press and release to initiate vehicle locate. The turn signal lamps flash and the horn sounds three times.

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

Press again to cancel the panic alarm.

See Keys \(\text{\#} \ 25\) and Remote Keyless Entry (RKE) System \(\text{\#} \ 26\).

**Remote Vehicle Start**

If equipped, the engine can be started from outside of the vehicle.

**Starting the Vehicle**

1. Press and release \(\text{\#} \) on the RKE transmitter.
2. Immediately, press and hold \(\text{\#} \) for at least four seconds or until the turn signal lamps flash.
3. Start the vehicle normally after entering.

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

Remote start can be extended.

**Canceling a Remote Start**

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

- Press and hold \(\text{\#} \) until the parking lamps turn off.
- Turn on the hazard warning flashers.
- Turn the vehicle on and then off.

See Remote Vehicle Start \(\text{\#} \ 33\).

**Door Locks**

To lock or unlock the doors from inside the vehicle:

- Press \(\text{\#} \) or \(\text{\#} \) on a power door lock switch.
- Pushing down the manual lock knob on the driver door will lock all doors. Pushing down the lock knob on a passenger door will lock that door only.
- Pulling the door handle once will unlock that door. Pulling the handle again will unlatch it.

To lock or unlock the doors from outside the vehicle press \(\text{\#} \) or \(\text{\#} \) on the RKE transmitter. See Remote Keyless Entry (RKE) System Operation \(\text{\#} \ 27\).

**Power Door Locks**

\(\text{\#} \): Press to lock the doors.

\(\text{\#} \): Press to unlock the doors.

See Door Locks \(\text{\#} \ 34\).

**Keyless Access**

If equipped with Keyless Access, the RKE transmitter must be within 1 m (3 ft) of the driver door.
10 In Brief

Pressing the button on the driver door handle will unlock the driver door. If the handle button is pressed again within five seconds, the passenger doors and liftgate will unlock. See Remote Keyless Entry (RKE) System Operation 27.

Liftgate

To open the liftgate, press on the power door lock switch or press on the Remote Keyless Entry (RKE) transmitter twice to unlock all doors. Press the touch pad on the underside of the liftgate handle and lift up. See Remote Keyless Entry (RKE) System Operation 27.

Power Liftgate Operation

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

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

Pressing and releasing while the liftgate is moving stops the liftgate. Pressing again reverses the direction.

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

To disable the power liftgate function, select OFF on the liftgate switch. See Liftgate 36.

Windows

The power windows work when the ignition is in ON/RUN or ACC/ACCESSORY, or in Retained Accessory Power (RAP). See Retained Accessory Power (RAP) 203.

If equipped, the front and rear windows have an express-down feature. The front windows have an express-up feature. See Windows 47 and Power Windows 47.
Seat Adjustment

Power Seats

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

See Power Seat Adjustment \(\Rightarrow\) 53.

Lumbar Adjustment

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

See Lumbar Adjustment \(\Rightarrow\) 54.

Memory Features

The SET, 1, 2, and \(\Rightarrow\) (Exit) buttons on the driver door are used to manually store and recall memory settings for the driver seat, outside mirrors, power tilt and telescoping steering column, and adjustable pedals.

Automatic Memory Recall and/or Easy Exit Recall features may be enabled in the vehicle personalization menus to automatically recall positions stored to the 1, 2, and \(\Rightarrow\) buttons.
In Brief

See Memory Seats 55 and Vehicle Personalization 155.

Second Row Seats
The second row seatbacks can be folded for additional cargo space, or the seats can be folded and tumbled for easy entry/exit to the third row seats. The seatbacks also recline.
See Second Row Seats 59.

Third Row Seats
Third row seatbacks can be folded.
See Third Row Seats 63.

Heated and Cooled Front Seats

The buttons are on the center stack below the climate control system. To operate, the engine must be running.

Press to heat the driver or passenger seatback only.

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

Press to cool the driver or passenger seat.

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

To achieve a comfortable seating position, change the seatback recline angle as little as necessary while keeping the seat and the head restraint height in the proper position.
See Head Restraints 52 and Power Seat Adjustment 53.
Safety Belts

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

- Safety Belts 65.
- How to Wear Safety Belts Properly 66.
- Lap-Shoulder Belt 67.
- Lower Anchors and Tethers for Children (LATCH System) 92.

Passenger Sensing System

The passenger airbag status indicator will light on the overhead console when the vehicle is started. See Passenger Airbag Status Indicator 127.

Mirror Adjustment

Exterior Mirrors

To adjust the mirrors:

1. Press (1) or (2) to select the driver or passenger side mirror.
2. Press the arrows on the control pad to move each mirror in the desired direction.
14  In Brief

3. Press either (1) or (2) again to deselect the mirror.

Power Folding Mirrors
To power fold the mirrors:
1. Press \( \text{I} \) to fold the mirrors inward.
2. Press \( \text{I} \) again to return the mirrors to the driving position.

See Power Mirrors \( \rightarrow \) 44.

Heated Mirrors
Press \( \text{II} \) to heat the mirrors.

See “Rear Window Defogger” under Dual Automatic Climate Control System \( \rightarrow \) 174.

Interior Mirror
Adjustment
Adjust the mirror to view the area behind the vehicle.

Automatic Dimming Rearview Mirror
The mirror automatically reduces the glare of headlamps from behind. The dimming feature comes on when the vehicle is started. See Automatic Dimming Rearview Mirror \( \rightarrow \) 46.

Steering Wheel Adjustment
Power Tilt and Telescoping Steering Wheel
To adjust the power tilt and telescoping steering wheel, if equipped:
Press the control to move the steering wheel up and down or forward and rearward.

The switch used to adjust the pedals is to the left of the steering wheel.
Press the switch to the left to move the pedals closer to your body. Press the switch to the right to move the pedals away.

Do not adjust the steering wheel while driving.

Throttle and Brake Pedal Adjustment
If equipped, the position of the throttle and brake pedals can be changed.
See *Adjustable Throttle and Brake Pedal* 198.

The vehicle may have a memory function, which lets pedal settings be saved and recalled. See *Memory Seats* 55.

**Interior Lighting**

**Dome Lamps**

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

To change the dome lamp settings, press the following:

- **OFF**: Turns the lamps off, even when a door is open.
- **DOOR**: The lamps come on automatically when a door is opened.
- **ON**: Turns all dome lamps on.

**Reading Lamps**

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

**Exterior Lighting**

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

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

There are four positions.

Œ : Turns off the automatic headlamps and Daytime Running Lamps (DRL). Turn the headlamp control to the off position again to turn the automatic headlamps or DRL back on.

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

AUTO : Automatically turns on the headlamps, parking lamps, taillamps, instrument panel lights, roof marker lamps (if equipped), and license plate lamps.

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

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

See:
• Exterior Lamp Controls  165
• Fog Lamps  169

Windshield Wiper/Washer

The windshield wiper control is on the turn signal lever.

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

Œ : Fast wipes.

Œ : Slow wipes.

INT : Use this setting for intermittent wipes or Rainsense™. For intermittent wipes, turn the Œ

FRONT band up for more frequent wipes or down for less frequent wipes.

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

• Turn the band up to a higher INT setting for more sensitivity to moisture.

• Turn the band down to the lower INT setting for less sensitivity to moisture.

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

OFF : Turns the windshield wipers off.

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

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

See Windshield Wiper/Washer  112.
Climate Controls
This system controls the heating, cooling, and ventilation.

1. Driver Temperature Control
2. A/C (Air Conditioning)
3. Air Delivery Mode Controls
4. Fan Control
5. Defrost
6. Passenger Temperature Control
7. SYNC (Synchronized Temperature)
8. Rear Window Defogger
9. RCTRL (Rear Climate Control Lockout)
10. Rear Temperature Control
11. Rear Air Delivery Mode Control
12. Rear Fan Control
13. Front Climate Control Power Button
14. Rear AUTO (Automatic Operation)
15. Rear Climate Control Power Button
16. Air Recirculation
17. AUTO (Automatic Operation)

Transmission
Range Selection Mode

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

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

2. Tap the plus/minus buttons on the shift lever to select the desired range of gears for current driving conditions. See Manual Mode 209.
18 In Brief

While using Range Selection Mode, cruise control and the Tow/Haul Mode can be used. Grade Braking is not available when Range Selection Mode is active. See Tow/Haul Mode 212.

Four-Wheel Drive

If equipped, four-wheel drive engages the front axle for extra traction.

Automatic Transfer Case

Two Speed Automatic Transfer Case

The transfer case knob is to the left of the steering wheel. Use this knob to shift into and out of the different four-wheel drive modes.

2 ↑: This setting is used for driving in most street and highway situations.

AUTO: This setting is ideal for use when road surface traction conditions are variable.

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

4 ↓: This setting engages the front axle and delivers extra torque. Choose 4 ↓ if you are driving off-road in deep sand, mud, or snow, and while climbing or descending steep hills.

N (Neutral): Shift the transfer case to N (Neutral) only when towing the vehicle. See Recreational Vehicle Towing 330 or Towing the Vehicle 330.

See Four-Wheel Drive 213.
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

CTRL: Press to turn the system on or off. The indicator light is white when cruise control is on and turns off when cruise control is off.

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

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

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

See Cruise Control 221 or Adaptive Cruise Control 224 (If Equipped).

Driver Information Center (DIC)
The DIC display is in the instrument cluster. It shows the status of many vehicle systems.

△ or ▼: Press to move up or down in a list.
20  In Brief

벽 or 털: Press to move between the interactive display zones in the cluster.

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

See Driver Information Center (DIC) ➜ 137.

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, consin, when a vehicle is detected ahead. This indicator displays amber if you follow a vehicle much too closely. When approaching a vehicle ahead too quickly, FCA provides a flashing red alert on the windshield and rapidly beeps or pulses the driver seat.

See Forward Collision Alert (FCA) System ➜ 234.

Front Automatic Braking (FAB) System

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 traveling in the same direction that you may be about to crash into, it can provide a boost to braking or automatically brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear.

See Front Automatic Braking (FAB) System ➜ 236.

Lane Keep Assist (LKA)

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

See Lane Departure Warning (LDW) ➜ 240 and Lane Keep Assist (LKA) ➜ 240.

Lane Change Alert (LCA)

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

See Side Blind Zone Alert (SBZA) ➜ 238 and Lane Change Alert (LCA) ➜ 238.
Rear Vision Camera (RVC)

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

See Assistance Systems for Parking or Backing  231.

Rear Cross Traffic Alert (RCTA) System

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

See Assistance Systems for Parking or Backing  231.

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 display a warning triangle on the Rear Vision Camera screen and a graphic on the instrument cluster to provide the object distance. In addition, multiple beeps or seat pulses may occur if very close to an object.

The vehicle may also have the Front Parking Assist system.

See Assistance Systems for Parking or Backing  231.

Power Outlets

Power Outlets 12 Volt Direct Current

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

The vehicle may have up to five accessory power outlets:

Vehicles with a Center Console

- One in front of the cupholders on the center console.

Vehicles with Bench Seats

- One on the center stack below the climate control system.
- One in the storage area on the bench seat.
- One on the rear of the center armrest storage.
- One in the third row seat area on the driver side.
- One in the rear cargo area on the passenger side.

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

See Power Outlets  116.
22 In Brief

Universal Remote System

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

This system provides a way to replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home automation devices.

See Universal Remote System \(\rightarrow 162\).

Sunroof

On vehicles with a sunroof, the sunroof only operates when the ignition is in ACC/ACCESSORY or ON/RUN, or when Retained Accessory Power (RAP) is active. See Retained Accessory Power (RAP) \(\rightarrow 203\).

Vent: From the closed position, press the rear of switch (2) to vent the sunroof.

Open/Close: To open the sunroof, press and hold switch (1) until the sunroof reaches the desired position. Press and hold the front of switch (1) to close it.

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

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

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

If an object is in the path of the sunroof while it is closing, the anti-pinch feature will detect the object and stop the sunroof.

See Sunroof \(\rightarrow 50\).
Performance and Maintenance

Traction Control/ Electronic Stability Control

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

- To turn off traction control, press and release \( \text{on the instrument panel to the left of the steering wheel. The traction off light ( } \) displays in the instrument cluster. The appropriate DIC message displays. See Ride Control System Messages \( \Rightarrow 150. \)

- Press and release \( \) again to turn on both systems.

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

See Traction Control/Electronic Stability Control \( \Rightarrow 218. \)

Tire Pressure Monitor

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

- To turn off both traction control and StabiliTrak, press and hold \( \) until \( \) and \( \) illuminate in the instrument cluster and the appropriate DIC message displays. See Ride Control System Messages \( \Rightarrow 150. \)

The low tire pressure warning light alerts to a significant loss in pressure of one of the vehicle’s tires. If the warning light comes on, stop as soon as possible and inflate the tires to the recommended pressure shown on the Tire and Loading Information label. See Vehicle Load Limits \( \Rightarrow 194. \) The warning light will remain on until the tire pressure is corrected.

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

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

See Tire Pressure Monitor System \( \Rightarrow 305. \)

Engine Oil Life System

The engine oil life system calculates engine oil life based on vehicle use and displays a DIC message when it is necessary to change the engine oil and filter. The oil life system should be reset to 100% only following an oil change.
24 In Brief

**Resetting the Oil Life System**

To reset the engine oil life system:

1. Display REMAINING OIL LIFE on the DIC. See *Driver Information Center (DIC)* \(\rightarrow\) 137.

2. Press and hold the `button on the DIC. The oil life will change to 100%.

The oil life system can also be reset as follows:

1. Turn the ignition to ON/RUN with the engine off.
2. Fully press the accelerator pedal slowly three times within five seconds.
3. Display REMAINING OIL LIFE on the DIC. If the display shows 100%, the system is reset.

See *Engine Oil Life System* \(\rightarrow\) 267.

**Driving for Better Fuel Economy**

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

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

- Follow recommended scheduled maintenance.

**Roadside Assistance Program**

U.S.: 1-888-881-3302
TTY Users (U.S. Only): 1-888-889-2438
Canada: 1-800-268-6800

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

See *Roadside Assistance Program* \(\rightarrow\) 364.
Keys, Doors, and Windows

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Keys and Locks

Warning
Leaving children in a vehicle with an ignition key or Remote Keyless Entry (RKE) transmitter is dangerous and children or others could be seriously injured or killed. They could operate the power window or other controls or make the vehicle move. The windows will function with the key in the ignition or 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 the ignition key or an RKE transmitter.
26  Keys, Doors, and Windows

There is a key in the transmitter. This key is used for the driver door and glove box.

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

The key has a bar-coded key tag that the dealer or qualified locksmith can use to make new keys. Store this information in a safe place, not in the vehicle.

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

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

With an active OnStar subscription, an OnStar Advisor may remotely unlock the vehicle. See OnStar Overview 374.

Remote Keyless Entry (RKE) System


If there is a decrease in the RKE operating range:

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

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

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

Other conditions can affect the performance of the transmitter. See Remote Keyless Entry (RKE) System 26.

With Remote Start (without Remote Start Similar)

Q : If equipped, press and release Q, then immediately press and hold Q until the turn signal flash or for at least four seconds. The engine may be started from outside the vehicle using the RKE transmitter. See Remote Vehicle Start 33.

K : Press to lock all doors.

If enabled through the Driver Information Center (DIC), the turn signal lamps flash once to indicate locking has occurred. If enabled through the DIC, the horn chirps when Q is pressed again within three seconds. See Vehicle Personalization 155.

If the driver door is open when Q is pressed all doors will lock and then the driver door will immediately unlock, if enabled in Vehicle Personalization. See Vehicle Personalization 155.

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

Pressing Q arms the alarm system. See Vehicle Alarm System 41.

If equipped with auto mirror folding, pressing and holding Q for one second will fold the mirrors. The auto mirror folding feature will not operate unless it is enabled. See Vehicle Personalization 155.

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

If enabled through the DIC, the turn signal lamps flash twice to indicate unlocking has occurred. If enabled through the DIC, the exterior lamps may turn on. See Vehicle Personalization ∆ 155.

Pressing 1 on the RKE transmitter disarms the alarm system. See Vehicle Alarm System ∆ 41.

If equipped with auto mirror folding, pressing and holding 2 for one second will unfold the mirrors. The auto mirror folding feature will not operate unless it is enabled. See Vehicle Personalization ∆ 155.

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

c: Press twice to open the liftgate.

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

Press and hold 7 for more than three seconds to activate the panic alarm. The turn signal lamps flash and the horn sounds repeatedly for 30 seconds. The alarm turns off when the ignition is moved to ON/RUN or 2 is pressed again. The ignition must be in LOCK/OFF for the panic alarm to work.

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

Keyless Access can be programmed to unlock all doors on the first lock/unlock press from the driver door. See Vehicle Personalization ∆ 155.

Keyless Unlocking/Locking from the Driver Door
When the doors are locked and the RKE transmitter is within 1 m (3 ft) of the door handle, pressing the lock/unlock button on the driver door handle will unlock the driver door.

If the lock/unlock button is pressed again within five seconds, all passenger doors and the liftgate will unlock.

Driver Side Shown, Passenger Side Similar

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

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

**Keyless Unlocking/Locking from the Passenger Doors**

When the doors are locked and the RKE transmitter is within 1 m (3 ft) of the door handle, pressing the lock/unlock button on a passenger door handle will unlock all doors. Pressing the lock/unlock button will cause all doors to lock if any of the following occur:

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

**Passive Locking**

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

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

To customize the doors to automatically lock when exiting the vehicle, see “Remote Lock, Unlock, Start” under Vehicle Personalization  \(\Rightarrow\) 155.

**Temporary Disable of Passive Locking Feature**

Temporarily disable passive locking by pressing and holding \(\bigcirc\) 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 \(\bigcirc\) on the interior door is pressed, or until the vehicle is turned on.

**Keyless Liftgate Opening**

Press the touch pad on the underside of the liftgate handle to open the liftgate when all doors are unlocked, or when the transmitter is within 1 m (3 ft).

**Keyless Liftglass Opening**

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

See Liftgate  \(\Rightarrow\) 36.

**Keyed Access**

To access a vehicle with a dead 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. The vehicle can be reprogrammed so that lost or stolen transmitters no
30  Keys, Doors, and Windows

longer work. Each vehicle can have up to eight transmitters matched to it.

Programming with a Recognized Transmitter (Keyless Access Vehicles Only)

A new transmitter can be programmed to the vehicle when there is one recognized transmitter.

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

1. Remove the key from the recognized transmitter.

2. Place the recognized transmitter(s) in the cupholder or on the passenger seat.

3. Insert the vehicle key into the key lock cylinder on the driver door handle. Then turn the key counterclockwise, to the unlock position, five times within 10 seconds.

   The Driver Information Center (DIC) displays READY FOR REMOTE#2, 3, 4, ETC.

4. Place the new transmitter in the transmitter pocket/insert.

   Open the center console storage area and the storage tray. The transmitter pocket/insert is in front of the storage area next to the center console storage area between the driver and front passenger seats.

5. Press the ENGINE START/STOP button. When the transmitter is learned, the DIC display will show that it is ready to program the next transmitter.

6. Remove the transmitter from the transmitter pocket and press or on the transmitter.

   To program additional transmitters, repeat Steps 4–6.

   When all additional transmitters are programmed, press and hold the ENGINE START/STOP button for approximately 12 seconds to exit programming mode.

7. Return the key back into the transmitter.

Programming without a Recognized Transmitter (Keyless Access Vehicles Only)

If there are no currently recognized transmitters available, follow this procedure to program up to eight transmitters. This feature is not available in Canada. This procedure will take approximately 30 minutes to complete. The vehicle must be off and all transmitters to be programmed must be with you.

1. Remove the vehicle key from the transmitter.
2. Insert the vehicle key into the key lock cylinder on the driver door handle; then turn the key counterclockwise, to the unlock position, five times within 10 seconds.

The Driver Information Center (DIC) displays REMOTE LEARN PENDING, PLEASE WAIT.

3. Wait for 10 minutes until the DIC displays PRESS ENGINE START BUTTON TO LEARN, then press the ENGINE START/STOP button.

The DIC display will again show REMOTE LEARN PENDING, PLEASE WAIT.

4. Repeat Step 3 two additional times. After the third time all previously known transmitters will no longer work with the vehicle. Remaining transmitters can be relearned during the next steps.

The DIC display should now show READY FOR REMOTE # 1.

5. Place the new transmitter in the transmitter pocket/insert. Open the center console storage area and the storage tray. The transmitter pocket/insert is in front of the storage area next to the center console storage area between the driver and front passenger seats.

6. Press the ENGINE START/STOP button. When the transmitter is learned, the DIC display will show that it is ready to program the next transmitter.

7. Remove the transmitter from the transmitter pocket/insert and press or on the transmitter.

To program additional transmitters, repeat Steps 5–7. When all additional transmitters are programmed, press and hold the ENGINE START/STOP button for approximately 12 seconds to exit programming mode.

8. Return the key back into the transmitter.

Starting the Vehicle with a Low Transmitter Battery

If the transmitter battery is weak or if there is interference with the signal, the DIC may display NO REMOTE DETECTED or NO REMOTE KEY WAS DETECTED PLACE KEY IN TRANSMITTER POCKET THEN START YOUR VEHICLE when starting the vehicle. See Key and Lock Messages 147.
32 Keys, Doors, and Windows

To start the vehicle:

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

2. Place the transmitter in the transmitter pocket/insert.

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

Replace the transmitter battery as soon as possible.

Battery Replacement

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

Caution

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

To replace the battery:

1. With the key removed, insert a flat, thin object in the center of the transmitter to separate and remove the back cover.

2. Lift the battery with a flat object.

3. Remove the battery.

4. Insert the new battery, positive side toward the back cover. Replace with a CR2032 or equivalent battery.

5. Push together the transmitter.
Remote Vehicle Start
If equipped with the remote start feature, the climate control system will come on when the vehicle is started remotely depending on the outside temperature.

The rear defog and heated and cooled seats, if equipped, may also come on. See Heated and Cooled Front Seats ➔ 57 and Vehicle Personalization ➔ 155.

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

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

The vehicle cannot be remote started if:
• The transmitter is in the vehicle.
• The hood is not closed.
• There is an emission control system malfunction and the malfunction indicator lamp is on.

The engine will turn off during a remote vehicle start if:
• The coolant temperature gets too high.
• The oil pressure gets low.

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

Other conditions can affect the performance of the transmitter. See Remote Keyless Entry (RKE) System ➔ 26 or Vehicle Personalization ➔ 155.

Starting the Engine Using Remote Start
1. Press and release 🛠.
2. Immediately press and hold 🛠 until the turn signal lamps flash or for at least four seconds.

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

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

Place the ignition in ON/RUN/START to operate the vehicle.

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

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

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

Canceling a Remote Start
To cancel a remote start, do one of the following:
• Press and hold 🛠 until the parking lamps turn off.
34 Keys, Doors, and Windows

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

Door Locks

⚠️ Warning

Unlocked doors can be dangerous.

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

(Continued)

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
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<tbody>
<tr>
<td>- Young children who get into unlocked vehicles may be unable to get out. A child can be overcome by extreme heat and can suffer permanent injuries or even death from heat stroke. Always lock the vehicle whenever leaving it.</td>
</tr>
<tr>
<td>- 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.</td>
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</table>

To lock or unlock the doors from outside the vehicle:

- Press 🛖 or 🛗 on the Remote Keyless Entry (RKE) transmitter.  
- Use the key in the driver door.

To lock or unlock the doors from inside the vehicle:

- Press 🛖 or 🛗 on the power door lock switch.

- Pushing down the manual lock knob on the driver door will lock all doors. Pushing down the manual lock knob on a passenger door will lock only that door.

- Pulling an interior door handle will unlock the door. Pulling the door handle again unlatches it.

Keyless Access

If equipped, the RKE transmitter must be within 1 m (3 ft) of the door being opened. Press the button on the door handle to open. See “Keyless Access Operation” in Remote Keyless Entry (RKE) System Operation 27.

Power Door Locks

Press 🛖 or 🛗 on the Remote Keyless Entry (RKE) transmitter. See Remote Keyless Entry (RKE) System Operation 27.
 Keys, Doors, and Windows

(Q) (Lock) : Press to lock the doors.
(K) (Unlock) : Press to unlock the doors.

**Delayed Locking**
When locking the doors with the power lock switch and a door or the liftgate is open, the doors will lock five seconds after the last door is closed. You will hear three chimes to signal that the delayed locking feature is in use.
Pressing the power lock switch twice will override the delayed locking feature and immediately lock all the doors.

This feature will not operate if the key is in the ignition.
This feature can be programmed using the Driver Information Center (DIC). See “Delayed Door Lock” under Vehicle Personalization 155.

**Automatic Door Locks**
The vehicle may have an automatic lock/unlock feature. This feature can be programmed using the Driver Information Center (DIC). See Vehicle Personalization 155.

**Lockout Protection**
If the vehicle is in ACC/ACCESSORY or ON/RUN 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 Q on the power door lock switch.

**Unlocked Door Anti-Lockout**
If Unlocked Door Anti-Lockout is turned on and the vehicle is off, the driver door is open, and locking is requested, all the doors will lock and only the driver door will unlock. The Unlocked Door Anti-Lockout feature can be turned on or off using the vehicle personalization menus. See Vehicle Personalization 155.

**Safety Locks**
The rear door safety locks prevent passengers from opening the rear doors from inside the vehicle.
36 Keys, Doors, and Windows

Doors

Press " to activate the safety locks on the rear doors. The indicator light comes on when activated.

Press " again to deactivate the safety locks.

Liftgate

Warning

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

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

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

Warning (Continued)

and set the fan speed to the highest setting. See “Climate Control Systems” in the Index.

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

See Engine Exhaust 206.

Caution

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

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

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

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

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

If equipped with Keyless Access, the RKE transmitter must be within 1 m (3 ft) of the liftgate to automatically unlock it. See Remote Keyless Entry (RKE) System Operation \( \Phi \) 27.

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

Power Liftgate Operation

\[ \textbf{Warning} \]

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

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

The modes are:

- \( \textbullet \) MAX: Opens to maximum height.
38 Keys, Doors, and Windows

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

- **OFF:** Opens manually only. To open or close the liftgate, select MAX or 3/4 mode and then:
  - Press twice quickly on the RKE transmitter until the liftgate moves.
  - Press on the overhead console. The driver door must be unlocked.
  - Press on the outside liftgate handle after unlocking all doors. If equipped with Keyless Access, a locked vehicle can be opened if the RKE transmitter is within 1 m (3 ft) of the touch pad.
  - Press on the bottom edge of the liftgate next to the latch to close.

Press any liftgate button, the touch pad, or on the RKE transmitter while the liftgate is moving to stop it. Pressing again restarts the operation in the reverse direction. The touch pad on the liftgate handle cannot be used to close the liftgate.

- Do not manually force the liftgate to open or close during a power cycle.
- The power liftgate may be temporarily disabled in extremely low temperatures, or after repeated power cycling over a short period of time. If this occurs, the liftgate can still be operated manually. Select OFF on the liftgate switch.
- If the vehicle is shifted out of P (Park) while the power function is in progress, the liftgate will continue to completion. If the vehicle is accelerated before the liftgate has completed moving, the liftgate may stop or reverse direction. Make sure the liftgate is closed and latched before driving.
  - If the power liftgate support strut has lost pressure, the turn signals will flash and a chime will sound while the liftgate automatically closes. See your dealer for service before using the power liftgate.

### Obstacle Detection Features

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

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

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

Setting the 3/4 Mode
To change the position the liftgate stops at when opening:

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

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

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

Caution
Do not use too much force when closing the liftgate to avoid damage.

Hands-Free Operation
If equipped with Hands-Free Vehicle Access, the liftgate may be operated with a kicking motion under the rear bumper.

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

The hands-free feature will not work while the liftgate is moving. To stop the liftgate while in motion use one of the liftgate switches.
40  Keys, Doors, and Windows

**Caution**

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

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

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

**Power Assist Steps**

![Power Assist Steps Diagram]

If equipped, the power assist steps will deploy when the door is opened and automatically retract three seconds after the door is closed. The power assist steps will retract immediately if the vehicle starts moving.

Length of Kick Zone

To operate, kick your foot straight up in one swift motion under the center of the rear bumper, then pull it back.
Vehicle Security
This vehicle has theft-deterrent features; however, they do not make the vehicle impossible to steal.

Vehicle Alarm System
The indicator light, on the instrument panel near the windshield, indicates the status of the system.
Off: Alarm system is disarmed.
On Solid: Vehicle is secured during the delay to arm the system.
Fast Flash: Vehicle is unsecured. A door, liftgate, or the hood is open.
Slow Flash: Alarm system is armed.

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

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

If the driver door is opened without first unlocking with the RKE transmitter, the horn will chirp and the lights will flash to indicate pre-alarm. If the vehicle is not started, or the door is not unlocked...
42 Keys, Doors, and Windows

by pressing $ on the RKE transmitter during the 10-second pre-alarm, the alarm will be activated.

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

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

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

To avoid setting off the alarm by accident:
- Lock the vehicle after all occupants have exited.

- Always unlock a door with the RKE transmitter, or use the Keyless Access system.

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

How to Detect a Tamper Condition
If $ is pressed on the RKE transmitter and the horn chirps three times, an alarm occurred previously while the alarm system was armed.

If the alarm has been activated, a message will appear on the DIC. See Security Messages ♦ 151.

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

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

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

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

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

- Make sure all doors and windows are completely closed.
- Secure any loose items such as a sunshades.
- Make sure there are no obstructions blocking the sensors in the front overhead console.
- Close DVD screens before leaving the vehicle.
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 off, press \( \) in the front overhead console to turn off the feature.

The indicator light will come on momentarily, indicating that these sensors have been disabled until the next time the alarm system is armed.

Immobilizer

See Radio Frequency Statement \( \) 370.

Immobilizer Operation

This vehicle has a passive theft-deterrent system.

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

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

The immobilization system is disarmed when the ignition button is pressed in and a valid transmitter is found in the vehicle.

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

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

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

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

If the RKE transmitter appears to be undamaged, try another transmitter or place the transmitter in the transmitter pocket/insert next to the center console storage area between the driver and front passenger seats. See “Starting the Vehicle with a Low Transmitter” under Remote Keyless Entry (RKE) System Operation \( \) 27.

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

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

### Exterior Mirrors

#### Convex Mirrors

**Warning**

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

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

### Power Mirrors

To adjust the mirrors:

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

#### Power Folding Mirrors

To power fold the mirrors:

1. Press ☐ to fold the mirrors inward.
2. Press \( \mathbb{K} \) again to return the mirrors to the driving position.

**Turn Signal Indicator**

The vehicle may also have a turn signal indicator on the mirror. An arrow on the mirror flashes in the direction of the turn or lane change.

**Heated Mirrors**

The heated outside rearview mirrors turn on when the rear window defogger is on.

\( \mathbb{K} \) (Rear Window Defogger):
Press to heat the mirror.

See “Rear Window Defogger” under Dual Automatic Climate Control System \( \diamond 174 \).

**Automatic Dimming Mirror**

The driver outside mirror automatically adjusts for the glare of headlamps from behind.

**Blind Spot Mirrors**

If equipped, there is a small convex mirror built into the upper and outer corner of the driver outside rearview mirror. It can show objects that may be in the vehicle's blind zone.
46 Keys, Doors, and Windows

1. When the approaching vehicle is a long distance away, the image in the main mirror is small and near the inboard edge of the mirror.

2. As the vehicle gets closer, the image in the main mirror gets larger and moves outboard.

3. As the vehicle enters the blind zone, the image transitions from the main mirror to the blind spot mirror.

4. When the vehicle is in the blind zone, the image only appears in the blind spot mirror.

Using the Outside Mirror with the Blind Spot Mirror

1. Set the main mirror so that the side of the vehicle can just be seen and the blind spot mirror has an unobstructed view.

2. When checking for traffic or before changing a lane, look at the main driver/passenger side mirror to observe traffic in the adjacent lane, behind your vehicle. Check the blind spot mirror for a vehicle in the blind zone. Then, glance over your shoulder to double check before moving slowly into the adjacent lane.

Reverse Tilt Mirrors

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

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

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

To turn this feature on or off, see Vehicle Personalization 155.

Interior Mirrors

Interior Rearview Mirrors

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

If equipped with OnStar, the vehicle may have three control buttons at the bottom of the mirror. See your dealer for more information about OnStar and how to subscribe to it. See OnStar Overview 374.

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

Automatic Dimming Rearview Mirror

The mirror will automatically reduce the glare of the headlamps from behind. The dimming feature comes on each time the vehicle is started.
Child-View Mirror

If equipped, push up on the sunglasses bin and release. Push the bin back in halfway to secure the mirror in position.

Push the mirror back up when not in use.

Windows

⚠️ Warning

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

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

Power Windows

⚠️ Warning

Children could be seriously injured or killed if caught in the path of a closing window. Never leave keys in a vehicle with children. When there are children in the rear seat, use the window lockout button to prevent operation of the windows. See Keys & 25.
48 Keys, Doors, and Windows

The driver door has switches that control all windows. Each passenger door switch only controls that window. The power windows work when the ignition is in ON/RUN or ACC/ACCESSORY, or in Retained Accessory Power (RAP). See Retained Accessory Power (RAP) 203.

Press the switch to lower the window. Pull the switch up to raise it.

Express-Down Windows
Windows that have the express-down feature allow the windows to be lowered without holding the switch. Press the window switch fully and release it to activate the express-down feature. The express mode can be canceled at any time by briefly pressing or pulling the switch.

Express-Up Window
If equipped, the driver window express-up feature allows the window to be raised without holding the switch. Pull the window switch up fully and release it to activate the express-up feature. The express-up feature can be canceled at any time by briefly pulling the switch.

Programming the Power Windows
If the battery on the vehicle has been recharged or disconnected, or is not working, the driver power window will need to be reprogrammed for the express-up feature to work.

To reprogram the power windows:
1. Close all doors.
2. Place the ignition in ACC/ACCESSORY or ON/RUN/START.
3. From any open position, pull the power window switch up until the window is fully closed.
4. Hold the switch up for approximately two seconds after the window is fully closed.

The window is now reprogrammed.

Express Window Anti-Pinch Feature
If any object is in the path of the window when express-up is active, the window stops at the obstacle and auto-reverses to a preset factory position. Weather conditions such as severe icing also cause the window to auto-reverse. The window returns to normal operation once the obstacle or condition is removed.
Express Window Anti-Pinch Override

⚠️ Warning
If express override is activated, the window will not reverse automatically. You or others could be injured and the window could be damaged. Before you use express override, make sure that all people and obstructions are clear of the window path.

The anti-pin feature can be overridden in a supervised mode. Hold the window switch in the partially or fully pulled up position. The window rises for as long as the switch is held. Once the switch is released, the express mode is reactivated.

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

Window Lockout
This feature prevents the rear passenger windows from operating, except from the driver position.

- Press 🏷️ to activate the rear window locks. An indicator light will illuminate when the feature is on.
- Press 🏷️ again to deactivate the rear window locks.

Sun Visors
Pull the sun visor down to block glare. Detach the sun visor from the center mount to pivot to the side window or, if equipped, extend along the rod.
## Roof

### Sunroof

<table>
<thead>
<tr>
<th>Switch</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open/Close</td>
</tr>
<tr>
<td>2</td>
<td>Vent</td>
</tr>
</tbody>
</table>

On vehicles with a sunroof, the sunroof only operates when the ignition is in ACC/ACCESSORY or ON/RUN, or when Retained Accessory Power (RAP) is active. See *Retained Accessory Power (RAP)™* 203.

**Vent**: From the closed position, press the rear of switch (2) to vent the sunroof.

**Open/Close**: To open the sunroof, press and hold switch (1) until the sunroof reaches the desired position. Press and hold the front of switch (1) to close it.

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

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

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

If an object is in the path of the sunroof while it is closing, the anti-pinch feature will detect the object and stop the sunroof.

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

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52  Seats and Restraints

Head Restraints

Front Seats

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

⚠️ Warning

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

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

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

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

The front seat outboard head restraints are not removable.
Second Row Seats

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

The second row seat outboard head restraints are not removable.

Third Row Seats

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

Front Seats

Power Seat Adjustment

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

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

If you are installing a child restraint in the third row seat, see "Securing a Child Restraint Designed for the LATCH System" under Lower Anchors and Tethers for Children (LATCH System) 92.
54 Seats and Restraints

To adjust the seat:

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

To adjust the seatback, see Reclining Seatbacks \(\triangleright\) 54.

To adjust the lumbar support, see Lumbar Adjustment \(\triangleright\) 54.

Some vehicles are equipped with a feature that activates a vibrating pulse alert in the driver seat to help the driver avoid crashes. See Driver Assistance Systems \(\triangleright\) 231.

Lumbar Adjustment

To adjust the lumbar support:

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

Reclining Seatbacks

To recline the seatback:

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

⚠️ Warning

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

(Continued)
Warning (Continued)

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

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

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

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

Memory Seats

If memory equipped, the SET, 1, 2, and (Exit) buttons on the driver door are used to manually save and recall memory settings for the driver seat, outside mirrors, power tilt and telescoping steering column, and adjustable pedals.

Storing Memory Positions

To save positions to the 1 and 2 buttons:

1. The ignition must be in ON/RUN or ACC/ACCESSORY.
2. Adjust the driver seat, outside mirrors, power tilt and telescoping steering column, and adjustable pedals to the desired driving positions.
3. Press and release SET.
4. Immediately press and hold 1 until two beeps sound.
5. Repeat Steps 1–4 for a second driver using 2.
56 Seats and Restraints

To store positions to the B (Exit) button and easy exit features, repeat above Steps 1–4 to store your positions for getting out of the vehicle.

Manually Recalling Memory Positions

Press and hold 1, 2, or B to manually recall the previously stored memory positions. Releasing 1, 2, or B before the stored positions are reached stops the recall.

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

Automatically Recalling Memory Positions (Auto Memory Recall)

If programmed on in the vehicle personalization Menu, the Auto (Automatic) Memory Recall feature automatically recalls the current driver’s previously stored 1 or 2 position when the ignition is changed from off to ON/RUN or ACC/ACCESSORY.

See “Auto Memory Recall” under "Comfort and Convenience" in Vehicle Personalization ▶ 155.

To stop recall movement, press one of the memory, power mirror, or power seat controls; press the power tilt and telescoping steering column control; or press the adjustable pedal control.

If something has blocked the driver seat, power tilt and telescoping steering column, and/or the adjustable pedals while recalling a memory position, the recall may stop. Remove the obstruction; then press and hold the appropriate manual control for the memory item that is not recalling for two seconds. Try recalling the memory position again by opening the driver door and pressing ⬆ on the RKE transmitter. If the memory position is still not recalling, see your dealer for service.

RKE transmitters are not labeled with a number. If your memory seat position is stored to 1 or 2, but this position is not automatically recalling, then change the stored position or switch RKE transmitters with the other driver.

Easy Exit Recall

If programmed on in the vehicle personalization menu, the easy exit feature automatically recalls the previously stored B (Exit) positions for getting out of the vehicle. See Vehicle Personalization ▶ 155.

Easy exit recall automatically activates when one of the following occurs:

- The vehicle is turned off and the driver door is opened within a short time.
- The vehicle is turned off with the driver door open.
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If something has blocked the driver seat, power tilt and telescoping steering column, and/or adjustable pedals while recalling the exit position, the recall may stop. Remove the obstruction; then press and hold the appropriate manual control for the exit feature not recalling for two seconds. Try recalling the exit position again. If the exit position is still not recalling, see your dealer for service.

Heated and Cooled Front Seats

⚠️ Warning

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

The buttons are on the center stack below the climate control system. To operate, the engine must be running.

Press 📪 to heat the driver or passenger seatback only.

Press 🌡️ to cool the driver or passenger seat.

The indicator light on the button comes on when this feature is on. Press the button once for the highest setting. With each press of the button, the seat will change to the next lower setting, and then to the off setting. The indicator lights next to the buttons indicate three for the highest setting and one for the lowest. If the heated seats are on high for an extended time, their level may automatically be lowered.

The passenger seat may take longer to heat up.

Remote Start Auto Heated and Cooled Seats

During a remote start, the heated or cooled seats can be turned on automatically. When it is cold outside, the heated seats turn on, and when it is hot outside the cooled seats turn on. The heated or
58 Seats and Restraints

cooled seats are canceled when the ignition is turned on. Press the heated or cooled seat button to use the heated or cooled seats after the vehicle is started.

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

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

The heated or cooled seats will not turn on during a remote start unless they are enabled in the vehicle personalization menu. See Remote Vehicle Start \( \rightarrow \) 33 and Vehicle Personalization \( \rightarrow \) 155.

### Rear Seats

#### Heated Rear Seats

![Warning]

If you cannot feel temperature change or pain to the skin, the seat heater may cause burns. See the Warning under Heated and Cooled Front Seats \( \rightarrow \) 57.

Press 🌡️ or ⛄️ to heat the left outboard or right outboard seat cushion.

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. Indicator lights on the button show the setting: three for high, two for medium, and one for low.

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

The buttons are on the rear of the center console.
Second Row Seats

Reclining Seatbacks

To recline the seatback:

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

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

To return the seatback to the upright position:

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

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

<table>
<thead>
<tr>
<th>Manual Fold and Tumble Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning</strong></td>
</tr>
<tr>
<td>Do not leave the second row seat in a tumbled position while the vehicle is in motion. A tumbled seat is not locked. It can move when the vehicle is in motion. People in the vehicle could be injured in a sudden stop or crash. Be sure to return the seat to the passenger seating position before driving the vehicle. Push and pull on the seat to make sure it is locked into place.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folding a rear seat with the safety belts still fastened may cause damage to the seat or the safety belts. Always unbuckle the safety belts and return them to their normal stowed position before folding a rear seat.</td>
</tr>
</tbody>
</table>
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Folding and Tumbling the Seat

To fold and tumble the seat:

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

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

The seatback will fold forward to create a flat load floor. If the seatback cannot fold flat, try moving the front seat forward and/or put the front seatback in the upright position.

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

4. The rear pull strap can also be used to fold or fold and tumble the seat. It is easier to tumble the seat with the rear pull strap once the seat is folded flat.
Folding and Tumbling the Seat from the Third Row Seat

**Warning**

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

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

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

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

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

**Automatic Fold and Tumble Feature**

**Warning**

Do not leave the second row seat in a tumbled position while the vehicle is in motion. A tumbled seat is not locked. It can move when the vehicle is in motion. People in the vehicle could be injured in a sudden stop or crash. Be sure to return the seat to the passenger seating position before driving the vehicle. Push and pull on the seat to make sure it is locked into place.
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⚠️ Warning
Automatically folding and tumbling the seat when someone is sitting in the seat, could cause injury to the person sitting there. Always make sure there is no one sitting in the seat before pressing the automatic seat release button.

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

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

Fold the seat to load cargo. Fold and tumble the seat for entry to the third row.

Folding and Tumbling the Seat
To fold and tumble the seat:
1. Make sure that there is nothing under, in front of, or on the seat.

Driver Side Rear Panel Button Shown
2. Press the automatic seat release button on the panel behind the rear doors. The seatback automatically folds flat.
3. Press the button again to release the rear of the seat from the floor. The seat will tumble forward.

Folding and Tumbling the Seat from the Cargo Area
1. Second Row Power Seat Buttons
2. Third Row Power Seat Buttons

To fold and tumble the seat from the cargo area:
1. Make sure that there is nothing under, in front of, or on the seat.
2. Press the button (1) on the side trim of the cargo area to fold the seatback.
Seats and Restraints

The left button folds the left seatback, and the right button folds the right seatback.

3. Press the button again to release the rear of the seat from the floor. The seat will tumble forward.

The buttons (2) can be used to fold and unfold the third row seatbacks from the cargo area. See Third Row Seats 63.

Returning the Seat to the Sitting Position

⚠️ Warning

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

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

1. Pull the seat down until both sides of the seat are latched to the floor. Make sure the seat is securely latched to the floor before raising the seatback. If both sides are not latched to the floor, the seatback will not raise.

2. Lift the seatback and push it rearward. Push and pull on the seatback to make sure it is locked.

Third Row Seats

Folding the Seatback

⚠️ Caution

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

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

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

1. Second Row Power Seat Buttons
2. Third Row Power Seat Buttons

To fold the seatback:

1. Open the liftgate to access the controls for the seat.

2. Make sure that there is nothing under, in front of, or on the seat.
3. Fully lower the head restraints. See Head Restraints  52. Put the second row seatback in the upright position. See Second Row Seats  59.

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

5. Press and hold the switch (2) on the side trim of the cargo area to fold the seatback.

   The left switch folds the left seatback, and the right switch folds the right seatback.

6. Repeat the steps for the other seatback, if desired.

The switches (1) can be used to fold or fold and tumble the second row seats from the cargo area. See Second Row Seats  59.

Returning the Seatback to the Upright Position

1. Second Row Power Seat Buttons
2. Third Row Power Seat Buttons

To return the seatback to the upright position:

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

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

3. Reconnect the center safety belt mini-latch to the mini-buckle. Do not let it twist.

4. Pull on the safety belt to be sure the mini-latch is secure.

5. Repeat the steps for the other seatback, if desired.

Safety Belts

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

A Warning

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

It is extremely dangerous to ride in a cargo area, inside or outside of a vehicle. In a collision, passengers riding in these areas are more likely to be seriously injured or killed. Do not allow (Continued)

Warning (Continued)

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

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

This vehicle has indicators as a reminder to buckle the safety belts. See Safety Belt Reminders 126.

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

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

Questions and Answers About Safety Belts

Q: Will I be trapped in the vehicle after a crash if I am wearing a safety belt?
A: You could be — whether you are wearing a safety belt or not. Your chance of being conscious during and after a crash, so you can unbuckle and get out, is much greater if you are belted.

Q: If my vehicle has airbags, why should I have to wear safety belts?
A: Airbags are supplemental systems only; so they work with safety belts — not instead of them. Whether or not an airbag is provided, all occupants still have to buckle up to get the most protection.

Questions and Answers About Safety Belts

Q: If my vehicle has airbags, why should I have to wear safety belts?
A: Airbags are supplemental systems only; so they work with safety belts — not instead of them. Whether or not an airbag is provided, all occupants still have to buckle up to get the most protection.

How to Wear Safety Belts Properly

This section is only for people of adult size.

There are special things to know about safety belts and children. And there are different rules for smaller children and infants. If a child will be riding in the vehicle, see Older Children ∘ 86 or Infants and Young Children ∘ 87. Follow those rules for everyone's protection.

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

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

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

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

### Warning

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

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

### Lap-Shoulder Belt

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

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

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

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

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

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

   If the shoulder portion of a passenger belt is pulled out all the way, the child restraint locking feature may be engaged. If this happens, let the belt go back all the way and start again.
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Engaging the child restraint locking feature in the front outboard seating position may affect the passenger sensing system. See Passenger Sensing System \( \Rightarrow 80 \).

3. Push the latch plate into the buckle until it clicks. If the latch plate will not go fully into the buckle, check if the correct buckle is being used. Pull up on the latch plate to make sure it is secure. If the belt is not long enough, see Safety Belt Extender \( \Rightarrow 72 \). Position the release button on the buckle so that the safety belt could be quickly unbuckled if necessary.

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

5. To make the lap part tight, pull up on the shoulder belt. For third row seats, it may be necessary to pull stitching on the safety belt through the latch plate to fully tighten the lap belt on smaller occupants.
To unlatch the belt, push the button on the buckle. The belt should return to its stowed position.

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

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

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

**Shoulder Belt Height Adjuster**

The vehicle has a shoulder belt height adjuster for the driver and front outboard passenger positions. Adjust the height so the shoulder portion of the belt is on the shoulder and not falling off of it. The belt should be close to, but not contacting, the neck. Improper shoulder belt height adjustment could reduce the effectiveness of the safety belt in a crash. See *How to Wear Safety Belts Properly* 66.

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

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

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

**Safety Belt Pretensioners**

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

Pretensioners work only once. If the pretensioners activate in a crash, the pretensioners and probably other parts of the vehicle’s safety belt system will need to be replaced. See Replacing Safety Belt System Parts after a Crash 73.

**Rear Safety Belt Comfort Guides**

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

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

**Second Row Outboard Seating Positions**

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

To install:

1. Remove the guide from its storage clip on the interior trim next to the outboard seatback.
2. Place the guide over the belt, and insert the two edges of the belt into the slots of the guide.

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

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

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

**Third Row Seating Positions**

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

**Safety Belt Use During Pregnancy**

Safety belts work for everyone, including pregnant women. Like all occupants, they are more likely to be seriously injured if they do not wear safety belts.
A pregnant woman should wear a lap-shoulder belt, and the lap portion should be worn as low as possible, below the rounding, throughout the pregnancy.

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

**Safety Belt Extender**

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

**Safety System Check**

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

Make sure the safety belt reminder light is working. See *Safety Belt Reminders* 126.

Keep safety belts clean and dry. See *Safety Belt Care* 72.

**Safety Belt Care**

Keep belts clean and dry.

*Warning*

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

⚠️ Warning

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

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

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

Have the safety belt pretensioners checked if the vehicle has been in a crash, or if the airbag readiness light stays on after you start the vehicle or while you are driving. See Airbag Readiness Light 127.

Airbag System

The vehicle has the following airbags:

- A frontal airbag for the driver.
- A frontal airbag for the front outboard passenger.
- A front center airbag for the driver and front outboard passenger.
- A seat-mounted side impact airbag for the driver.
- A seat-mounted side impact airbag for the front outboard passenger.
- A roof-rail airbag for the driver and for the second and third row passengers seated directly behind the driver.
- A roof-rail airbag for the front outboard passenger and the second and third row passengers seated directly behind the front outboard passenger.
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All vehicle airbags have the word AIRBAG on the trim or on an attached label near the deployment opening.

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

For the front center airbag, the word AIRBAG is on the inboard side of the driver seatback.

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

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

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

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

⚠️ Warning

You can be severely injured or killed in a crash if you are not wearing your safety belt, even with airbags. Airbags are designed to work with safety belts, not replace them. Also, airbags are not designed to inflate in every crash. In some crashes safety belts are the only restraint. See When Should an Airbag Inflate? 76.

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

⚠️ Warning

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

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

(Continued)
Warning (Continued)

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

Warning

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Always secure children properly in the vehicle. To read how, see Older Children \(\Rightarrow 86\) or Infants and Young Children \(\Rightarrow 87\).

Where Are the Airbags?

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 \(\Rightarrow 127\).

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

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

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

Driver Side Shown, Passenger Side Similar

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

Driver Side Shown, Passenger Side Similar

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

Warning

If something is between an occupant and an airbag, the airbag might not inflate properly or it might force the object into that person causing severe injury or even death. The path of an inflating airbag must be kept clear. Do not put anything between an occupant and an airbag, and do not attach or put anything on the steering wheel hub or on or near any other airbag covering.

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

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

When Should an Airbag Inflate?

This vehicle is equipped with airbags. See Airbag System 73. Airbags are designed to inflate if the...
impact exceeds the specific airbag system's deployment threshold. Deployment thresholds are used to predict how severe a crash is likely to be in time for the airbags to inflate and help restrain the occupants. The vehicle has electronic sensors that help the airbag system determine the severity of the impact. Deployment thresholds can vary with specific vehicle design.

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

Whether the frontal airbags will or should inflate is not based primarily on how fast the vehicle is traveling. It depends on what is hit, the direction of the impact, and how quickly the vehicle slows down.

Frontal airbags may inflate at different crash speeds depending on whether the vehicle hits an object straight on or at an angle, and whether the object is fixed or moving, rigid or deformable, narrow or wide.

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

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

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

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

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

Roof-rail airbags are designed to inflate in moderate to severe side crashes depending on the location of the impact. In addition, these roof-rail airbags are designed to inflate during a rollover or in a severe frontal impact. Roof-rail airbags are not designed to inflate in rear impacts. Both roof-rail airbags will inflate when either side of the vehicle is struck, if the sensing system predicts that the vehicle is about to roll over on its side, or in a severe frontal impact.
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In any particular crash, no one can say whether an airbag should have inflated simply because of the vehicle damage or the repair costs.

What Makes an Airbag Inflated?

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? 75.

How Does an Airbag Restrain?

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

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

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

But airbags would not help in many types of collisions, primarily because the occupant's motion is not toward those airbags. See When Should an Airbag Inflate? 76 for more information.

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

What Will You See after an Airbag Inflates?

After the frontal airbags and seat-mounted side impact airbags inflate, they quickly deflate, so quickly that some people may not even realize an airbag inflated. The front center airbag and roof-rail airbags may still be at least partially inflated for some time after they inflate. Some components of the airbag module may be hot for several minutes. For location of the airbags, see Where Are the Airbags? 75.

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

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

The vehicle has a feature that may automatically unlock the doors, turn on the interior lamps and hazard warning flashers, and shut off the fuel system after the airbags inflate. The feature may also activate, without airbag inflation, after an event that exceeds a predetermined threshold. You can lock the doors, and turn off the interior lamps and hazard warning flashers by using the controls for those features.

Warning

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

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

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

• Airbags are designed to inflate only once. After an airbag inflates, you will need some new parts for the airbag system. If you do not get them, the airbag system will not be there to help protect you in another crash. A new system will include airbag modules and possibly other parts. The service manual for the vehicle covers the need to replace other parts.

• The vehicle has a crash sensing and diagnostic module which records information after a crash. See Vehicle Data Recording and Privacy and Event Data Recorders.

• 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.
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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.

![Passenger Airbag Status Indicator]

United States

The words ON and OFF, or the symbol for on or off, will be visible during the system check. When the system check is complete, either the word ON or OFF, or the symbol for on or off, will be visible. See Passenger Airbag Status Indicator \(\Rightarrow 127\).

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

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

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

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

Canada and Mexico

The words ON and OFF, or the symbols for on and off, will be visible during the system check. When the system check is complete, either the word ON or OFF, or the symbol for on or off, will be visible. See Passenger Airbag Status Indicator \(\Rightarrow 127\).

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.

\[\text{Warning}\]

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

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

(Continued)
Warning (Continued)

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

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

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

When the passenger sensing system has turned off the front outboard passenger frontal airbag, the off indicator will light and stay lit as a reminder that the airbag is off. See Passenger Airbag Status Indicator. When the passenger sensing system has allowed the airbag to be enabled, the on indicator will light and stay lit as a reminder that the airbag is active.

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

⚠️ Warning

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

If the On Indicator is Lit for a Child Restraint

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

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

3. Remove any additional items from the seat such as blankets, cushions, seat covers, seat heaters, or seat massagers.

4. Reinstall the child restraint following the directions provided by the child restraint manufacturer and refer to Securing Child Restraints (Rear Seat) $\Rightarrow$ 100 or Securing Child Restraints (Front Passenger Seat) $\Rightarrow$ 103.

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

5. If, after reinstalling the child restraint and restarting the vehicle, the on indicator is still lit, turn the vehicle off. Then slightly recline the vehicle seatback and adjust the seat cushion, if adjustable, to make sure that the vehicle seatback is not pushing the child restraint into the seat cushion.

Also make sure the child restraint is not trapped under the vehicle head restraint. If this happens, adjust the head restraint. See Head Restraints $\Rightarrow$ 52.

6. Restart the vehicle.

The passenger sensing system may or may not turn off the airbag for a child in a child restraint depending upon the child’s size. It is better to secure the child restraint in a rear seat.

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

If a person of adult size is sitting in the front outboard passenger seat, but the off indicator is lit, it could be because that person is not sitting properly in the seat or that the child restraint locking feature is engaged. If this happens, use the following steps to allow the system to detect that person and enable the front outboard passenger frontal airbag:

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

3. Place the seatback in the fully upright position.

4. Have the person sit upright in the seat, centered on the seat cushion, with legs comfortably extended.

5. If the shoulder portion of the belt is pulled out all the way, the child restraint locking feature will be engaged. This may unintentionally cause the passenger sensing system to turn the airbag off for some adult-sized occupants. If this happens, unbuckle the belt, let the belt go back all the way, and then buckle the belt again without pulling the belt out all the way.

6. Restart the vehicle and have the person remain in this position for two to three minutes after the on indicator is lit.

**Warning**

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

### Additional Factors Affecting System Operation

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

**Warning**

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

Servicing the Airbag-Equipped Vehicle

Airbags affect how the vehicle should be serviced. There are parts of the airbag system in several places around the vehicle. Your dealer and the service manual have information about servicing the vehicle and the airbag system. To purchase a service manual, see Service Publications Ordering Information 369.

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, safety belts, airbag sensing and diagnostic module, steering wheel, instrument panel, any airbag module, ceiling or pillar garnish trim, overhead console, front sensors, side impact sensors, airbag wiring, or front center console.

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

In addition, the vehicle has a passenger sensing system that includes sensors as part of the front outboard 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 80.
If the vehicle has rollover roof-rail airbags, see Different Size Tires and Wheels 313 for additional important information.

If you have to modify your vehicle because you have a disability and you have questions about whether the modifications will affect the vehicle's airbag system, or if you have questions about whether the airbag system will be affected if the vehicle is modified for any other reason, call Customer Assistance. See Customer Assistance Offices 362.

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 127.

<table>
<thead>
<tr>
<th>Caution (Continued)</th>
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</thead>
<tbody>
<tr>
<td>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? 75. See your dealer for service.</td>
</tr>
</tbody>
</table>

Warning (Continued)

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 127.

Replacing Airbag System Parts after a Crash

Warning

A crash can damage the airbag systems in the vehicle. A damaged airbag system may not work properly and may not protect you and your passenger(s) in a crash, resulting in serious injury or even death. To help make sure the airbag systems are working properly (Continued)
## Seats and Restraints

### Child Restraints

#### Older Children

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

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

- Sit all the way back on the seat. Do the knees bend at the seat edge? If yes, continue. If no, return to the booster seat.
- Buckle the lap-shoulder belt. Does the shoulder belt rest on the shoulder? If yes, continue. If no, try using the rear safety belt comfort guide, if available. See “Rear Safety Belt Comfort Guides” under Lap-Shoulder Belt 67. If a comfort guide is not available, or if the shoulder belt still does not rest on the shoulder, then return to the booster seat.
- Does the lap belt fit low and snug on the hips, touching the thighs? If yes, continue. If no, return to the booster seat.
- Can proper safety belt fit be maintained for the length of the trip? If yes, continue. If no, return to the booster seat.

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

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

According to accident statistics, children are safer when properly restrained in a rear seating position. In a crash, children who are not buckled up can strike other people who are buckled up, or can be thrown out of the vehicle. Older children need to use safety belts properly.


**Warning**

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

**Warning**

Never allow a child to wear the safety belt with the shoulder belt behind their back. A child can be seriously injured by not wearing the lap-shoulder belt properly. In a crash, the child would not be restrained by the shoulder belt. The child could move too far forward increasing the chance of head and neck injury. The child might also slide under the lap belt. The belt force would then be applied right on the abdomen. That could cause serious or fatal injuries. The shoulder belt should go over the shoulder and across the chest.

---

**Infants and Young Children**

Everyone in a vehicle needs protection! This includes infants and all other children. Neither the distance traveled nor the age and size of the traveler changes the need, for everyone, to use safety restraints. In fact, the law in every state in the United States and in every Canadian province says children up to some age must be restrained while in a vehicle.
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⚠️ Warning

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

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

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

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

⚠️ Warning

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

⚠️ Warning

Children who are up against, or very close to, any airbag when it inflates can be seriously injured or killed. Never put a rear-facing child restraint in the front outboard seat. Secure a rear-facing child restraint in a rear seat. It is also better to secure a forward-facing child restraint in a rear seat. If you must secure a forward-facing child restraint in the front outboard seat, always move the front passenger seat as far back as it will go.
Q: What are the different types of add-on child restraints?
A: Add-on child restraints, which are purchased by the vehicle owner, are available in four basic types. Selection of a particular restraint should take into consideration not only the child's weight, height, and age but also whether or not the restraint will be compatible with the motor vehicle in which it will be used.

For most basic types of child restraints, there are many different models available. When purchasing a child restraint, be sure it is designed to be used in a motor vehicle. If it is, the restraint will have a label saying that it meets federal motor vehicle safety standards. The restraint manufacturer instructions that come with the restraint state the weight and height limitations for a particular child restraint. In addition, there are many kinds of restraints available for children with special needs.

⚠️ Warning

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

⚠️ Warning

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

Rear-Facing Infant Seat
A rear-facing infant seat provides restraint with the seating surface against the back of the infant. The harness system holds the infant in place and, in a crash, acts to keep the infant positioned in the restraint.

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

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

Securing an Add-On Child Restraint in the Vehicle

⚠️ Warning
A child can be seriously injured or killed in a crash if the child restraint is not properly secured in the vehicle. Secure the child.

(Continued)
Warning (Continued)

restraint properly in the vehicle using the vehicle safety belt or LATCH system, following the instructions that came with that child restraint and the instructions in this manual.

To help reduce the chance of injury, the child restraint must be secured in the vehicle. Child restraint systems must be secured in vehicle seats by lap belts or the lap belt portion of a lap-shoulder belt, or by the LATCH system. See Lower Anchors and Tethers for Children (LATCH System) ∘ 92. Children can be endangered in a crash if the child restraint is not properly secured in the vehicle.

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

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

In some areas of the United States and Canada, Certified Child Passenger Safety Technicians (CPSTs) are available to inspect and demonstrate how to correctly use and install child restraints. In the U.S., refer to the National Highway Traffic Safety Administration (NHTSA) website to locate the nearest child safety seat inspection station. For CPST availability in Canada, check with Transport Canada or the Provincial Ministry of Transportation office.

Securing the Child Within the Child Restraint

Warning

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

Where to Put the Restraint

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

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

The vehicle is equipped with a front center airbag in the inboard side of the driver seat. Even with a front
Seats and Restraints

Center airbag, a child restraint can be installed in any second row seating position.

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

⚠️ Warning

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

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

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

See Passenger Sensing System for additional information.

Warning (Continued)

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

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

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

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

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

Lower Anchors and Tethers for Children (LATCH System)

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

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

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

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

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

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

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

Not all vehicle seating positions or child restraints have lower anchors and attachments or top tether anchors and attachments. In this case, the safety belt must be used (with top tether where available) to secure the child restraint. See Securing Child Restraints (Rear Seat) 100 or Securing Child Restraints (Front Passenger Seat) 103.

**Lower Anchors**

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

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

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

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

Lower Anchor and Top Tether Anchor Locations

Second Row — 60/40

Second Row — Bucket

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

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

(Lower Anchor) : Seating positions with two lower anchors.
Third Row Seat
(Top Tether Anchor) : Seating positions with top tether anchors.

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

Second Row Seat — Bucket
For models with bucket second row seating, the top tether anchors are at the bottom rear of the seat.

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

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

For the third row seat, the top tether anchors are on the back of the seatback. Move the flipper panel rearward to access the anchors. Be sure to use an anchor on the same side of the vehicle as the seating position where the child restraint will be placed.

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

Securing a Child Restraint Designed for the LATCH System

According to accident statistics, children and infants are safer when properly restrained in a child restraint system or infant restraint system secured in a rear seating position. See Where to Put the Restraint  91 for additional information.

⚠️ Warning
If a LATCH-type child restraint is not attached to anchors or with the safety belt, the child restraint will not be able to protect the child correctly. In a crash, the child could be seriously injured or killed. Install a LATCH-type child restraint properly using the anchors, or use the vehicle safety belts to secure the restraint, following the instructions that came with the child restraint and the instructions in this manual.

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

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

(Continued)
Warning (Continued)

wrapped around a child’s neck. If the shoulder belt is locked and tightened around a child’s neck, the only way to loosen the belt is to cut it.

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

Caution

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

Caution (Continued)

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

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

If you need to secure more than one child restraint in the rear seat, see Where to Put the Restraint 91. This system is designed to make installation of child restraints easier. When using lower anchors, do not use the vehicle’s safety belts. Instead use the vehicle’s anchors and child restraint attachments to secure the restraints. Some restraints also use another vehicle anchor to secure a top tether.

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

For the third row outboard seating positions, if the head restraint interferes with the proper installation of the child restraint, then the head restraint may be removed. See “Head Restraint Removal and Reinstallation under Lower Anchors and Tethers for Children (LATCH System) 92.

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

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

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

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

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

   - If the position you are using does not have a head restraint and you are using a single tether, route the tether over the seatback.
   - If the position you are using has an adjustable head restraint and you are using a single tether, raise the head restraint and route the tether under the head restraint and in between the head restraint posts.

   - If the position you are using does not have a head restraint and you are using a dual tether, route the tether over the seatback.
If the position you are using has a fixed or an adjustable head restraint and you are using a dual tether, route the tether around the head restraint.

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

Head Restraint Removal and Reinstallation

1. Partially fold the seatback forward. See Third Row Seats 63 for additional information.

2. Press the buttons on the head restraint posts and pull up on the head restraint.

3. Route the top tether of the child restraint under the head restraint.
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4. With the head restraint facing rearward, insert the head restraint posts into the holes in the top of the seatback.

5. Push the head restraint down.

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

7. When the child restraint is removed, reinstall the head restraint before the seating position is used.

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

Replacing LATCH System Parts After a Crash

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

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

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

Securing Child Restraints (Rear Seat)

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

If the child restraint has the LATCH system, see Lower Anchors and Tethers for Children (LATCH System) 92 for how and where to install the child restraint using LATCH. If a child restraint is
secured in the vehicle using a safety belt and it uses a top tether, see Lower Anchors and Tethers for Children (LATCH System) 92 for top tether anchor locations.

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

In Canada, the law requires that forward-facing child restraints have a top tether, and that the tether be attached.

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

If more than one child restraint needs to be installed in the rear seat, be sure to read Where to Put the Restraint 91.

1. Put the child restraint on the seat.
   For the third row outboard seating positions, if the head restraint interferes with the proper installation of the child restraint, the head restraint may be removed. See “Head Restraint Removal and Reinstallation” under Lower Anchors and Tethers for Children (LATCH System) 92.

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

3. Push the latch plate into the buckle until it clicks.
   If the latch plate will not go fully into the buckle, check to see if the correct buckle is being used.
   Position the release button on the buckle so that the safety belt could be quickly unbuckled if necessary.
4. Pull the shoulder belt all the way out of the retractor to set the lock. When the retractor lock is set, the belt can be tightened but not pulled out of the retractor.

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

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

6. If the child restraint has a top tether, follow the child restraint manufacturer’s instructions regarding the use of the top tether. Refer to the instructions that came with the child restraint and see Lower Anchors and Tethers for Children (LATCH System) ⇒ 92.

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

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

If the head restraint was removed for a third row outboard seating position, reinstall it before the seating position is used. See “Head
Restraint Removal and Reinstallation” under Lower Anchors and Tethers for Children (LATCH System) ⊗ 92 for additional information on reinstalling the head restraint properly.

Securing Child Restraints (Front Passenger Seat)

This vehicle has airbags. A rear seat is a safer place to secure a forward-facing child restraint. See Where to Put the Restraint ⊗ 91.

In addition, the vehicle has a passenger sensing system which is designed to turn off the front outboard passenger frontal airbag under certain conditions. See Passenger Sensing System ⊗ 80 and Passenger Airbag Status Indicator ⊗ 127 for more information, including important safety information.

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

⚠️ Warning

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

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

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

See Passenger Sensing System ⊗ 80 for additional information.

If the child restraint uses a top tether, see Lower Anchors and Tethers for Children (LATCH System) ⊗ 92 for top tether anchor locations.

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

In Canada, the law requires that forward-facing child restraints have a top tether, and that the tether be attached.
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When using the lap-shoulder belt to secure the child restraint in this position, follow the instructions that came with the child restraint and the following instructions:

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

   When the passenger sensing system has turned off the front outboard passenger frontal airbag, the off indicator on the passenger airbag status indicator should light and stay lit when you start the vehicle. See Passenger Airbag Status Indicator on page 127.

2. Put the child restraint on the seat.

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

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

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

Position the release button on the buckle so that the safety belt could be quickly unbuckled if necessary.
6. To tighten the belt, push down on the child restraint, pull the shoulder portion of the belt to tighten the lap portion of the belt, and feed the shoulder belt back into the retractor. When installing a forward-facing child restraint, it may be helpful to use your knee to push down on the child restraint as you tighten the belt. Try to pull the belt out of the retractor to make sure the retractor is locked. If the retractor is not locked, repeat Steps 5 and 6.

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

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

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

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

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Storage Compartments

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

Instrument Panel Storage

If equipped with storage behind the radio, press and hold ▼ to open. There is a USB port inside. See the infotainment manual.

Press and hold ▼ again to close. Keep the storage area closed when not in use.

The storage area cannot be operated with ▼ when valet mode is enabled. See Vehicle Personalization 155.

The storage area can be operated manually.

Glove Box

Lift up the glove box handle to open it. Use the key to lock and unlock the glove box.

Cupholders

Cupholders are in the front of the console. If equipped, cupholders may be in the second and third row seat armrest areas.
To remove the cupholder for cleaning, press together the front top center of the cupholder and pull out from the chrome ring.

**Sunglasses Storage**

If equipped, sunglasses storage is on the overhead console. Press the fixed button on the cover and release to access. There may be a child-view mirror located within the sunglasses bin. Release the bin and then push up halfway to secure in position.

**Rear Storage**

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

**Center Console Storage**

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

On the rear of the console, there are auxiliary jacks, a High Voltage Power Outlet (HVPO), and an open storage area.

See *Power Outlets* 116 and the infotainment manual.
Additional Storage Features

Cargo Cover

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

To use the cargo cover, if equipped:
1. Pull the cover handle toward the rear of the vehicle.
2. Latch the cover posts into the retaining sockets on the cargo area trim panels.

To return the cover to the retracted position:
1. Pull up on the cover handle to release the cover posts from the retaining sockets.
2. Let the cover move forward to the full retracted position.

To remove the cover:
1. Let the cover go all the way into the holder.
2. Grasping the driver side cover end cap, push the cover end cap toward the passenger side of the vehicle.
3. Swing the cover rearward and take it out of the vehicle.

To put the cover in the vehicle:
1. Make sure the cover slot in the holder faces rearward with the round surface facing down.
2. Hold the cover at an angle and place the cover end cap into the slot in the passenger side trim panel.
3. Move the other end of the cover forward and hold it next to the driver side trim panel slot.
4. Press the end caps in, to allow the cover to fit into the trim slot.
5. Pull lightly on the cover holder to make sure it is secure.

On long wheelbase models there are two cover positions. The slots furthest forward allow the cover to be used if the third seat is removed or folded down. The cover can be installed and removed from either side.

Cargo Tie-Downs
If equipped with cargo tie-downs in the rear cargo area, these can be used to strap cargo down and keep it from moving inside the vehicle.

Convenience Net
Use the convenience net, located in the rear, to store small loads as far forward as possible. The net should not be used to store heavy loads.
### Roof Rack System

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

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

<table>
<thead>
<tr>
<th><strong>Caution</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading cargo on the roof rack that weighs more than 100 kg (220 lb) or hangs over the rear or sides of the vehicle may damage the vehicle. Load cargo so that it rests evenly between the crossrails, making sure to fasten cargo securely.</td>
</tr>
</tbody>
</table>

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

Do not exceed the maximum vehicle capacity when loading the vehicle. For more information on vehicle capacity and loading, see *Vehicle Load Limits* 194.

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

Instruments and Controls

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Controls

Steering Wheel Adjustment

Power Tilt and Telescoping Steering Wheel

To adjust the power tilt and telescoping steering wheel, if equipped:

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

Do not adjust the steering wheel while driving.

Steering Wheel Controls

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

Heated Steering Wheel

(Heated Steering Wheel) : Press to turn it on or off. A light next to the button displays when the feature is turned on.

The steering wheel takes about three minutes to start heating.
112 Instruments and Controls

Horn
To sound the horn, press 🎉 on the steering wheel.

Windshield Wiper/Washer
The windshield wiper control is on the turn signal lever.

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

- 🚪 (High Speed) : Fast wipes.
- 🚪 (Low Speed) : Slow wipes.
- 🚪 INT (Intermittent Wipes) : Turn the 🚪 FRONT band up for more frequent wipes or down for less frequent wipes.
- ⏶ OFF : Turns the windshield wipers off.

рактически 🚪 (Mist) : For a single wipe, turn to 🚪 , then release. For several wipes, hold the band on 🚪 longer.

Clear ice and snow from the wiper blades before using them. If frozen to the windshield, carefully loosen or thaw them. Damaged wiper blades should be replaced. See Wiper Blade Replacement 282.

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

Wiper Parking
If the ignition is put in OFF while the wipers are on 🚪, 🚪, or 🚪 INT, they will immediately stop.

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

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

Rainsense™
With Rainsense, a sensor near the top center of the windshield detects the amount of water on the windshield and controls the frequency of the windshield wiper.

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

рактически 🚪 INT (Rainsense Wipe Sensitivity) : Turn the 🚪 FRONT band on the wiper lever to adjust the sensitivity when Rainsense is turned on.
- Turn the band up to a higher INT setting for more sensitivity to moisture.
- Turn the band down to the lower INT setting for less sensitivity to moisture.

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

**AUTO (Rainsense On/Off)**
- Press to turn Rainsense on or off. When turned on and FRONT is in one of the Rainsense wipe sensitivity positions, the wipers can be adjusted for more or less sensitivity to moisture by adjusting the INT position. When turned off, the wipers operate as timed intermittent wipers and can be adjusted for more or less frequent wipes.

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

If the ignition is in ON/RUN and FRONT is not in one of the sensitivity settings when AUTO is turned on, a message may display indicating that the wiper band must be in one of the sensitivity settings for Rainsense to operate.

**Windshield Washer**

**Warning**

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

**Wiper Arm Assembly Protection**

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

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

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

**Windshield Washer**

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

Rear Window Wiper/Washer

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

Rear Wiper Arm Assembly Protection

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

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

Reverse Gear Wipes

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

This feature can be turned on or off. See Vehicle Personalization 155.

The windshield washer reservoir is used for the windshield and the rear window. Check the fluid level in the reservoir if either washer is not working. See Washer Fluid 275.

Compass

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

The compass system is designed to operate for a certain number of miles or degrees of turn before needing a signal from the GPS satellites. When the compass display shows CAL, drive the vehicle for a short distance in an
open area where it can receive a GPS signal. The compass system will automatically determine when a GPS signal is restored and provide a heading again. See Compass Messages 0 144 for the messages that may be displayed for the compass.

Clock

Setting the Time and Date with Faceplate Controls

To set the time or date:

1. Select SETTINGS from the Home Page, then select Time and Date.
2. Select the desired function.
3. Turn the MENU knob to increase or decrease the value.
4. Press the MENU knob to go to the next value. After the last value is selected, the system will update and return to the Settings menu. Press BACK to go to the last menu and save the changes.

Auto Set requires an active connection to OnStar.

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

To set the clock display:

1. Select SETTINGS from the Home Page, then select Time and Date.
2. Select Clock Display.
3. Turn the MENU knob to Off or On.
4. Press the MENU knob to select.

Press BACK to go to the last menu and save the changes.

Setting the Time and Date with Touchscreen Controls

To set the time:

1. Touch SETTINGS on the Home Page, then touch Time and Date.
2. Touch Set Time, then touch \ or \ to increase or decrease hours, minutes, and AM or PM. Touch 12–24 Hr for 12 or 24 hour clock.
3. Touch to go back to the previous menu.

Auto Set requires an active connection to OnStar.

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

To set the date:

1. Touch SETTINGS on the Home Page, then touch Time and Date.
2. Touch Set Date, then touch \ or \ to increase or decrease month, day, or year.
3. Touch to go back to the previous menu.
116 Instruments and Controls

To set the clock display:
1. Touch SETTINGS on the Home Page, then touch Time and Date.
2. Touch Clock Display, then touch OFF or ON to turn the clock display off or on.
3. Touch ← to go back to the previous menu.

Power Outlets

Power Outlets 12 Volt Direct Current

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

The vehicle may have up to five accessory power outlets:

Vehicles with a Center Console

- One in front of the cupholders on the center console.
- One inside the center storage console.
- One on the rear of the center storage console.

Vehicles with Bench Seats

- One on the center stack below the climate control system.
- One in the storage area on the bench seat.
- One on the rear of the center armrest storage.
- One in the third row seat area on the driver side.
- One in the rear cargo area on the passenger side.

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

The accessory power outlets are powered as follows:

- The power outlet near the cupholders for vehicles with a center console or on the center stack for vehicles with bench seats, can be configured to operate using Retained Accessory Power (RAP) or battery power modes. If these power outlets are used while in the battery power mode, this could cause interference between the Remote Keyless Entry (RKE) transmitter and the vehicle, and the vehicle may not start. See Ignition Positions 199.

- The power outlets in the third row seat area or in the rear cargo area are powered at all times. The power outlets inside the storage area, on the rear of the console, or on the bench seat are only powered when the ignition is in ON/RUN or ACC/ACCESSORY, or when RAP is active.

⚠️ Warning

Power is always supplied to the outlet, if configured accordingly. Do not leave electrical equipment plugged in when the vehicle is not in use because the vehicle could catch fire and cause injury or death.
## Caution

Leaving electrical equipment plugged in for an extended period of time while the ignition is in LOCK/OFF will drain the battery. Always unplug electrical equipment when not in use and do not plug in equipment that exceeds the maximum 15 ampere rating.

## Caution

Hanging heavy equipment from the power outlet can cause damage not covered by the vehicle warranty. The power outlets are designed for accessory power plugs only, such as cell phone charge cords.

### Power Outlet 110/120 Volt Alternating Current

If equipped with this power outlet, it can be used to plug in electrical equipment that uses a maximum limit of 150 watts.

For vehicles with a center console, the 110/120 volt power outlet is on the rear of the center console.

For vehicles with bench seats, the 110/120 volt power outlet is on the center stack below the climate controls.

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

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

If equipment is connected using more than 150 watts or a system fault is detected, a protection circuit shuts off the power supply and the indicator light turns off. To reset the circuit, unplug the item and plug it back in or turn the ignition off and then back to ON/RUN. The power restarts when equipment using 150 watts or less is plugged into the outlet and a system fault is not detected.
118 Instruments and Controls

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

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

### Wireless Charging

The vehicle may have wireless charging on top of the center console. See Center Console Storage 107. The system wirelessly charges one PMA or Qi compatible mobile device. To check for phone or other device compatibility, see www.gmtotalconnect.com.

#### 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 in ON/RUN, ACC/ACCESSORY, or Retained Accessory Power (RAP). The wireless charging feature may not correctly indicate charging when the vehicle is in RAP. See Retained Accessory Power (RAP) 203.

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

#### Warning (Continued)

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

#### Warning

Remove all metal objects from the charging pad before charging your mobile device. Metal objects, (Continued)
To charge a mobile device:

1. Remove all objects from the charging pad. The system may not charge if there are any objects on the charging pad.

2. Place the mobile device face up on the 📱 symbol on the charging pad.

3. The ⚡ will display on the 🌇 on the infotainment screen. This indicates that the mobile device is properly positioned and charging. If a phone is placed on the charging pad and ⚡ does not display, remove the phone from the pad, and wait three seconds before placing/aligning the phone on the pad again.

---

**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.
120 Instruments and Controls

Instrument Cluster

English Standard Theme Shown, Metric Similar
Cluster Menu

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

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

Press $\leftarrow$ to access the cluster applications. Use $\uparrow$ or $\downarrow$ to scroll through the list of available applications. Not all applications will be available on all vehicles.

- Info App. This is where the selected Driver Information Center (DIC) displays can be viewed. See Driver Information Center (DIC) \(\rightarrow 137\).
- Audio
- Phone
- Navigation
- Settings

Audio

Press $\checkmark$ to select the Audio app, then press $\rightarrow$ to enter the Audio menu. In the Audio menu browse for music, select from the favorites, or change the audio source. Use $\uparrow$ or $\downarrow$ to change the station or go to the next or previous track.

Phone

Press $\checkmark$ to select the Phone app, then press $\rightarrow$ to enter the Phone menu. In the Phone menu, if there is no active phone call, view recent calls, or scroll through contacts.

If there is an active call, mute the phone or switch to handset operation.

Navigation

Press $\checkmark$ to select the Navigation app, then press $\rightarrow$ to enter the Navigation menu. If there is no active route, you can resume the last route and turn the voice prompts on/off. If there is an active route, press $\checkmark$ to cancel or resume route guidance or turn the voice prompts on or off.

Settings

Press $\checkmark$ to select the Settings app, then press $\rightarrow$ to enter the Settings menu. Use $\uparrow$ or $\downarrow$ to scroll through items in the Settings menu.

Units: Press $\rightarrow$ while Units is displayed to enter the Units menu. Choose English, Imperial, or metric units by pressing $\checkmark$ while the desired item is highlighted. A checkmark will be displayed next to the selected item.
122  Instruments and Controls

Display Themes: There are three instrument cluster display configurations to choose from: Standard, Technology, and Media.

Info Pages: Press ▶ while Info Pages is displayed to enter the Info Pages menu and select the items to be displayed in the Info app. See Driver Information Center (DIC) ➔ 137.

Speed Warning: The Speed Warning display allows the driver to set a speed that they do not want to exceed. To set the Speed Warning, press ▶ when Speed Warning is displayed. Press ▲ or ▼ to adjust the value. Press ✓ to set the speed. Once the speed is set, this feature can be turned off by pressing ✓ while viewing this page. If the selected speed limit is exceeded, a pop-up warning is displayed with a chime.

Software Information: Displays open source software information.

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

Odometer
The odometer shows how far the vehicle has been driven, in either kilometers or miles. The odometer displays on the Speed page of the Driver Information Center (DIC).

Trip Odometer
The trip odometer shows how far the vehicle has been driven since the trip odometer was last reset. The trip odometer is accessed and reset through the Driver Information Center (DIC). See Driver Information Center (DIC) ➔ 137.

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

Fuel Gauge

When the ignition is on, the fuel gauge indicates about how much fuel is left in the tank.

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

When the indicator nears empty, the low fuel light comes on. There still is a little fuel left, but the vehicle should be refueled soon.
Here are four things that some owners ask about. None of these show a problem with the fuel gauge:

- At the service station, the fuel pump shuts off before the gauge reads full.
- It takes a little more or less fuel to fill up than the gauge indicated. For example, the gauge may have indicated the tank was half full, but it actually took a little more or less than half the tank’s capacity to fill the tank.
- The gauge moves a little while turning a corner or speeding up.
- The gauge takes a few seconds to stabilize after the ignition is turned on, and goes back to empty when the ignition is turned off.

**Engine Oil Pressure Gauge**

The engine oil pressure gauge shows the engine oil pressure in kPa (kilopascals) or psi (pounds per square inch) when the engine is running.

Oil pressure can vary with engine speed, outside temperature and oil viscosity.

A reading outside the normal operating range can be caused by a dangerously low oil level or some other problem causing low oil pressure. Check the vehicle’s oil as soon as possible. See “OIL.
**124 Instruments and Controls**

**Engine Coolant Temperature Gauge**

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

While driving under normal operating conditions, if the needle moves into the red warning area, the engine is too hot. Pull off the road, stop the vehicle, and turn off the engine as soon as possible.

---

**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.

**PRESSURE LOW STOP ENGINE** under *Engine Oil Messages* 146 and *Engine Oil* 265.
Transmission Temperature Gauge

Metric, Standard Theme Shown

Transmission Temperature Gauge

Metric, Standard Theme Shown

Transmission Temperature Gauge

English, Standard Theme Shown

This gauge appears when the vehicle is in Tow/Haul Mode and shows the transmission fluid temperature. If the gauge is reading in the red area and/or a message appears in the Driver Information Center (DIC), the vehicle must be stopped and the cause checked. One possible cause is a low fluid level in the transmission.

See Transmission Messages 152.

Caution

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

Voltmeter Gauge

Standard Theme Shown

Voltmeter Gauge

Standard Theme Shown

Voltmeter Gauge

Standard Theme Shown

When the ignition is on, this gauge indicates the battery voltage.
126 Instruments and Controls

When the engine is running, this gauge shows the condition of the charging system. The gauge can transition from a higher to lower or a lower to higher reading. This is normal. If the vehicle is operating outside the normal operating range, the charging system light comes on. See Charging System Light ☞ 128 for more information. The voltmeter gauge may also read lower when in fuel economy mode. This is normal.

Readings outside the normal operating range can also occur when a large number of electrical accessories are operating in the vehicle and the engine is left idling for an extended period. This condition is normal since the charging system is not able to provide full power at engine idle. As engine speeds are increased, this condition should correct itself as higher engine speeds allow the charging system to create maximum power.

The vehicle can only be driven for a short time with the readings outside the normal operating range. If the vehicle must be driven, turn off all accessories, such as the radio and air conditioner and unplug all chargers and accessories. Readings outside the normal operating range indicate a possible problem in the electrical system. Have the vehicle serviced as soon as possible.

Safety Belt Reminders

Driver Safety Belt Reminder Light

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

When the vehicle is started, this light flashes and a chime may come on to remind the driver to fasten their safety belt. Then the light stays on solid until the belt is buckled. This cycle may continue several times if the driver remains or becomes unbuckled while the vehicle is moving. If the driver safety belt is buckled, neither the light nor the chime comes on.

Passenger Safety Belt Reminder Light

There may be a passenger safety belt reminder light near the passenger airbag status indicator. See Passenger Sensing System ☞ 80.

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

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

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

**Airbag Readiness Light**

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

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

**Warning**

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

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

**Passenger Airbag Status Indicator**

The vehicle has a passenger sensing system. See *Passenger Sensing System* for important safety information. The passenger airbag status indicator is in the overhead console.
128 Instruments and Controls

When the vehicle is started, the passenger airbag status indicator will light ON and OFF, or the symbol for on and off, for several seconds as a system check. Then, after several more seconds, the status indicator will light either ON or OFF, or the on or off symbol, to let you know the status of the front outboard passenger frontal airbag. If the word ON or the on symbol is lit on the passenger airbag status indicator, it means that the front outboard passenger frontal airbag is allowed to inflate.

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

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

\[\text{Warning}\]

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 ★ 127 for more information, including important safety information.

Charging System Light

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

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

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

See Battery Voltage and Charging Messages ★ 143.

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 Only Mode. See Ignition Positions © 199.

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

Caution

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

Caution

Modifications to the engine, transmission, exhaust, intake, or fuel system, or the use of replacement tires that do not meet the original tire specifications, can cause this light to come on. This could lead to costly repairs not covered by the vehicle warranty. This could also affect the vehicle’s ability to pass an Emissions Inspection/Maintenance test. See Accessories and Modifications © 262.

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

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

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

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

Check the following:

- If fuel has been added to the vehicle using the capless funnel adapter, make sure that it has
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been removed. See “Filling the Tank with a Portable Gas Can” under Filling the Tank 244. 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 242.

If the light remains on, see your dealer.

Emissions Inspection and Maintenance Programs

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

The DLC is under the instrument panel to the left of the steering wheel. Connecting devices that are not used to perform an Emissions Inspection/Maintenance test or to service the vehicle may affect vehicle operation See Add-On Electrical Equipment 259. 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 Only Mode.
- Critical emission control systems have not been completely diagnosed. If this happens, the vehicle would not be ready for inspection and might require several days of routine driving before the system is ready for inspection. This can happen if the 12-volt battery has recently been replaced or run down, or if the vehicle has been recently serviced.

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

Brake System Warning Light

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

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

(!) BRAKE

Metric

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

When the ignition is on, the brake system warning light also comes on when the parking brake is set. The light stays on if the parking brake does not fully release. If it stays on after the parking brake is fully released, it means the vehicle has a brake problem.

If the light comes on while driving, pull off the road and stop carefully. The pedal might be harder to push, or the pedal can go closer to the floor. It may take longer to stop. If the light is still on, have the vehicle towed for service. See *Towing the Vehicle* 330.

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
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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.

**Antilock Brake System (ABS) Warning Light**

This light comes on briefly when the engine is started.

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

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

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

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

See *Brake System Warning Light* 130 and *Brake System Messages* 144.

**Four-Wheel-Drive Light**
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The four-wheel-drive light comes on when the transfer case is shifted into four-wheel drive and the front axle engages. LO or HI will also be next to this light when the vehicle is in four-wheel low or four-wheel high.

Some delay between the shifting and the light coming on is normal.

See Four-Wheel Drive 213.

Tow/Haul Mode Light

For vehicles with the Tow/Haul Mode feature, this light comes on when the Tow/Haul Mode has been activated.

See Tow/Haul Mode 212.

Lane Keep Assist (LKA) Light

This light is green if LKA is available to assist.

LKA may assist by gently turning the steering wheel if the vehicle approaches a detected lane marking without using the turn signal in that direction. The LKA light will turn amber.

This light is amber and flashes as a Lane Departure Warning (LDW) alert, to indicate that the lane marking has been crossed.

See Lane Keep Assist (LKA) 240.

Vehicle Ahead Indicator

If equipped, this indicator will display green when a vehicle is detected ahead and amber when you are following a vehicle ahead much too closely.

See Forward Collision Alert (FCA) System 234.

Traction Off Light

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

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

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

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

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

See Traction Control/Electronic Stability Control 218.

StabiliTrak® OFF Light

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

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

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

See Traction Control/Electronic Stability Control 218.

Traction Control System (TCS)/StabiliTrak® Light

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

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

See Traction Control/Electronic Stability Control 218.

Engine Coolant Temperature Warning Light

This light comes on briefly while starting the engine. 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.

This light comes on briefly while starting the vehicle.
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If it does not, have the vehicle serviced by your dealer. If the system is working normally the indicator light goes off.

### Caution

The engine coolant temperature warning light indicates that the vehicle has overheated. Driving with this light on can damage the engine and it may not be covered by the vehicle warranty. See Engine Overheating \(\Rightarrow 273\).

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 \(\Rightarrow 273\).

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#### Tire Pressure Light

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

When the Light Is On Steady

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

A Driver Information Center (DIC) tire pressure message may also display. See Tire Messages \(\Rightarrow 152\). Stop as soon as possible, and inflate the tires to the pressure value shown on the Tire and Loading Information label. See Tire Pressure \(\Rightarrow 303\).

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

If the light flashes for about a minute and then stays on, there may be a problem with the TPMS. If the problem is not corrected, the light will come on at every ignition cycle. See Tire Pressure Monitor Operation \(\Rightarrow 306\).

#### 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.

It also comes on when the fuel tank is low on fuel. The light turns off when fuel is added. If it does not, have the vehicle serviced.

**Security Light**

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

If the light stays on and the engine does not start, there could be a problem with the theft-deterrent system. See *Immobilizer Operation* 43.

**High-Beam On Light**

This light comes on when the high-beam headlamps are in use. See *Headlamp High/Low-Beam Changer* 166.

**IntelliBeam® Light**

This light comes on when the IntelliBeam system, if equipped, is enabled. See *Exterior Lamp Controls* 165.
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Front Fog Lamp Light

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

The light goes out when the fog lamps are turned off. See Fog Lamps \( \Rightarrow \) 169 for more information.

Lamps On Reminder

This light comes on when the exterior lamps are in use. See Exterior Lamp Controls \( \Rightarrow \) 165.

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 \( \Rightarrow \) 221.

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 \( \Rightarrow \) 224.

Door Ajar Light

This light comes on when a door is open or not securely latched. Before driving, check that all doors are properly closed.
Information Displays

Driver Information Center (DIC)

The DIC displays are shown in the center of the instrument cluster in the Info app. See Instrument Cluster 120. The displays show the status of many vehicle systems. The controls for the DIC are on the right steering wheel control.

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DIC Info Page Options

The info pages on the DIC can be turned on or off through the Settings menu.

1. Press ▲ to access the cluster applications.
2. Press △ or ▼ to scroll to the Settings application.
3. Press ✔ to enter the Settings menu.
4. Scroll to Info Pages and press ▼.
5. Press △ or ▼ to move through the list of possible information displays.
6. Press ✔ while an item is highlighted to select or deselect that item. When an item is selected, a checkmark will appear next to it.

DIC Info Pages

The following is the list of all possible DIC info page displays. Some may not be available for your particular vehicle. Some items may not be turned on by default but can be turned on through the Settings app. See “DIC Info Page Options” earlier in this section.

Speed: Shows the vehicle speed in either kilometers per hour (km/h) or miles per hour (mph). The vehicle odometer is also shown on this page.

Trip A or Trip B, Average Fuel Economy, and Average Speed: Shows the current distance traveled, in either kilometers (km) or miles (mi), since the trip odometer was last reset.

The Average Fuel Economy display shows the approximate average liters per 100 kilometers (L/100 km).
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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 Speed display shows the average speed of the vehicle in kilometers per hour (km/h) or miles per hour (mph). This average is calculated based on the various vehicle speeds recorded since the last reset of this value.

Press and hold √ while this display is active to reset the trip odometer, the average fuel economy, and the average speed. Or press ▲ and select reset in the menu.

Fuel Range and Instantaneous Fuel Economy: Shows the approximate distance the vehicle can be driven without refueling. LOW will be displayed when the vehicle is low on fuel. The fuel range estimate is based on an average of the vehicle’s fuel economy over recent driving history and the amount of fuel remaining in the fuel tank. It also shows if the Active Fuel Management is active and in V4 mode, or inactive and in V8 mode. See Active Fuel Management® 205.

The Instantaneous Fuel Economy display shows the current fuel economy in either liters per 100 kilometers (L/100 km) or miles per gallon (mpg). This number reflects only the approximate fuel economy that the vehicle has right now and changes frequently as driving conditions change.

Timer and Fuel Used: Can be used as a timer. To start the timer, press √ 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 √ briefly while this display is active and the timer is running. To reset the timer to zero, press and hold √ while this display is active.

This also shows the number of liters (L) or gallons (gal) of fuel used since the last reset of this menu item.

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. See Engine Oil Messages 146. The oil should be changed as soon as possible. See Engine Oil 265. In addition to the engine oil life system monitoring the oil life, additional maintenance is recommended in the Maintenance Schedule. See Maintenance Schedule 344.

The Oil Life display must be reset after each oil change. It will not reset itself. Do not to reset the Oil Life display 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 ✓ for several seconds while the Oil Life display is active. See Engine Oil Life System ⊳ 267.

**Tire Pressure**: Shows the approximate pressures of all four tires. Tire pressure is displayed in either kilopascal (kPa) or in pounds per square inch (psi). If the pressure is low, the value for that tire is shown in amber. See Tire Pressure Monitor System ⊳ 305 and Tire Pressure Monitor Operation ⊳ 306.

**Best Fuel Economy**: Displays average fuel economy, the best fuel economy over the selected distance, and a bar graph showing instantaneous fuel economy.

Press ▶ to change the selected distance. Press and hold ✓ while this display is active to reset the best fuel economy and average fuel economy. This display can also be reset by selecting reset in the menu.

**Top Consumers**: Shows a list of the features that are currently impacting the fuel economy, in order from highest to lowest. If a feature is turned off, it will be removed from the list.

**Economy Trend**: Shows history of the Average Fuel Economy from the last 50 km (30 mi). Each bar represents about 5 km (3 mi) of driving. During driving the bars will shift to always reflect the most recent distance on the right side. Press and hold ✓ to clear the graph or press ▶ to reset through the menu.

**ECO Index**: Provides feedback on the efficiency of current driving behavior. The bar graph shows a value that is based on current fuel consumption compared to what is expected from the vehicle with good and bad driving habits. It also shows if the Active Fuel Management is active and in V4 mode, or inactive and in V8 mode. See Active Fuel Management® ⊳ 205.

**Engine Hours**: Shows the total number of hours the engine has run. This display also shows the engine idle hours.

**Trailer Brake**: Displays on vehicles with the Integrated Trailer Brake Control (ITBC) system. TRAILER GAIN shows the trailer gain setting.

OUTPUT shows the power output to the trailer any time a trailer with electric brakes is connected. Output is displayed in 0 to 10 bars. Dashes may appear in the OUTPUT display if a trailer is not connected.

**Speed Signs**: Shows sign information, which comes from a roadway database in the onboard navigation.

**Off Road**: Displays vehicle pitch and roll information, road wheel angle, and four-wheel drive (4WD) status.

**Following Distance**: Used to select the alert timing for the Forward Collision Alert (FCA). See Forward Collision Alert (FCA) System ⊳ 234.

**Blank Page**: Shows no information.
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**Transmission Fluid Temperature Gauge:** Shows the temperature of the automatic transmission fluid in either degrees Celsius (°C) or degrees Fahrenheit (°F).

**Head-Up Display (HUD)**

⚠️ **Warning**

If the HUD image is too bright or too high in your field of view, it may take you more time to see things you need to see when it is dark outside. Be sure to keep the HUD image dim and placed low in your field of view.

If equipped with HUD, some information concerning the operation of the vehicle is projected onto the windshield. The image is projected through the HUD lens on top of the instrument panel. The information appears as an image focused out toward the front of the vehicle.

<table>
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<tr>
<th>Caution</th>
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<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

The HUD information can be displayed in various languages. The speedometer reading and other numerical values can be displayed in either English or metric units. The language selection is changed through the radio and the units of measurement is changed through the instrument cluster. See *Vehicle Personalization* 155 and “Cluster Settings Menu” under *Instrument Cluster* 120.

**HUD Display on the Vehicle Windshield**

The HUD may display some of the following vehicle information and vehicle messages or alerts:

- Speed
- Tachometer
- Audio
- Phone
- Navigation
- Collision Alert
- Cruise Control
- Lane Departure
- Low Fuel
Some vehicle messages or alerts displayed in the HUD may be cleared by using the steering wheel controls. See Vehicle Messages 143.

Some information shown may not be available on your vehicle if it is not equipped with these features.

The HUD control is to the left of the steering wheel.

To adjust the HUD image:
1. Adjust the driver seat.
2. Start the engine.
3. Use the following settings to adjust the HUD.

HUD (Image Adjustment) : Press down or lift up to center the HUD image. The HUD image can only be adjusted up and down, not side to side.

INFO (Display View) : Press to select the display view. Each press will change the display view.

± (Image Brightness) : Lift up and hold to brighten the display. Press down and hold to dim the display. Hold down to turn the display off.

The HUD image will automatically dim and brighten to compensate for outside lighting. The HUD brightness control can also be adjusted as needed.

The HUD image can temporarily light up depending on the angle and position of the sunlight on the HUD display. This is normal.

Polarized sunglasses could make the HUD image harder to see.

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.

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 displays the speed view along with Turn-by-Turn Navigation information. The compass heading is displayed when navigation routing is not active.

Navigation Turn-by-Turn Alerts shown in the instrument cluster may also be displayed in any HUD view.

Care of the HUD

Clean the inside of the windshield to remove any dirt or film that could reduce the sharpness or clarity of the HUD image.

Clean the HUD lens with a soft cloth sprayed with glass cleaner. Wipe the lens gently, then dry it.
Instruments and Controls

HUD Troubleshooting
Check that:

- Nothing is covering the HUD lens.
- HUD brightness setting is not too dim or too bright.
- HUD is adjusted to the proper height.
- Polarized sunglasses are not worn.
- Windshield and HUD lens are clean.

If the HUD image is not correct, contact your dealer.
The windshield is part of the HUD system. See Windshield Replacement \( \Rightarrow \) 284.

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.
The following are the possible messages and some information about them.

Battery Voltage and Charging Messages

BATTERY LOW START VEHICLE
When the vehicle’s battery is severely discharged, this message will display and four chimes will sound. Start the vehicle immediately. If the vehicle is not started and the battery continues to discharge, the climate controls, heated seats, and audio systems will shut off and the vehicle may require a jump start. These systems will function again after the vehicle is started.

BATTERY SAVER ACTIVE
This message displays when the battery voltage drops below expected levels and features are disabled. Turn off all unnecessary accessory features.
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SERVICE BATTERY CHARGING SYSTEM

On some vehicles, this message displays if there is a problem with the battery charging system. Under certain conditions, the charging system light may also turn on in the instrument cluster. See Charging System Light \( \Delta \) 128. Driving with this problem could drain the battery. Turn off all unnecessary accessories. Have the electrical system checked as soon as possible. See your dealer.

TRANSPORT MODE ON

This message is displayed when the vehicle is in transport mode. Some features can be disabled while in this mode, including Remote Keyless Entry (RKE), remote start, and the vehicle alarm system. Take the vehicle to your dealer for service to turn transport mode off.

Brake System Messages

BRAKE FLUID LOW

This message is displayed when the brake fluid level is low. See Brake Fluid \( \Delta \) 277.

SERVICE BRAKE ASSIST

This message may be displayed when there is a problem with the brake boost assist system. When this message is displayed, the brake boost assist motor might be heard operating and you might notice pulsation in the brake pedal. This is normal under these conditions. Take the vehicle to your dealer for service.

SERVICE TRAILER BRAKE SYSTEM

On vehicles with the Integrated Trailer Brake Control (ITBC) system, this message displays and a chime may sound when there is a problem with the ITBC system.

As soon as it is safe to do so, carefully pull your vehicle over to the side of the road and turn the ignition off. Check the wiring connection to the trailer and turn the ignition back on. If this message still displays, either your vehicle or the trailer needs service. See your dealer.

See “Integrated Trailer Brake Control System” under Towing Equipment \( \Delta \) 251 for more information.

Compass Messages

Dashes may be displayed if the vehicle temporarily loses communication with the Global Positioning System (GPS).

Cruise Control Messages

ADAPTIVE CRUISE SET TO XXX

This message displays when the Adaptive Cruise Control (ACC) speed is set. See Adaptive Cruise Control \( \Delta \) 224.
ADAPTIVE CRUISE TEMPORARILY UNAVAILABLE

This message displays when attempting to activate Adaptive Cruise Control (ACC) when it is temporarily unavailable. The ACC system does not need service.

This can occur under the following conditions:
- Cruise is turned on when the vehicle is stopped.
- The radar cannot see objects well. See the next message.

FRONT RADAR BLOCKED – SEE OWNERS MANUAL

This message can display when:
- The radar is not clean. Keep the radar sensors free of mud, dirt, snow, ice, and slush. Clean the entire front and/or rear of the vehicle. For cleaning instructions, see Exterior Care 334.
- Heavy rain or snow is interfering with the radar object detection or camera performance.

CRUISE SET TO XXX

This message displays when the cruise control speed is set. See Cruise Control 221.

NO CRUISE BRAKING GAS PEDAL APPLIED

This message displays when Adaptive Cruise Control (ACC) is active and the driver is pressing the gas pedal. When this occurs, ACC will not brake. See Adaptive Cruise Control 224.

SERVICE ADAPTIVE CRUISE CONTROL

If this message displays, take the vehicle to your dealer to repair the system. Adaptive Cruise Control (ACC), Forward Collision Alert (FCA), and/or the Active Emergency Braking System may not work. Do not use these systems until the vehicle has been repaired.

SHIFT TO PARK BEFORE EXITING

This message may display if Adaptive Cruise Control (ACC) is engaged holding the vehicle at a stop, and the driver attempts to exit the vehicle. Put the vehicle in P (Park) before exiting.

Door Ajar Messages

DOOR OPEN

This message displays and a chime may sound if a door is not fully closed. Stop and turn off the vehicle, check the door for obstructions, and close the door again. Check to see if the message still appears on the DIC.

HOOD OPEN

This message displays and a chime may sound if the hood is not fully closed. Stop and turn off the vehicle, check the hood for obstructions, and close the hood again. Check to see if the message still appears on the DIC.
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REAR ACCESS OPEN
This message will display when the liftgate is open. Close the liftgate completely.

Engine Cooling System Messages

A/C OFF DUE TO HIGH ENGINE TEMP
This message displays when the engine coolant becomes hotter than the normal operating temperature. See Engine Coolant Temperature Gauge \( \diamond \) 124. To avoid added strain on a hot engine, the air conditioning compressor automatically turns off. When the coolant temperature returns to normal, the air conditioning compressor turns back on. You can continue to drive your vehicle.

If this message continues to appear, have the system repaired by your dealer as soon as possible to avoid damage to the engine.

ENGINE OVERHEATED IDLE ENGINE
This message displays when the engine coolant temperature is too hot. Stop and allow the vehicle to idle until it cools down. See Engine Coolant Temperature Gauge \( \diamond \) 124. When towing, use Tow/Haul Mode to prevent damage to the engine or transmission. See Tow/Haul Mode \( \diamond \) 212.

ENGINE OVERHEATED STOP ENGINE
This message displays and a chime may sound if the engine cooling system reaches unsafe temperatures for operation. Stop and turn off the vehicle as soon as it is safe to do so to avoid severe damage. This message clears when the engine has cooled to a safe operating temperature.

Engine Oil Messages

CHANGE ENGINE OIL SOON
This message displays when the engine oil needs to be changed. When you change the engine oil, be sure to reset the CHANGE ENGINE OIL SOON message. See Engine Oil Life System \( \diamond \) 267 for information on how to reset the message. See Engine Oil \( \diamond \) 265 and Maintenance Schedule \( \diamond \) 344.

ENGINE OIL LOW ADD OIL
On some vehicles, this message displays when the engine oil level may be too low. Check the oil level before filling to the recommended level. If the oil is not low and this message remains on, take the vehicle to your dealer for service. See Engine Oil \( \diamond \) 265.

ENGINE OIL HOT IDLE ENGINE
This message displays when the engine oil becomes hotter than the normal operating temperature. Stop
and allow the vehicle to idle until it
cools down. See Engine Coolant
Temperature Gauge ▷ 124.

**OIL PRESSURE LOW STOP
ENGINE**

This message displays if low oil
pressure levels occur. Stop the
vehicle as soon as safely possible
and do not operate it until the cause
of the low oil pressure has been
corrected. Check the oil as soon as
possible and have the vehicle
serviced by your dealer. See Engine
Oil ▷ 265.

**Engine Power Messages**

**ENGINE POWER IS REDUCED**

This message displays when the
cooling system temperature gets too hot and the
engine further enters the engine coolant protection mode. See Engine Overheating ▷ 273 for more information.

This message also displays when the
vehicle's engine power is
reduced. Reduced engine power
can affect the vehicle's ability to
accelerate. If this message is on,
but there is no reduction in
performance, proceed to your
destination. The performance may
be reduced the next time the vehicle
is driven. The vehicle may be driven
at a reduced speed while this
message is on, but acceleration and
speed may be reduced. Anytime
this message stays on, the vehicle
should be taken to your dealer for
service as soon as possible.

**Fuel System Messages**

**FUEL LEVEL LOW**

This message displays when the
vehicle is low on fuel. Refuel as
soon as possible.

**Key and Lock Messages**

**NO REMOTE KEY WAS
DETECTED PLACE KEY IN
TRANSMITTER POCKET THEN
START YOUR VEHICLE**

This message displays when trying
to start the vehicle if an RKE
transmitter is not detected. The
transmitter battery may be weak.

See “Starting the Vehicle with a Low
Transmitter Battery” under Remote
Keyless Entry (RKE) System
Operation ▷ 27.

**NO REMOTE DETECTED
PRESS BRAKE TO RESTART**

This message displays when
attempting to turn off the vehicle
and the RKE transmitter is no longer
detected. Restarting is allowed
without the RKE transmitter for
five minutes. Press the brake pedal
to restart the vehicle.

**NUMBER OF KEYS
PROGRAMMED**

This message displays when
programming new keys to the
vehicle.
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REMOTE LEFT IN VEHICLE
This message displays when leaving the vehicle with the RKE transmitter still inside.

REPLACE BATTERY IN REMOTE KEY
This message displays when the battery in the RKE transmitter needs to be replaced.

Lamp Messages

TURN SIGNAL ON
This message displays and a chime sounds if a turn signal is left on for 1.2 km (0.75 mi). Move the turn signal lever to the off position.

Object Detection System Messages

AUTOMATIC COLLISION PREP OFF
This message displays when the Front Automatic Braking (FAB) System has been turned off. See Front Automatic Braking (FAB) System  236.

AUTOMATIC COLLISION PREP REDUCED
This message displays when the Front Automatic Braking (FAB) System has been set to the Alert setting. This setting disables most FAB functions. Some last-second automatic braking capability is still provided with the Alert setting, but braking is less likely to occur. See Front Automatic Braking (FAB) System  236.

AUTOMATIC COLLISION PREP UNAVAILABLE
This message displays when the Front Automatic Braking (FAB) System has been unavailable for some time. The FAB System does not need service. This message can display under the following conditions:

- The front of the vehicle or windshield is not clean. Keep these areas clean and free of mud, dirt, snow, ice, and slush. For cleaning instructions, see Exterior Care  334.

- Heavy rain or snow is interfering with the object detection performance.

This message may also be displayed if there is a problem with the StabiliTrak system. See Traction Control/Electronic Stability Control  218.

FORWARD COLLISION ALERT OFF
This message displays when the Forward Collision Alert has been turned off.

FRONT CAMERA BLOCKED CLEAN WINDSHIELD
This message displays when the camera is blocked. Cleaning the outside of the windshield behind the rearview mirror may correct the issue. The Lane Keep Assist (LKA) and the Lane Departure Warning (LDW) system will not operate. Forward Collision Alert (FCA) and Front Automatic Braking (FAB) may not work or may not work as well.
LANE CHANGE ALERT OFF
This message indicates that the driver has turned the Side Blind Zone Alert (SBZA) and Lane Change Alert (LCA) systems off.

LANE KEEPING ASSIST UNAVAILABLE
This message displays when the Lane Keep Assist (LKA) and Lane Departure Warning (LDW) system is temporarily unavailable. The LKA system does not need service.

This message could be due to the camera being blocked. Clean the outside of the windshield behind the rearview mirror.

PARK ASSIST OFF
This message displays when the Parking Assist system has been turned off or when there is a temporary condition causing the system to be disabled.

SERVICE AUTOMATIC COLLISION PREP
If this message displays, take the vehicle to your dealer to repair the system. Adaptive Cruise Control (ACC), Forward Collision Alert (FCA), and/or the Front Automatic Braking (FAB) System may not work. Do not use these systems until the vehicle has been repaired.

SERVICE FRONT CAMERA
If this message remains on after continued driving, the vehicle needs service. Do not use the Lane Keep Assist (LKA), Lane Departure Warning (LDW), Front Automatic Braking (FAB), and Forward Collision Alert (FCA) features. Take the vehicle to your dealer.

SERVICE PARK ASSIST
This message displays if there is a problem with the Parking Assist system. Do not use this system to help you park. See your dealer for service.

SERVICE SIDE DETECTION SYSTEM
If this message remains on after continued driving, the vehicle needs service. Side Blind Zone Alert (SBZA), Lane Change Alert (LCA), and Rear Cross Traffic Alert (RCTA) features will not work. Take the vehicle to your dealer.

SIDE DETECTION SYSTEM UNAVAILABLE
This message indicates that Side Blind Zone Alert (SBZA), Lane Change Alert (LCA), and Rear Cross Traffic Alert (RCTA) are disabled either because the sensor is blocked and cannot detect vehicles in the blind zone, or the vehicle is passing through an open area, such as the desert, where there is insufficient data for operation. This message may also activate during heavy rain or due to road spray. The vehicle does not need service. For cleaning, see "Washing the Vehicle" under Exterior Care 334.
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Ride Control System Messages

SERVICE LEVELING SYSTEM
If the vehicle has the Magnetic Ride Control™ suspension system or Automatic Level Control, this message displays when the leveling system is not operating properly. Have the vehicle serviced by your dealer.

SERVICE STABILITRAK
If this message displays, it means there may be a problem with the StabiliTrak system. If you see this message, try to reset the system. Stop; turn off the engine for at least 15 seconds; then start the engine again. If this message still comes on, it means there is a problem. You should see your dealer for service. The vehicle is safe to drive; however, you do not have the benefit of StabiliTrak, so reduce your speed and drive accordingly.

SERVICE SUSPENSION SYSTEM
If the vehicle has the Magnetic Ride Control suspension system, this message displays when the suspension system is not operating properly. Have the vehicle serviced by your dealer.

SERVICE TRACTION CONTROL
This message displays when there is a problem with the Traction Control System (TCS). When this message displays, the system will not limit wheel spin. Adjust your driving accordingly. See your dealer for service. See Traction Control/Electronic Stability Control 218.

STABILITRAK INITIALIZING
This message may come on if the StabiliTrak system has not fully initialized because of road conditions or the incorrect tire size. When the StabiliTrak system is fully initialized, the message will turn off. See Traction Control/Electronic Stability Control 218.

TRACTION CONTROL OFF
This message displays when the traction control has been turned off. See Traction Control/Electronic Stability Control 218.

TRACTION CONTROL ON
This message displays when the traction control is active. See Traction Control/Electronic Stability Control 218.

STABILITRAK OFF
This message displays when the StabiliTrak system has been turned off. Adjust your driving accordingly. To limit wheel spin and realize the full benefits of the stability enhancement system, you should normally leave StabiliTrak on. See Traction Control/Electronic Stability Control 218.

for multiple ignition cycles and on different road surfaces, see your dealer for service.
STABILITRAK OFF may also display when the stability control has been automatically disabled. Several conditions can cause this message to appear:

- If the system is overheating, which could occur if StabiliTrak activates continuously for an extended period of time.
- If the brake system warning light is on. See Brake System Warning Light \( \Rightarrow 130 \).
- If the stability system takes longer than usual to complete its diagnostic checks due to driving conditions.
- If an engine or vehicle-related problem has been detected and the vehicle needs service. See your dealer.
- If the transfer case is in Four-Wheel Drive Low.

The message turns off as soon as the conditions that caused the message to be displayed are no longer present.

Airbag System Messages

SERVICE AIRBAG
This message displays if there is a problem with the airbag system. Take the vehicle to your dealer for service.

Security Messages

SERVICE THEFT DETERRENT SYSTEM
This message displays when there is a problem with the theft-deterrent system. The vehicle may or may not restart, so you may want to take the vehicle to your dealer before turning off the engine. See Immobilizer Operation \( \Rightarrow 43 \).

Steering System Messages

STEERING ASSIST IS REDUCED DRIVE WITH CARE
This message may display if a problem occurs with the electric power steering system. If this message appears, steering effort may be slightly higher than normal. The vehicle is still safe to drive. Use caution while in reduced assist mode. If this message is persistent or appears repeatedly, take the vehicle to your dealer for service. See Steering \( \Rightarrow 184 \).

SERVICE POWER STEERING
This message displays when there is a problem with electric power steering. If this message displays and a reduction in steering performance or loss of power steering assistance is noticed, see your dealer. See Steering \( \Rightarrow 184 \).

Starting the Vehicle Messages

PRESS BRAKE TO START
This message is displayed when attempting to start the vehicle without first pressing the brake pedal.
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SERVICE KEYLESS START SYSTEM
This message is displayed if there is a problem with the pushbutton start system. Take the vehicle to your dealer for service.

Tire Messages

SERVICE TIRE MONITOR SYSTEM
If equipped with the Tire Pressure Monitor System (TPMS), this message displays if a part on the system is not working properly. The tire pressure light also flashes and then remains on during the same ignition cycle. See Tire Pressure Light 134. Several conditions may cause this message to appear. See Tire Pressure Monitor Operation 306. If the warning comes on and stays on, there may be a problem with the TPMS. See your dealer.

TIRE LEARNING ACTIVE
If equipped with the Tire Pressure Monitor System (TPMS), this message displays when the system is relearning the tire positions on your vehicle. The tire positions must be relearned after rotating the tires or after replacing a tire or sensor. See Tire Inspection 309, Tire Rotation 309, Tire Pressure Monitor System 305, and Tire Pressure 303.

TIRE PRESSURE LOW ADD AIR TO TIRE
If equipped with the Tire Pressure Monitor System (TPMS), this message displays when the pressure in one or more of the vehicle's tires is low. This message also displays with a vehicle picture to indicate the location of the low tire. The low tire pressure warning light will also come on. See Tire Pressure Light 134. You can receive more than one tire pressure message at a time. If a tire pressure message appears on the DIC, stop as soon as you can. Have the tire pressures checked and set to those shown on the Tire and Loading Information label. See Tires 297, Vehicle Load Limits 194, and Tire Pressure 303. The DIC also shows the tire pressure values. See Driver Information Center (DIC) 137.

Transmission Messages

4WD OFF
If equipped with four-wheel drive, this message displays when the four-wheel-drive system is temporarily disabled due to an overheated condition. The vehicle will run in two-wheel drive when this message is present. Once the four-wheel-drive system cools down, the message turns off and the four-wheel-drive system returns to normal operation.

4WD SHIFT IN PROGRESS
This message will display while the four-wheel-drive system is shifting.

FOR 4WD LOW SHIFT TO NEUTRAL
If a four-wheel drive shift into 4 is requested, and the vehicle speed is correct, but the transmission is not
in N (Neutral), this message will display until the transmission is shifted to N (Neutral).

FOR 4WD LOW SLOW TO XXX
If a four-wheel drive shift into 4 ↓ is requested, but the vehicle speed is too high, this message will display until the correct vehicle speed is reached.

GRADE BRAKING ACTIVE
This message displays when grade braking has been activated while driving on downhill grades. This message will only appear the first time the feature is activated in an ignition cycle. See Tow/Haul Mode 212, Automatic Transmission 207, and Cruise Control 221.

GRADE BRAKING OFF
This message displays when grade braking has been disabled with the Tow/Haul Mode button on the end of the shift lever. See Tow/Haul Mode 212, Automatic Transmission 207, and Cruise Control 221.

GRADE BRAKING ON
This message displays when grade braking has been enabled with the Tow/Haul Mode button on the end of the shift lever. See Tow/Haul Mode 212, Automatic Transmission 207, and Cruise Control 221.

SHIFT DENIED
This message displays when the shift lever is in M (Manual Mode) and a transmission range has been selected that is unavailable at the current vehicle speed.

TO EXIT 4WD LOW SLOW TO NEUTRAL
If a four-wheel drive shift out of 4 ↓ is requested, and the vehicle speed is correct, but the transmission is not in N (Neutral), this message will display until the transmission is shifted to N (Neutral).

TO EXIT 4WD LOW SLOW TO XXX
If a four-wheel drive shift out of 4 ↓ is requested, but the vehicle speed is too high, this message will display until the correct vehicle speed is reached.

TRANSMISSION HOT IDLE ENGINE
This message displays and a chime may sound if the transmission fluid in the vehicle gets hot. Driving with
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the transmission fluid temperature high can cause damage to the vehicle. Stop the vehicle and let it idle to allow the transmission to cool. This message clears and the chime stops when the fluid temperature reaches a safe level.

When towing, use Tow/Haul Mode to prevent damage to the engine or transmission. See Tow/Haul Mode 212.

VEHICLE IN 4WD LOW
This message will display if the vehicle is driven in 4 for about 10 minutes above 72 km/h (45 mph).

Vehicle Reminder Messages

CHECK TRAILER WIRING
On vehicles with the Integrated Trailer Brake Control (ITBC) system, this message may display and a chime may sound when one of the following conditions exists:
- A trailer with electric brakes becomes disconnected from the vehicle.
- If the disconnect occurs while the vehicle is stopped, this message clears itself after a short time.
- If the disconnect occurs while the vehicle is moving, this message stays on until the ignition is turned off.
- There is a short in the wiring to the electric trailer brakes.

When this message displays, power is no longer available to the trailer brakes.

As soon as it is safe to do so, carefully pull the vehicle over to the side of the road and turn the ignition off. Check the wiring connection to the trailer and turn the ignition back on. This message clears if the trailer is reconnected. This message also clears if you acknowledge it. If this message still displays, either the vehicle or the trailer needs service. See your dealer.

See “Integrated Trailer Brake Control System” under Towing Equipment 251.

ICE POSSIBLE DRIVE WITH CARE
This message displays when ice conditions are possible.

TRAILER CONNECTED
On vehicles with the Integrated Trailer Brake Control (ITBC) system, this message displays briefly when a trailer with electric or electric over hydraulic brakes is first connected to the vehicle.

This message clears itself after several seconds. This message also clears if you acknowledge it. After this message clears, the TRAILER GAIN and OUTPUT displays appear in the DIC.

See Driver Information Center (DIC) 137 and “Integrated Trailer Brake Control System” under Towing Equipment 251.
WASHER FLUID LOW ADD FLUID
This message displays when the windshield washer fluid is low. Fill the windshield washer fluid reservoir as soon as possible. See Engine Compartment Overview 264 for the location of the windshield washer fluid reservoir. Also, see Washer Fluid 275 for more information.

Vehicle Personalization
Use the audio system controls to access the personalization menus for customizing vehicle features.

The following are all possible personalization features. Depending on the vehicle, some may not be available.

Radio Audio System Controls
1. Press the desired feature to display a list of available options.
2. Press to select the desired feature setting.
3. Press BACK on the faceplate or the screen button to return to the previous menu or exit.

Turn the vehicle to ON/RUN to access the Settings menu, then select SETTINGS from the Home Page on the infotainment system display.

Personalization Menus
The following list of menu items may be available:
- Time and Date
- Language (Language)
- Valet Mode
- Radio
- Vehicle
- Bluetooth
- Voice
- Display
- Rear Camera
- Return to Factory Settings
- Software Information

Detailed information for each menu follows.

Time and Date
Manually set the time and date. See Clock 115.

Language (Language)
Select Language, then select from the available language(s).
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The selected language will display on the system, and voice recognition (if equipped) will reflect the selected language.

Valet Mode (If Equipped)
This will lock the infotainment system and steering wheel controls. It may also limit access to vehicle storage locations (if equipped).

To enable valet mode:

1. Enter a four-digit code on the keypad.
2. Select Enter to go to the confirmation screen.
3. Re-enter the four-digit code.

Press LOCK or UNLOCK to lock or unlock the system. Press Back to go back to the previous menu.

Radio
Press to display the Radio menu and the following may display:
• Manage Favorites
• Number of Favorites Shown
• Audible Touch Feedback
• Bose AudioPilot

• Auto Volume
• Maximum Startup Volume
• Audio Cue Volume

Manage Favorites
This allows favorites to be edited. See "Manage Favorites" in “Settings” under “Radio” in the infotainment manual.

Number of Favorites Shown
Press to set the number of favorites to display.
Select the desired number or select Auto and the infotainment system will automatically adjust the number of favorites shown.

Audible Touch Feedback
This allows Audible Touch Feedback to be turned on or off.
Select Off or On.

Bose AudioPilot
This allows Bose AudioPilot to be turned on or off.
Select Off or On.

Auto Volume
This feature adjusts the volume based on vehicle speed and ambient noise.
Select Off, Low, Medium-Low, Medium, Medium-High, or High.

Maximum Startup Volume
This feature sets the maximum startup volume. If the vehicle is started and the volume is greater than this level, the volume is adjusted to this level. To set the maximum startup volume, press + or − to increase or decrease.

Audio Cue Volume
This feature sets the volume of audio files played at system startup and shutdown.
Select On, then press + or − to increase or decrease the volume.

Vehicle
Select and the following may display:
• Climate and Air Quality
• Collision/Detection Systems
Comfort and Convenience
Lighting
Power Door Locks
Remote Lock, Unlock, Start

Climate and Air Quality
Select the Climate and Air Quality menu and the following may display:
- Auto Fan Max Speed
- Auto Defog
- Auto Rear Defog

Auto Fan Max Speed
This feature will set the maximum auto fan speed.
Select Low, Medium, or High.

Auto Defog
When set to On, the front defog will automatically come on when the vehicle is started.
Select Off or On.

Auto Rear Defog
If equipped, this feature will automatically turn on the rear window defogger when it is cold outside.
Select Off or On.

Collision/Detection Systems
Select the Collision/Detection Systems menu and the following may display:
- Alert Type
- Auto Collision Preparation
- Go Notifier
- Park Assist
- Side Blind Zone Alert
- Rear Cross Traffic Alert

Alert Type
This feature will set crash alerts to beeps or seat vibrations. This setting affects all crash alerts including Forward Collision Alert, Lane Departure Warning, and Park Assist alerts.
Select Beeps or Safety Alert Seat.

Auto Collision Preparation
This feature will turn on or off the Forward Collision Alert (FCA) and Front Automatic Braking (FAB). The Off setting disables all FCA and FAB functions. With the Alert and Brake setting, both FCA and FAB are available. The Alert setting disables FAB, but some last-second automatic braking capability is still provided, though less likely to occur. See Front Automatic Braking (FAB) System 236.
Select Off, Alert and Brake, or Alert.

Go Notifier
This feature will give a reminder that Adaptive Cruise Control provides when it has brought the vehicle to a complete stop behind another stopping vehicle, and then that vehicle drives on.
Select Off or On.

Park Assist
This allows the feature to be turned on or off. See Assistance Systems for Parking or Backing 231.
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**Side Blind Zone Alert**
This allows the feature to be turned on or off. See *Side Blind Zone Alert (SBZA)* \(\rightarrow 238\).
Select Off or On.

**Rear Cross Traffic Alert**
This allows the feature to be turned on or off. See *Assistance Systems for Parking or Backing* \(\rightarrow 231\).
Select Off or On.

**Comfort and Convenience**
Select the Comfort and Convenience menu and the following may display:
- Auto Memory Recall
- Easy Exit Options
- Chime Volume
- Reverse Tilt Mirror
- Auto Mirror Folding
- Auto Wipe in Reverse Gear

**Auto Memory Recall**
This allows the feature to be turned on or off. See *Memory Seats* \(\rightarrow 55\).
Select On or Off.

**Easy Exit Options**
This allows the feature to be turned on or off. See *Memory Seats* \(\rightarrow 55\).
Select On or Off.

**Chime Volume**
This allows the selection of the chime volume level.
Press + or − to adjust the volume.

**Reverse Tilt Mirror**
When on, the driver and/or passenger mirrors will tilt downward when the vehicle is shifted to R (Reverse) to improve visibility of the ground near the rear wheels.
Select Off, On - Driver and Passenger, On - Driver, or On - Passenger.

**Auto Mirror Folding**
When on, the outside rearview mirrors will automatically fold or unfold when the Remote Keyless Entry (RKE) transmitter \(\mathbf{Q}\) or \(\mathbf{K}\) button is pressed and held.
Select Off or On.

**Auto Wipe in Reverse Gear**
When on and the front wiper is on and wiping, the rear wiper will automatically activate when the vehicle is shifted to R (Reverse).
Select Off or On.

**Lighting**
Select the Lighting menu and the following may display:
- Vehicle Locator Lights
- Exit Lighting

**Vehicle Locator Lights**
This feature will flash the exterior lamps and allows some of the exterior lamps and most of the interior lamps to turn on briefly when
**Kon the Remote Keyless Entry (RKE) transmitter is pressed to locate the vehicle.**
Select On or Off.

**Exit Lighting**
This allows the selection of how long the exterior lamps stay on when leaving the vehicle when it is dark outside.
Select Off, 30 Seconds, 60 Seconds, or 120 Seconds.

**Power Door Locks**
Select Power Door Locks and the following may display:
- Unlocked Door Anti-Lockout
- Auto Door Unlock
- Delayed Door Lock

**Unlocked Door Anti-Lockout**
When on, this feature will keep the driver door from locking when the door is open and the key is in the ignition. If Off is selected, the Delayed Door Lock menu will be available.
Select On or Off.

**Auto Door Unlock**
This allows selection of which of the doors will automatically unlock when the vehicle is shifted into P (Park).
Select Off, All Doors, or Driver Door.

**Delayed Door Lock**
When on, this feature will delay the locking of the doors. To override the delay, press the power door lock switch on the door.
Select On or Off.

**Remote Lock, Unlock, Start**
Select Remote Lock, Unlock, Start and the following may display:
- Remote Unlock Light Feedback
- Remote Lock Feedback
- Remote Door Unlock
- Remote Start Auto Cool Seats
- Remote Start Auto Heat Seats
- Passive Door Unlock
- Passive Door Lock
- Remote Left in Vehicle Alert

**Remote Unlock Light Feedback**
When on, the exterior lamps will flash when unlocking the vehicle with the RKE transmitter.
Select Off or Flash Lights.

**Remote Lock Feedback**
This allows selection of what type of feedback is given when locking the vehicle with the RKE transmitter.
Select Off, Lights and Horn, Lights Only, or Horn Only.

**Remote Door Unlock**
This allows selection of which doors will unlock when pressing on the RKE transmitter.
Select All Doors or Driver Door.

**Remote Start Auto Cool Seats**
If equipped and turned on, this feature will turn the cooled seats on when using remote start on warm days.
Select Off or On.
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Remote Start Auto Heat Seats
If equipped and turned on, this feature will turn the heated seats on when using remote start on cold days.
Select Off or On.

Passive Door Unlock
This allows the selection of what doors will unlock when using the button on the driver door to unlock the vehicle.
Select All Doors or Driver Door.

Passive Door Lock
This allows passive locking to be turned on or off and selects feedback. See Remote Keyless Entry (RKE) System Operation 27.
Select Off, On with Horn Chirp, or On.

Remote Left in Vehicle Alert
This feature sounds an alert when the RKE transmitter is left in the vehicle.
Select Off or On.

Bluetooth
Select and the following may display:
- Pair New Device
- Device Management
- Ringtones
- Voice Mail Numbers

Pair New Device
Select to pair a new device. See “Pairing” in “Infotainment Controls” under “Bluetooth” in the infotainment manual.

Device Management
Select to connect to a different phone source, disconnect a phone, or delete a phone.

Ringtones
Press to change the ring tone for the specific phone. The phone does not need to be connected to change the ring tone.

Voice Mail Numbers
This feature displays the voice mail number for all connected phones. To change the voice mail number, select EDIT or press the EDIT button. Type a new number, then select SAVE or press the SAVE button.

Voice
Select and the following may display:
- Prompt Length
- Audio Feedback Speed

Prompt Length
This feature adjusts the voice prompt length.
Select Short or Long.

Audio Feedback Speed
This feature adjusts the audio feedback speed.
Select Slow, Medium, or Fast.
Display
Select and the following may display:
• Mode
• Calibrate Touchscreen
• Turn Display Off

Mode
Select to change the display of the infotainment system.
Select Auto, Day, or Night.

Calibrate Touchscreen
Select to calibrate the touchscreen, then follow the prompts.

Turn Display Off
Select to turn the display off. Press anywhere on the display area or any faceplate button to turn the display on.

Rear Camera
Select and the following may display:
• Guidance Lines
• Rear Cross Traffic Alert

• Rear Park Assist Symbols

Guidance Lines
Select to turn Off or On. See Assistance Systems for Parking or Backing \( \Rightarrow 231 \).

Rear Cross Traffic Alert
Select to turn Off or On.

Rear Park Assist Symbols
Select to turn Off or On. See Assistance Systems for Parking or Backing \( \Rightarrow 231 \).

Return to Factory Settings
Select and the following may display:
• Restore Vehicle Settings
• Clear All Private Data
• Restore Radio Settings

Restore Vehicle Settings
This allows selection of restoring vehicle settings.
Select Restore or Cancel.

Clear All Private Data
This allows selection to clear all private information from the vehicle.
Select Delete or Cancel.

Restore Radio Settings
This allows selection to restore radio settings.
Select Restore or Cancel.

Software Information
Select to view the infotainment system current software information.
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Universal Remote System
See Radio Frequency Statement \( \diamondsuit \) 370.

Universal Remote System Programming

If equipped, these buttons are in the overhead console.

This system can replace up to three remote control transmitters used to activate devices such as garage door openers, security systems, and home automation devices. These instructions refer to a garage door opener, but can be used for other devices.

Do not use the Universal Remote system with any garage door opener that does not have the stop and reverse feature. This includes any garage door opener model manufactured before April 1, 1982.

Read the instructions completely before programming the Universal Remote system. It may help to have another person assist with the programming process.

Keep the original hand-held transmitter for use in other vehicles as well as for future programming.

Erase the programming when vehicle ownership is terminated. See “Erasing Universal Remote System Buttons” later in this section.

To program a garage door opener, park outside directly in line with and facing the garage door opener receiver. Clear all people and objects near the garage door.

Make sure the hand-held transmitter has a new battery for quick and accurate transmission of the radio-frequency signal.

Programming the Universal Remote System

For questions or help programming the Universal Remote system, call 1-800-355-3515 or see www.homelink.com.

Programming involves time-sensitive actions, and may time out causing the procedure to be repeated.

To program up to three devices:

1. Hold the end of the hand-held transmitter about 3 to 8 cm (1 to 3 in) away from the Universal Remote system buttons with the indicator light in view. The hand-held transmitter was supplied by the manufacturer of the garage door opener receiver.

2. At the same time, press and hold both the hand-held transmitter button and one of the three Universal Remote
system buttons to be used to operate the garage door. Do not release either button until the indicator light goes from a slow to a rapid flashing light. Then release both buttons.

Some garage door openers may require substitution of Step 2 with the procedure under “Radio Signals for Canada and Some Gate Operators” later in this section.

3. Press and hold the newly programmed Universal Remote system button for five seconds while watching the indicator light and garage door activation.

- If the indicator light stays on continuously or the garage door moves when the button is pressed, then programming is complete. There is no need to complete Steps 4–6.
- If the indicator light does not come on or the garage door does not move, a second button press may be required. For a second time, press and hold the newly programmed button for five seconds. If the light stays on or the garage door moves, programming is complete.
  - If the indicator light blinks rapidly for two seconds, then changes to a solid light and the garage door does not move, continue with programming Steps 4–6.

4. After completing Steps 1–3, locate the Learn or Smart button inside the garage on the garage door opener receiver.

Learn or Smart Button

5. Press and release the Learn or Smart button. Step 6 must be completed within 30 seconds of pressing this button.

6. Inside the vehicle, press and hold the newly programmed Universal Remote system button for two seconds and then release it. If the garage door does not move or the lamp on the garage door opener receiver does not flash, press and hold the same button a second time for two seconds, then release it. Again, if the door does not move or the garage door lamp does not flash, press and hold the same button a third time for two seconds, then release it.

The Universal Remote system should now activate the garage door.

Repeat the process for programming the two remaining buttons.
Radio Signals for Canada and Some Gate Operators

For questions or programming help, call 1-800-355-3515 or see www.homelink.com.

Canadian radio-frequency laws and some U.S. gate operators require transmitter signals to time out or quit after several seconds of transmission. This may not be long enough for the Universal Remote system to pick up the signal during programming.

If the programming did not work, replace Step 2 under “Programming the Universal Remote System” with the following:

Press and hold the Universal Remote system button while pressing and releasing the hand-held transmitter button every two seconds until the signal has been successfully accepted by the Universal Remote system. The Universal Remote system indicator light will flash slowly at first and then rapidly. Proceed with Step 3 under “Programming the Universal Remote System” to complete.

Universal Remote System Operation

Using the Universal Remote System

Press and hold the appropriate Universal Remote system button for at least one-half second. The indicator light will come on while the signal is being transmitted.

Erasing Universal Remote System Buttons

Erase all programmed buttons when vehicle ownership is terminated.

To erase:

1. Press and hold the two outside buttons until the indicator light begins to flash. This should take about 10 seconds.
2. Release both buttons.

Reprogramming a Single Universal Remote System Button

To reprogram any of the system buttons:

1. Press and hold any one of the buttons. Do not release the button.
2. The indicator light will begin to flash after 20 seconds. Without releasing the button, proceed with Step 1 under “Programming the Universal Remote System.”
Lighting

Exterior Lighting

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Exterior Lighting

Exterior Lamp Controls

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

There are four positions:

- **(Off)**: Turns off the automatic headlamps and Daytime Running Lamps (DRL). Turn the headlamp control to the off position again to turn the automatic headlamps or DRL back on.

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

**AUTO (Automatic)**: Automatically turns on the headlamps, parking lamps, taillamps, instrument panel lights, roof marker lamps (if equipped), and license plate lamps.

When the vehicle is turned off and the headlamps are in AUTO, the headlamps turn off. When the key is removed, the headlamps automatically come on for a set time. The time of the delay can be changed using the DIC. See Driver Information Center (DIC) ° 137.

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

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

When the headlamps are turned on while the vehicle is on, the headlamps turn off automatically 10 minutes after the ignition is turned off. When the headlamps are turned on while the vehicle is off,
166 Lighting

the headlamps will stay on for 10 minutes before turning off to prevent the battery from being drained. Turn the headlamp control off and then back to the headlamp on position to make the headlamps stay on for an additional 10 minutes.

To keep the lamps on for more than 10 minutes, the ignition must be in the ACC/ACCESSORY or ON/RUN position.

Exterior Lamps Off Reminder
A reminder chime sounds when the headlamps or parking lamps are manually turned on, the ignition is off, and a door is open. To disable the chime, turn the lamps off.

Headlamp High/ Low-Beam Changer

(Headlamp High/Low-Beam Changer): Push the turn signal lever toward the instrument panel to change the headlamps from low to high beam.

Pull the turn signal lever toward you and release it to return to low-beam headlamps.

When the high-beam headlamps are on, this indicator light on the instrument cluster will also be on.

Flash-to-Pass
This feature lets you use the high-beam headlamps to signal a driver in front of you that you want to pass. It works even if the headlamps are in the automatic position.

To use it, pull the turn signal lever toward you, then release it.

If the headlamps are in the automatic position or on low beam, the high-beam headlamps will turn on. They will stay on as long as you hold the lever toward you. The high-beam indicator on the instrument cluster will come on. Release the lever to return to normal operation.

Daytime Running Lamps (DRL)
DRL can make it easier for others to see the front of the vehicle during the day. Fully functional DRL are required on all vehicles first sold in Canada.

The DRL system comes on when the following conditions are met:

- The ignition is on.
- The exterior lamp control is in AUTO.
- The transmission is not in P (Park).
- The light sensor determines it is daytime.

When the DRL system is on, only the DRL are on. The taillamps, sidemarker lamps, instrument panel lights, and other lamps will not be on.
When it begins to get dark, the automatic headlamp system switches from DRL to the headlamps.

To turn off the DRL, turn the exterior lamp control to the off position and then release. For vehicles first sold in Canada, off will only work when the vehicle is in P (Park).

**Automatic Headlamp System**

When the exterior lamp control is set to AUTO and it is dark enough outside, the headlamps come on automatically.

There is a light sensor on top of the instrument panel. Do not cover the sensor, 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 headlamp system changes to the DRL. During that delay, the instrument cluster may not be as bright as usual. Make sure the instrument panel brightness control is in the full bright position. See Instrument Panel Illumination Control  169.

When it is bright enough outside, the headlamps will turn off or may change to Daytime Running Lamps (DRL).

The automatic headlamp system turns off when the exterior lamp control is turned to  or the ignition is off.

**Lights On with Wipers**

If the windshield wipers are activated in daylight with the engine on, and the exterior lamp control is in AUTO, the headlamps, parking lamps, and other exterior lamps come on. The transition time for the lamps coming on varies based on wiper speed. When the wipers are not operating, these lamps turn off. Move the exterior lamp control to  or  to disable this feature.
Hazard Warning Flashers

Press this button to make the front and rear turn signal lamps flash on and off. Press again to turn the flashers off.

When the hazard warning flashers are on, the vehicle's turn signals will not work.

⚠️ (Hazard Warning Flashers) : Press this button to make the front and rear turn signal lamps flash on and off. Press again to turn the flashers off.

Turn and Lane-Change Signals

An arrow on the instrument cluster flashes in the direction of the turn or lane change.

Move the turn signal lever all the way up or down to signal a turn.

Raise or lower the lever for less than one second until the arrow starts to flash to signal a lane change. This causes the turn signals to automatically flash three times. It will flash six times if Tow/Haul Mode is active. Holding the turn signal lever for more than one second will cause the turn signals to flash until the lever is released.

The lever returns to its starting position whenever it is released.

If after signaling a turn or a lane change the arrows flash rapidly or do not come on, a signal bulb could be burned out.

Replace any burned out bulbs. If a bulb is not burned out, check the fuse. See Fuses § 287.

Turn Signal On Chime

If the turn signal is left on for more than 1.2 km (0.75 mi), a chime sounds at each flash of the turn signal. The message TURN SIGNAL ON will also appear in the Driver Information Center (DIC). To turn the chime and message off, move the turn signal lever to the off position.
Fog Lamps

If equipped with fog lamps, the button is on the exterior lamp control, to the left of the steering column.

The ignition must be in the ON/RUN position for the fog lamps to come on.

(Fog Lamps) : Press to turn the fog lamps on or off. A light will come on in the instrument cluster.

When the fog lamps are turned on, the parking lamps automatically turn on.

When the headlamps are changed to high beam, the fog lamps also go off. When the high-beam headlamps are turned off, the fog lamps will come on again.

Some localities have laws that require the headlamps to be on with the fog lamps.

Interior Lighting

Instrument Panel Illumination Control

This feature controls the brightness of the instrument panel lights and is next to the exterior lamp control.

(Instrument Panel Illumination) : Move the thumbwheel up or down to brighten or dim the lights.
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Dome Lamps

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

To change the dome lamp settings, press the following:

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

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

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

Reading Lamps

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

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

Entry Lighting
Some exterior lamps and the interior lamps turn on briefly at night, or in areas with limited lighting, when is pressed on the Remote Keyless Entry (RKE) transmitter. When a door is opened, the interior lamps come on if the dome lamp control is in the DOOR position. After about 30 seconds the exterior lamps turn off. Entry lighting can be disabled manually by changing the ignition out of the OFF position, or by pressing the RKE transmitter button.

This feature can be changed. See “Vehicle Locator Lights” under Vehicle Personalization 155.

Exit Lighting
Some exterior lamps and interior lamps come on at night, or in areas with limited lighting, when the driver door is opened after the ignition is turned off. The exterior lamps and interior lamps remain on for a set amount of time, then automatically turn off.

The exterior lamps turn off immediately by turning the exterior lamp control off.

This feature can be changed. See Vehicle Personalization 155.

Battery Load Management
The vehicle has Electric Power Management (EPM), which estimates the battery's temperature and state of charge. It then adjusts the voltage for best performance and extended life of the battery.

When the battery's state of charge is low, the voltage is raised slightly to quickly bring the charge back up. When the state of charge is high, the voltage is lowered slightly to prevent overcharging. The voltmeter gauge or the voltage display on the Driver Information Center (DIC), if equipped, may show the voltage moving up or down. This is normal.

If there is a problem, an alert will be displayed.

The battery can be discharged at idle if the electrical loads are very high. This is true for all vehicles. This is because the generator (alternator) may not be spinning fast enough at idle to produce all the power that is needed for very high electrical loads.

A high electrical load occurs when several of the following are on, such as: headlamps, high beams, fog lamps, rear window defogger, climate control fan at high speed, heated seats, engine cooling fans, trailer loads, and loads plugged into accessory power outlets.

EPM works to prevent excessive discharge of the battery. It does this by balancing the generator's output and the vehicle's electrical needs. It can increase engine idle speed to generate more power, whenever needed. It can temporarily reduce the power demands of some accessories.
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Normally, these actions occur in steps or levels, without being noticeable. In rare cases at the highest levels of corrective action, this action may be noticeable to the driver. If so, a DIC message might be displayed and it is recommended that the driver reduce the electrical loads as much as possible. See Battery Voltage and Charging Messages 143.

Battery Power Protection

This feature shuts off the dome and reading lamps if they are left on for more than 10 minutes when the ignition is off. This will keep the battery from running down.
Infotainment System

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.
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Climate Control Systems

Dual Automatic Climate Control System
With this system the heating, cooling, and ventilation in the vehicle can be controlled. Some climate control settings can be changed. See "Climate and Air Quality" under Vehicle Personalization 155.

1. Driver Temperature Control
2. A/C (Air Conditioning)
3. Air Delivery Mode Controls
4. Fan Control
5. Defrost
6. Passenger Temperature Control
7. SYNC (Synchronized Temperature)
8. Rear Window Defogger
9. RCTRL (Rear Climate Control Lockout)
10. Rear Temperature Control
11. Rear Air Delivery Mode Control
12. Rear Fan Control
13. Front Climate Control Power Button
14. Rear AUTO (Automatic Operation)
15. Rear Climate Control Power Button
16. Air Recirculation
17. AUTO (Automatic Operation)
Front Climate Controls

Automatic Operation

The system automatically controls the fan speed, air delivery, air conditioning, and recirculation in order to heat or cool the vehicle to the desired temperature.

When the indicator light is on, the system is in full automatic operation. If the air delivery mode or fan setting is manually adjusted, the auto indicator turns off and the selected settings are displayed.

To place the system in automatic mode:

1. Press AUTO.
2. Set the driver and passenger temperature.

   To find your comfort setting, start with 22 °C (72 °F) and allow the system time to stabilize. Then adjust the temperature as needed for best comfort.

To improve fuel efficiency and to cool the vehicle faster, recirculation may be automatically selected in warm weather.

The recirculation light will not come on when automatically controlled.

Press \( \text{REC} \) to manually select recirculation; press it again to select outside air.

Do not cover the solar sensor on the top of the instrument panel near the windshield. This sensor regulates air temperature based on sun load. See “Sensors” later in this section.

Manual Operation

\( \text{On/Off} \) : Press to turn the climate control system on or off. Outside air still enters the vehicle, and is directed to the floor. This direction can be changed by pressing the air delivery mode.

\( \text{Fan Control} \) : Turn clockwise or counterclockwise to increase or decrease the fan speed.

Press AUTO to return to automatic operation.

Driver and Passenger Temperature Control : The temperature can be adjusted separately for the driver and passenger.

Turn the knob clockwise or counterclockwise to increase or decrease the driver or passenger temperature setting.

SYNC (Synchronized Temperature) : Press to link the passenger and rear climate temperature settings to the driver setting. The SYNC indicator light will turn on. When the passenger or rear climate settings are adjusted, the SYNC indicator light turns off.

Air Delivery Mode Control :

Press \( \text{REC} \), \( \text{DIR} \), \( \text{FLO} \), or \( \text{FOOT} \) to change the direction of the airflow. An indicator light comes on in the selected mode button.

Changing the mode cancels the automatic operation and the system goes into manual mode. Press AUTO to return to automatic operation.
176 Climate Controls

علامت (Vent) : Air is directed to the instrument panel outlets.

علامت (Bi-Level) : Air is divided between the instrument panel and floor outlets.

علامت (Floor) : Air is directed to the floor outlets, with some to the windshield, side window outlets, and second row floor outlets.

علامت (Defog) : This mode clears the windows of fog or moisture. Air is directed to the windshield, floor outlets, and side window vents.

علامت (Defrost) : Press to clear the windshield of fog or frost more quickly. Air is directed to the windshield and the side window vents. The system automatically forces outside air into the vehicle and the air conditioning compressor will run, unless the outside temperature is close to freezing.

Do not drive the vehicle until all windows are clear.

See Air Vents 179.

A/C (Air Conditioning) : Press to turn the air conditioning system on or off. An indicator light comes on to show that the air conditioning is enabled. If the fan is turned off, the air conditioner will not run. The A/C light will stay on even if the outside temperatures are below freezing.

(*) (Recirculation) : Press to turn on recirculation. An indicator light comes on. Air is recirculated to quickly cool the inside of the vehicle. It can also be used to help reduce outside air and odors that enter the vehicle. The air conditioning compressor also comes on when this mode is activated.

Auto Defog : The climate control system may have a sensor to automatically detect high humidity inside the vehicle. When high humidity is detected, the climate control system may adjust to outside air supply and turn on the air conditioner. If the climate control system does not detect possible window fogging, it returns to normal operation. To turn Auto Defog off or on, see “Climate and Air Quality” under Vehicle Personalization 155.

Rear Window Defogger

The rear window defogger uses a warming grid to remove fog from the rear window. The rear window defogger only works when the ignition is in ON/RUN. The defogger turns off if the ignition is turned to ACC/ACCESSORY or LOCK/OFF.

Caution

Using a razor blade or sharp object to clear the inside rear window can damage the rear window defogger. Repairs would not be covered by the vehicle warranty. Do not clear the inside rear window with sharp objects.
Heated Mirror: If equipped with heated outside rearview mirrors, the mirrors heat to help clear fog or frost from the surface of the mirror when the rear window defog button is pressed. See Heated Mirrors 45.

Rear Climate Controls

(On/Off): Press to turn the rear climate control system on or off.

AUTO: Press AUTO to control the rear passenger temperature, air delivery, and fan speed. AUTO appears in the display when automatic operation is active. If any of the climate control settings except rear temperature are manually adjusted, this cancels full automatic operation.

Fan Control: Press up or down to increase or decrease the rear passenger area fan speed.

Air Delivery Mode Control: Press up or down to change the direction of the rear passenger airflow. Repeatedly press the switch until the desired mode appears on the display. Multiple presses will cycle through the delivery selections.

Temperature Control: Press up or down to increase or decrease the airflow temperature into the rear passenger area.

RCTRL (Rear Climate Control Lockout): Press to lock or unlock control of the rear climate control system from the rear seat passengers. When locked, the rear climate control can only be adjusted from the front seat.

Remote Start Climate Control Operation

If equipped with the remote start feature, the climate control system will come on when the vehicle is started remotely, depending on the outside temperature. The rear window defogger and heated seats, if equipped, may also come on. See Remote Vehicle Start 33 and Heated and Cooled Front Seats 57.

Sensors

The solar sensor monitors the solar heat. Do not cover the solar sensor or the system will not work properly.

There is also an exterior temperature sensor behind the front grille. This sensor reads the outside air temperature and helps maintain the temperature inside the vehicle. Any cover on the front of the vehicle, including a snowplow, could cause a false reading in the displayed temperature.

The climate control system uses the information from these sensors to maintain comfort settings by adjusting the outlet temperature, fan speed, and air delivery mode. The system may also supply cooler air to
178 **Climate Controls**

The rear climate control system is located on the rear of the center console storage. The rear climate settings can be adjusted with this system.

1. **Fan Control**
2. **AUTO (Automatic Operation)**
3. **MODE (Air Delivery Mode Control)**
4. **TEMP (Temperature Control)**
5. **Heated Rear Seats (If Equipped)**

If the dual automatic climate control system rear climate control lockout feature is locked, the rear climate control settings can only be adjusted from the front seat.

**Automatic Operation**

**AUTO**: Press AUTO to control the inside temperature, air delivery, and fan speed. A is indicated in the display when automatic operation is active. If any of the climate control settings are manually adjusted, this cancels full automatic operation.

The display only indicates climate control functions when the system is in rear independent mode.

**Manual Operation**

** оборот** (Fan Control): Turn clockwise or counterclockwise to increase or decrease the fan speed. Turn completely counterclockwise to turn the fan/power off.

**TEMP (Temperature Control)**: Turn clockwise or counterclockwise to increase or decrease the airflow temperature into the passenger area. If the SYNC button is pressed on the front climate controls, the rear climate temperature is linked to the driver temperature setting.

**MODE (Air Delivery Mode Control)**: Press to change the direction of the airflow in the vehicle. Repeatedly press the button until the desired mode appears on the display. Multiple presses will cycle through the delivery selections.

** or ** (Heated Rear Seats, If Equipped): Press or to heat the left or right outboard seat cushion. See Heated Rear Seats 58.
Air Vents
Adjustable air vents are in the center and on the side of the instrument panel.

1. Slider Knob
2. Thumbwheel

Move the slider knobs (1) to change the direction of the airflow.
Use the thumbwheels (2) near the air vents to open or close off the airflow.

Operation Tips
- Clear away any ice, snow, or leaves from the air inlets at the base of the windshield that could block the flow of air into the vehicle.
- When you enter a vehicle in cold weather, press the fan up button to the maximum fan level before driving. This helps clear the intake ducts of snow and moisture, and reduces the chance of fogging the inside of the window.
- Keep the air path under the front seats clear of objects to help circulate the air inside of the vehicle more effectively.
- Use of non-GM approved hood deflectors can adversely affect the performance of the system. Check with your dealer before adding equipment to the outside of the vehicle.

Maintenance
Passenger Compartment Air Filter
The filter reduces the dust, pollen, and other airborne irritants from outside air that is pulled into the vehicle.

The filter should be replaced as part of routine scheduled maintenance. See Maintenance Schedule \( \Rightarrow 344 \).
To find out what type of filter to use, see Maintenance Replacement Parts \( \Rightarrow 354 \).

1. Open the glove box completely.
2. Disconnect the glove box door damper string from the glove box door assembly. A pen or pencil may be inserted through the end of the damper string to prevent the string from slipping inside the door assembly.

3. Remove the six screws and remove the access plate.

4. Release the two tabs holding the service door. Open the service door and remove the old filter.

5. Install the new air filter.

6. Close the service door and secure the tabs.

7. Reverse the steps to reinstall the glove box.

See your dealer if additional assistance is needed.

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**Service**

All vehicles have a label underhood that identifies the refrigerant used in the vehicle. The refrigerant system should only be serviced by trained and certified technicians. The air conditioning evaporator should never be repaired or replaced by one from a salvage vehicle. It should only be replaced by a new evaporator to ensure proper and safe operation.

During service, all refrigerants should be reclaimed with proper equipment. Venting refrigerants directly to the atmosphere is harmful to the environment and may also create unsafe conditions based on inhalation, combustion, frostbite, or other health-based concerns.
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Driving Information

Distracted Driving
Distraction comes in many forms and can take your focus from the task of driving. Exercise good judgment and do not let other activities divert your attention away from the road. Many local governments have enacted laws regarding driver distraction. Become familiar with the local laws in your area.

To avoid distracted driving, always keep your eyes on the road, hands on the wheel, and mind on the drive.

- Do not use a phone in demanding driving situations. Use a hands-free method to place or receive necessary phone calls.
- Watch the road. Do not read, take notes, or look up information on phones or other electronic devices.
- Designate a front seat passenger to handle potential distractions.

- Become familiar with vehicle features before driving, such as programming favorite radio stations and adjusting climate control and seat settings. Program all trip information into any navigation device prior to driving.
- Wait until the vehicle is parked to retrieve items that have fallen to the floor.
- Stop or park the vehicle to tend to children.
- Keep pets in an appropriate carrier or restraint.
- Avoid stressful conversations while driving, whether with a passenger or on a cell phone.

⚠️ Warning

Taking your eyes off the road too long or too often could cause a crash resulting in injury or death. Focus your attention on driving.
Refer to the infotainment manual for more information on using that system, including pairing and using a cell phone.

**Defensive Driving**

Defensive driving means “always expect the unexpected.” The first step in driving defensively is to wear the safety belt. See Safety Belts 65.

- Assume that other road users (pedestrians, bicyclists, and other drivers) are going to be careless and make mistakes. Anticipate what they might do and be ready.
- Allow enough following distance between you and the driver in front of you.
- Focus on the task of driving.

**Drunk Driving**

Death and injury associated with drinking and driving is a global tragedy.

**Warning**

Drinking and then driving is very dangerous. Your reflexes, perceptions, attentiveness, and judgment can be affected by even a small amount of alcohol. You can have a serious — or even fatal — collision if you drive after drinking.

Do not drink and drive or ride with a driver who has been drinking. Ride home in a cab; or if you are with a group, designate a driver who will not drink.

**Control of a Vehicle**

Braking, steering, and accelerating are important factors in helping to control a vehicle while driving.

**Braking**

Braking action involves perception time and reaction time. Deciding to push the brake pedal is perception time. Actually doing it is reaction time.

Average driver reaction time is about three-quarters of a second. In that time, a vehicle moving at 100 km/h (60 mph) travels 20 m (66 ft), which could be a lot of distance in an emergency.

Helpful braking tips to keep in mind include:

- Keep enough distance between you and the vehicle in front of you.
- Avoid needless heavy braking.
- Keep pace with traffic.

If the engine ever stops while the vehicle is being driven, brake normally but do not pump the brakes. Doing so could make the pedal harder to push down. If the engine stops, there will be some power brake assist but it will be used when the brake is applied. Once the power assist is used up, it can take longer to stop and the brake pedal will be harder to push.
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Steering

Electric Power Steering
This vehicle has electric power steering. It does not have power steering fluid. Regular maintenance is not required.

If power steering assist is lost due to a system malfunction, the vehicle can be steered, but may require increased effort.

See your dealer if there is a problem.

If the steering assist is used for an extended period of time, power assist may be reduced.

If the steering wheel is turned until it reaches the end of its travel, and is held in that position for an extended period of time, power steering assist may be reduced.

Normal use of the power steering assist should return when the system cools down.

See specific vehicle steering messages under Steering System Messages \( \Rightarrow 151 \). See your dealer if there is a problem.

Curve Tips
- Take curves at a reasonable speed.
- Reduce speed before entering a curve.
- Maintain a reasonable steady speed through the curve.
- Wait until the vehicle is out of the curve before accelerating gently into the straightaway.

Steering in Emergencies
- There are some situations when steering around a problem may be more effective than braking.
- Holding both sides of the steering wheel allows you to turn 180 degrees without removing a hand.
- Antilock Brake System (ABS) allows steering while braking.

Off-Road Recovery

The vehicle's right wheels can drop off the edge of a road onto the shoulder while driving. Follow these tips:

1. Ease off the accelerator and then, if there is nothing in the way, steer the vehicle so that it straddles the edge of the pavement.
2. Turn the steering wheel about one-eighth of a turn, until the right front tire contacts the pavement edge.

Curve Tips
- Take curves at a reasonable speed.
- Reduce speed before entering a curve.
- Maintain a reasonable steady speed through the curve.
- Wait until the vehicle is out of the curve before accelerating gently into the straightaway.

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1. Ease off the accelerator and then, if there is nothing in the way, steer the vehicle so that it straddles the edge of the pavement.
2. Turn the steering wheel about one-eighth of a turn, until the right front tire contacts the pavement edge.
3. Turn the steering wheel to go straight down the roadway.

**Loss of Control**

**Skidding**

There are three types of skids that correspond to the vehicle's three control systems:

- **Braking Skid** — wheels are not rolling.
- **Steering or Cornering Skid** — too much speed or steering in a curve causes tires to slip and lose cornering force.
- **Acceleration Skid** — too much throttle causes the driving wheels to spin.

Defensive drivers avoid most skids by taking reasonable care suited to existing conditions, and by not overdriving those conditions. But skids are always possible.

If the vehicle starts to slide, follow these suggestions:

- Ease your foot off the accelerator pedal and steer the way you want the vehicle to go. The vehicle may straighten out. Be ready for a second skid if it occurs.
- Slow down and adjust your driving according to weather conditions. Stopping distance can be longer and vehicle control can be affected when traction is reduced by water, snow, ice, gravel, or other material on the road. Learn to recognize warning clues — such as enough water, ice, or packed snow on the road to make a mirrored surface — and slow down when you have any doubt.
- Try to avoid sudden steering, acceleration, or braking, including reducing vehicle speed by shifting to a lower gear. Any sudden changes could cause the tires to slide.

Remember: Antilock brakes help avoid only the braking skid.

**Off-Road Driving**

Four-wheel-drive vehicles can be used for off-road driving. Vehicles without four-wheel drive and vehicles not equipped with All Terrain (AT) or On-Off Road (OOR) tires must not be driven off-road except on a level, solid surface. For more contact information about the original equipment tires, see the Limited Warranty and Owner Assistance Information manual.

One of the best ways for successful off-road driving is to control the speed.

**Warning**

When driving off-road, bouncing and quick changes in direction can easily throw you out of position. This could cause you to lose control and crash. You and your passengers should always wear safety belts.

**Before Driving Off-Road**

- Have all necessary maintenance and service work completed.
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- Fuel the vehicle, fill fluid levels, and check inflation pressure in all tires, including the spare, if equipped.
- Read all the information about four-wheel-drive vehicles in this manual.
- Know the local laws that apply to off-road driving.

To gain more ground clearance if needed, it may be necessary to remove the front fascia lower air dam. However, driving without the air dam reduces fuel economy.

Caution
Operating the vehicle for extended periods without the front fascia lower air dam installed can cause improper air flow to the engine. Re-attach the front fascia air dam after off-road driving.

Loading the Vehicle for Off-Road Driving

⚠️ Warning
- Unsecured cargo on the load floor can be tossed about when driving over rough terrain. You or your passengers can be struck by flying objects. Secure the cargo properly.
- Keep cargo in the cargo area as far forward and as low as possible. The heaviest things should be on the floor, forward of the rear axle.
- Heavy loads on the roof raise the vehicle’s center of gravity, making it more likely to roll over. You can be seriously or fatally injured if the vehicle rolls over. Put heavy loads inside the cargo area, not on the roof.

For more information about loading the vehicle, see If the Vehicle Is Stuck © 192 and Tires © 297.

Environmental Concerns
- Always use established trails, roads, and areas that have been set aside for public off-road recreational driving and obey all posted regulations.
- Do not damage shrubs, flowers, trees, or grasses or disturb wildlife.
- Do not park over things that burn. See Parking over Things That Burn © 205.

Driving on Hills

Driving safely on hills requires good judgment and an understanding of what the vehicle can and cannot do.

⚠️ Warning
Many hills are simply too steep for any vehicle. Driving up hills can cause the vehicle to stall. Driving down hills can cause loss (Continued)
Driving and Operating 187

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
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</thead>
<tbody>
<tr>
<td>of control. Driving across hills can cause a rollover. You could be injured or killed. Do not drive on steep hills.</td>
</tr>
</tbody>
</table>

Before driving on a hill, assess the steepness, traction, and obstructions. If the terrain ahead cannot be seen, get out of the vehicle and walk the hill before driving further.

When driving on hills:
- Use a low gear and keep a firm grip on the steering wheel.
- Maintain a slow speed.
- When possible, drive straight up or down the hill.
- Slow down when approaching the top of the hill.
- Use headlamps even during the day to make the vehicle more visible.

<table>
<thead>
<tr>
<th>Warning</th>
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<tbody>
<tr>
<td>Driving to the top of a hill at high speed can cause an accident. There could be a drop-off, embankment, cliff, or even another vehicle. You could be seriously injured or killed. As you near the top of a hill, slow down and stay alert.</td>
</tr>
</tbody>
</table>

- Never go downhill forward or backward with either the transmission or transfer case in N (Neutral). The brakes could overheat and you could lose control.

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the vehicle has the two-speed automatic transfer case, shifting the transfer case to N (Neutral) can cause your vehicle to roll even if the transmission is in P (Park). This is because the N (Neutral) position on the transfer case overrides the transmission. You or someone else could be injured. If leaving the vehicle, set the parking brake and shift the transmission to P (Park). Shift the transfer case to any position but N (Neutral).</td>
</tr>
</tbody>
</table>

- When driving down a hill, keep the vehicle headed straight down. Use a low gear because the engine will work with the brakes to slow the vehicle and help keep the vehicle under control.

<table>
<thead>
<tr>
<th>Warning</th>
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<tbody>
<tr>
<td>Heavy braking when going down a hill can cause your brakes to overheat and fade. This could cause loss of control and you or others could be injured or killed. Apply the brakes lightly when</td>
</tr>
</tbody>
</table>

(Continued)
188 Driving and Operating

**Warning (Continued)**

Descending a hill and use a low gear to keep vehicle speed under control.

If the vehicle stalls on a hill:

1. Apply the brakes to stop the vehicle, and then apply the parking brake.
2. Shift into P (Park) and then restart the engine.
   - If driving uphill when the vehicle stalls, shift to R (Reverse), release the parking brake, and back straight down.
   - Never try to turn the vehicle around. If the hill is steep enough to stall the vehicle, it is steep enough to cause it to roll over.
   - If you cannot make it up the hill, back straight down the hill.
3. If the vehicle cannot be restarted after stalling, set the parking brake, shift into P (Park), and turn the vehicle off.
   3.1. Leave the vehicle and seek help.
   3.2. Stay clear of the path the vehicle would take if it rolled downhill.
3. If driving downhill when the vehicle stalls, shift to a lower gear, release the parking brake, and drive straight down the hill.

Avoid turns that take the vehicle across the incline of the hill. A hill that can be driven straight up or down might be too steep to drive across. Driving across an incline puts more weight on the downhill wheels, which could cause a downhill slide or a rollover.

- Surface conditions can be a problem. Loose gravel, muddy spots, or even wet grass can cause the tires to slip sideways, downhill. If the vehicle slips sideways, it can hit something that will trip it — a rock, a rut, etc. — and roll over.
- Hidden obstacles can make the steepness of the incline more severe. If a rock is driven across with the uphill wheels, or if the downhill wheels drop into a rut or depression, the vehicle can tilt even more.
- If an incline must be driven across, and the vehicle starts to slide, turn downhill. This should help straighten out the vehicle and prevent the side slipping.
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Driving in Mud, Sand, Snow, or Ice

Use a low gear when driving in mud — the deeper the mud, the lower the gear. Keep the vehicle moving to avoid getting stuck.

Traction changes when driving on sand. On loose sand, such as on beaches or sand dunes, the tires tend to sink into the sand. This affects steering, accelerating, and braking. Drive at a reduced speed and avoid sharp turns or abrupt maneuvers.

Driving in Water

Traction is reduced on hard packed snow and ice and it is easy to lose control. Reduce vehicle speed when driving on hard packed snow and ice.

Caution

Do not drive through standing water if it is deep enough to cover the wheel hubs, axles, or exhaust pipe. Deep water can damage the axle and other vehicle parts.

If the standing water is not too deep, drive slowly through it. At faster speeds, water splashes and the vehicle can stall. When going through water, the brakes get wet and it may take longer to stop. See “Driving on Wet Roads” later in this section.
Driving and Operating

After Off-Road Driving
Remove any brush or debris that has collected on the underbody or chassis, or under the hood. These accumulations can be a fire hazard.

After operation in mud or sand, have the brake linings cleaned and checked. These substances can cause glazing and uneven braking. Check the body structure, steering, suspension, wheels, tires, and exhaust system for damage and check the fuel lines and cooling system for any leakage.

More frequent maintenance service is required. See the Maintenance Schedule 344.

Driving on Wet Roads
Rain and wet roads can reduce vehicle traction and affect your ability to stop and accelerate. Always drive slower in these types of driving conditions and avoid driving through large puddles and deep-standing or flowing water.

⚠️ Warning

Wet brakes can cause crashes. They might not work as well in a quick stop and could cause pulling to one side. You could lose control of the vehicle.

After driving through a large puddle of water or a car/vehicle wash, lightly apply the brake pedal until the brakes work normally.

Flowing or rushing water creates strong forces. Driving through flowing water could cause the vehicle to be carried away. If this happens, you and other vehicle occupants could drown. Do not ignore police warnings and be very cautious about trying to drive through flowing water.

Hydroplaning
Hydroplaning is dangerous. Water can build up under the vehicle's tires so they actually ride on the water. This can happen if the road is wet enough and you are going fast enough. When the vehicle is hydroplaning, it has little or no contact with the road.

There is no hard and fast rule about hydroplaning. The best advice is to slow down when the road is wet.

Other Rainy Weather Tips
Besides slowing down, other wet weather driving tips include:

- Allow extra following distance.
- Pass with caution.
- Keep windshield wiping equipment in good shape.
- Keep the windshield washer fluid reservoir filled.
- Have good tires with proper tread depth. See Tires 297.
- Turn off cruise control.
Hill and Mountain Roads

Driving on steep hills or through mountains is different than driving on flat or rolling terrain. Tips include:

- Keep the vehicle serviced and in good shape.
- Check all fluid levels and brakes, tires, cooling system, and transmission.
- Shift to a lower gear when going down steep or long hills.

**Warning**

Using the brakes to slow the vehicle on a long downhill slope can cause brake overheating, can reduce brake performance, and could result in a loss of braking. Shift the transmission to a lower gear to let the engine assist the brakes on a steep downhill slope.

**Warning**

Coasting downhill in N (Neutral) or with the ignition off is dangerous. This can cause overheating of the brakes and loss of steering. Always have the engine running and the vehicle in gear.

- Drive at speeds that keep the vehicle in its own lane. Do not swing wide or cross the center line.
- Be alert on top of hills; something could be in your lane (e.g., stalled car, accident).
- Pay attention to special road signs (e.g., falling rocks area, winding roads, long grades, passing or no-passing zones) and take appropriate action.

Winter Driving

**Driving on Snow or Ice**

Snow or ice between the tires and the road creates less traction or grip, so drive carefully. Wet ice can occur at about 0 °C (32 °F) when freezing rain begins to fall. Avoid driving on wet ice or in freezing rain until roads can be treated.

**For Slippery Road Driving:**

- Accelerate gently. Accelerating too quickly causes the wheels to spin and makes the surface under the tires slick.
- Turn on Traction Control. See Traction Control/Electronic Stability Control 218.
- The Antilock Brake System (ABS) improves vehicle stability during hard stops, but the brakes should be applied sooner than when on dry pavement. See Antilock Brake System (ABS) 216.
- Allow greater following distance and watch for slippery spots. Icy patches can occur on otherwise
192 Driving and Operating

clear roads in shaded areas. The surface of a curve or an overpass can remain icy when the surrounding roads are clear. Avoid sudden steering maneuvers and braking while on ice.

- Turn off cruise control.

Blizzard Conditions

Stay with the vehicle unless there is help nearby. If possible, use Roadside Assistance. See Roadside Assistance Program \(\diamond\) 364. To get help and keep everyone in the vehicle safe:

- Turn on the hazard warning flashers.
- Tie a red cloth to an outside mirror.

⚠️ Warning

Snow can trap engine exhaust under the vehicle. This may cause exhaust gases to get inside. Engine exhaust contains carbon monoxide (CO), which cannot be seen or smelled. It can cause unconsciousness and even death.

If the vehicle is stuck in snow:

- Clear snow from the base of the vehicle, especially any blocking the exhaust pipe.
- Open a window about 5 cm (2 in) on the vehicle side that is away from the wind, to bring in fresh air.
- Fully open the air outlets on or under the instrument panel.
- Adjust the climate control system to circulate the air inside the vehicle and set the fan speed to the highest setting. See “Climate Control Systems.”

For more information about CO, see Engine Exhaust \(\diamond\) 206.

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. See “Rocking the Vehicle to Get It Out” later in this section.

The Traction Control System (TCS) can often help to free a stuck vehicle. See Traction Control/Electronic Stability Control \(\diamond\) 218. If TCS cannot free the vehicle, see “Rocking the Vehicle to Get it Out” following.
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Warning
If the vehicle’s tires spin at high speed, they can explode, and you or others could be injured. The vehicle can overheat, causing an engine compartment fire or other damage. Spin the wheels as little as possible and avoid going above 56 km/h (35 mph).

For information about using tire chains on the vehicle, see Tire Chains ◦ 316.

Rocking the Vehicle to Get It Out
Turn the steering wheel left and right to clear the area around the front wheels. For four-wheel-drive vehicles, shift into Four-Wheel Drive High. Turn the TCS off. Shift back and forth between R (Reverse) and a forward gear, spinning the wheels as little as possible. To prevent transmission wear, wait until the wheels stop spinning before shifting gears. 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. See Towing the Vehicle ◦ 330. Recovery hooks can be used, if equipped.

Recovery Hooks

Warning
Never pull on recovery hooks from the side. The hooks could break and you and others could be injured. When using recovery hooks, always pull the vehicle from the front.

Caution
Do not drive through standing water if it is deep enough to cover the wheel hubs, axles, or exhaust pipe. Deep water can damage the axle and other vehicle parts.

If the vehicle has recovery hooks at the front of the vehicle, use them if the vehicle is stuck off-road and needs to be pulled some place to continue driving.
Vehicle Load Limits
It is very important to know how much weight the vehicle can carry. This weight is called the vehicle capacity weight and includes the weight of all occupants, cargo and all nonfactory-installed options. Two labels on the vehicle may show how much weight it was designed to carry, the Tire and Loading Information label and the Certification/Tire label.

⚠️ Warning
Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also reduce stopping distance, damage the tires, and shorten the life of the vehicle.

Tire and Loading Information Label

A vehicle specific Tire and Loading Information label is attached to the center pillar (B-pillar). The tire and loading information label shows the number of occupant seating positions (1), and the maximum vehicle capacity weight (2) in kilograms and pounds.

The Tire and Loading Information label also shows the size of the original equipment tires (3) and the recommended cold tire inflation pressures (4). For more information on tires and inflation see Tires ▷ 297 and Tire Pressure ▷ 303.

There is also important loading information on the vehicle Certification/Tire label. It may show the Gross Vehicle Weight Rating (GVWR) and the Gross Axle Weight Rating (GAWR) for the front and rear axles. See "Certification/Tire Label" later in this section.

“Steps for Determining Correct Load Limit”

1. Locate the statement "The combined weight of occupants and cargo should
never exceed XXX kg or XXX lbs." on your vehicle’s placard.

2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.

3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.

4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the "XXX" amount equals 1400 lbs. and there will be five 150 lb passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400-750 (5 x 150) = 650 lbs.)

5. Determine the combined weight of luggage and cargo being loaded on the vehicle.

That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.

6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.”

See Trailer Towing 248 for important information on towing a trailer, towing safety rules, and trailering tips.

Example 1

1. Vehicle Capacity Weight for Example 1 = 453 kg (1,000 lbs)
2. Subtract Occupant Weight @ 68 kg (150 lbs) x 2 = 136 kg (300 lbs)
3. Available Occupant and Cargo Weight = 317 kg (700 lbs)
### Driving and Operating

#### Example 2

1. Vehicle Capacity Weight for Example 2 = 453 kg (1,000 lbs)
2. Subtract Occupant Weight @ 68 kg (150 lbs) × 5 = 136 kg (750 lbs)
3. Available Cargo Weight = 113 kg (250 lbs)

#### Example 3

1. Vehicle Capacity Weight for Example 3 = 453 kg (1,000 lbs)
2. Subtract Occupant Weight @ 91 kg (200 lbs) × 5 = 453 kg (1,000 lbs)
3. Available Cargo Weight = 0 kg (0 lbs)

Refer to the vehicle's tire and loading information label for specific information about the vehicle's capacity weight and seating positions. The combined weight of the driver, passengers and cargo should never exceed the vehicle's capacity weight.

### Certification/Tire Label

A vehicle specific Certification/Tire label is attached to the center pillar (B-pillar). The label may show the size of the vehicle's original tires and the inflation pressures needed to obtain the gross weight capacity of the vehicle. This is called Gross Vehicle Weight Rating (GVWR). The GVWR...
includes the weight of the vehicle, all occupants, fuel and cargo.

The Certification/Tire label also may show the maximum weights for the front and rear axles, called Gross Axle Weight Rating (GAWR). To find out the actual loads on the front and rear axles, weigh the vehicle at a weigh station. Your dealer can help with this. Be sure to spread the load equally on both sides of the centerline.

⚠️ Warning

Do not load the vehicle any heavier than the Gross Vehicle Weight Rating (GVWR), or either the maximum front or rear Gross Axle Weight Rating (GAWR). This can cause systems to break and change the way the vehicle handles. This could cause loss of control and a crash. Overloading can also reduce stopping distance, damage the tires, and shorten the life of the vehicle.

The label will help decide how much cargo and installed equipment the truck can carry. Using heavier suspension components to get added durability might not change the weight ratings. Ask your dealer to help load the vehicle the right way.

⚠️ Warning (Continued)

Overloading the vehicle may cause damage. Repairs would not be covered by the vehicle warranty. Do not overload the vehicle.

⚠️ Warning

Things you put inside the vehicle can strike and injure people in a sudden stop or turn, or in a crash.

- Put things in the cargo area of the vehicle. Try to spread the weight evenly.
- Never stack heavier things, like suitcases, inside the vehicle so that some of them are above the tops of the seats.
- Do not leave an unsecured child restraint in the vehicle.
- When you carry something inside the vehicle, secure it whenever you can.
- Do not leave a seat folded down unless you need to.
Driving and Operating

There’s also important loading information for off-road driving in this manual. See “Loading the Vehicle for Off-Road Driving” under Off-Road Driving \(\Rightarrow\) 185.

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Starting and Operating

New Vehicle Break-In

**Caution**

The vehicle does not need an elaborate break-in. But it will perform better in the long run if you follow these guidelines:

- Keep the vehicle speed at 88 km/h (55 mph) or less for the first 805 km (500 mi).
- Do not drive at any one constant speed, fast or slow, for the first 805 km (500 mi). Do not make full-throttle starts. Avoid downshifting to brake or slow the vehicle.
- Avoid making hard stops for the first 322 km (200 mi) or so. During this time the new brake linings are not yet broken in. Hard stops with new linings can mean (Continued)

**Caution (Continued)**

premature wear and earlier replacement. Follow this breaking-in guideline every time you get new brake linings.

- Do not tow a trailer during break-in. See Trailer Towing \(\Rightarrow\) 248 for the trailer towing capabilities of the vehicle and more information.

Following break-in, engine speed and load can be gradually increased.

Adjustable Throttle and Brake Pedal

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

The pedals can only be adjusted when the vehicle is in P (Park).
The switch used to adjust the pedals is to the left of the steering wheel.

Press the switch to the left to move the pedals closer to your body.
Press the switch to the right to move the pedals away.

Before you start driving, fully press the brake pedal to confirm the adjustment is right for you.

The vehicle may have a memory function, which lets pedal settings be saved and recalled. See Memory Seats \(\uparrow\) 55.

Vehicles with Keyless Access have pushbutton starting.

Pressing the button cycles it through three modes: ACC/ACCESSORY, ON/RUN/START, and Stopping the Engine/OFF.

The 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 \(\uparrow\) 27.

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/LOCK/OFF (No Indicator Lights)**: When the vehicle is stopped, press the ENGINE START/STOP button 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) \(\uparrow\) 203.

If the vehicle is not in P (Park), the ignition will return to ACC/ACCESSORY and display the message SHIFT TO PARK in the Driver Information Center (DIC).
See Transmission Messages \(\uparrow\) 152. When the vehicle is shifted into P (Park), the ignition system will switch to OFF.

Do not turn the engine off when the vehicle is moving. This will cause a loss of power assist in the brake and steering systems and disable the airbags.
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The vehicle may have an electric steering column lock. The lock is activated when the vehicle is switched to OFF and either front door is opened. A sound may be heard as the lock actuates or releases. The steering column lock may not release with the wheels turned off center. If this happens, the vehicle may not start. Move the steering wheel from left to right while attempting to start the vehicle. If this does not work, the vehicle needs service.

If the vehicle must be shut off in an emergency:

1. Brake using a firm and steady pressure. Do not pump the brakes repeatedly. This may deplete power assist, requiring increased brake pedal force.
2. Shift the vehicle to N (Neutral). This can be done while the vehicle is moving. After shifting to N (Neutral), firmly apply the brakes and steer the vehicle to a safe location.
3. Come to a complete stop, shift to P (Park), and turn the ignition to OFF. On vehicles with an automatic transmission, the shift lever must be in P (Park) to turn the ignition switch to the OFF position.
4. Set the parking brake. See Parking Brake \(\Rightarrow\) 217.

⚠️ Warning

Turning off the vehicle while moving may cause loss of power assist in the brake and steering systems and disable the airbags. While driving, only shut the vehicle off in an emergency.

If the vehicle cannot be pulled over, and must be shut off while driving, press and hold the ENGINE START/STOP button for longer than two seconds, or press twice in five seconds.

ACC/ACCESSORY (Amber Indicator Light) : This mode allows some electrical accessories to be used when the engine is off.

With the ignition off, pressing the button one time without the brake pedal applied will place the ignition system in ACC/ACCESSORY.

The ignition will switch from ACC/ACCESSORY to OFF after five minutes to prevent battery rundown.

ON/RUN/START (Green Indicator Light) : This mode is for driving and starting. With the ignition off, and the brake pedal applied, pressing the button once will 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 \(\Rightarrow\) 201. The ignition will then remain in ON/RUN.

Service Only 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 Only 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 Only Mode. Press the button again to turn the vehicle off.

**Starting the Engine**

Move the shift lever to P (Park) or N (Neutral). The engine will not start in any other position. To restart the engine when the vehicle is already moving, use N (Neutral) only.

**Caution**

Do not try to shift to P (Park) if the vehicle is moving. If you do, you could damage the transmission. Shift to P (Park) only when the vehicle is stopped.

**Starting Procedure (Keyless Access)**

1. With the Keyless Access system, the RKE transmitter must be in the vehicle. Press the ENGINE START/STOP button 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 the RKE battery is low, the Driver Information Center (DIC) will display a message. See **Key and Lock Messages**.

2. If the engine does not start after five to 10 seconds, especially in very cold weather (below −18 °C or 0 °F), it could be flooded with too much gasoline. Try pushing the accelerator pedal all the way to the floor and holding it there as you press the ENGINE START/STOP button, for up to a maximum of 15 seconds. Wait at least 15 seconds between each try, to allow the cranking motor to cool down. When the
202 Driving and Operating

engine starts, let go of the button, and the accelerator. If the vehicle starts briefly but then stops again, do the same thing. This clears the extra gasoline from the engine. Do not race the engine immediately after starting it. Operate the engine and transmission gently until the oil warms up and lubricates all moving parts.

Engine Heater
The engine coolant heater can provide easier starting and better fuel economy during engine warm-up in cold weather conditions at or below −18 °C (0 °F). Vehicles with an engine heater should be plugged in at least four hours before starting. There may be an internal thermostat in the plug end of the cord, which will prevent engine coolant heater operation at temperatures above −18 °C (0 °F).

To Use the Engine Coolant Heater
1. Turn off the engine.

2. Open the hood and unwrap the electrical cord. The cord is by the left front fender, next to the engine compartment fuse block.

Check the heater cord for damage. If it is damaged, do not use it. See your dealer for a replacement. Inspect the cord for damage yearly.

3. Plug the cord into a normal, grounded 110-volt AC outlet.

Warning
Improper use of the heater cord or an extension cord can damage the cord and may result in overheating and fire.

• Plug the cord into a three-prong electrical utility receptacle that is protected by a ground fault detection function. An ungrounded outlet could cause an electric shock.

• Use a weatherproof, heavy-duty, 15 amp-rated extension cord if needed. Failure to use the recommended extension cord in good operating condition, or using a damaged heater or extension cord, could make it overheat and cause a fire, property damage, electric shock, and injury.

• Do not operate the vehicle with the heater cord permanently attached to the (Continued)
Warning (Continued)

vehicle. Possible heater cord and thermostat damage could occur.

- While in use, do not let the heater cord touch vehicle parts or sharp edges. Never close the hood on the heater cord.
- Before starting the vehicle, unplug the cord, reattach the cover to the plug, and securely fasten the cord. Keep the cord away from any moving parts.

4. Before starting the engine, be sure to unplug and store the cord as it was before to keep it away from moving engine parts. If you do not, it could be damaged.

The length of time the heater should remain plugged in depends on several factors. Ask a dealer in the area where you will be parking the vehicle for the best advice on this.

Retained Accessory Power (RAP)

The following vehicle accessories can be used for up to 10 minutes after the engine is turned off:
- Audio System
- Power Windows
- OnStar System (if equipped)
- Sunroof (if equipped)
- Accessory Power Outlets. The console and center seat outlets are RAP powered.

These features work when the key is in ON/RUN or ACC/ACCESSORY. Once the key is turned from ON/RUN to LOCK/OFF, the windows and sunroof continue to work up to 10 minutes until any door is opened. The radio continues to work for up to 10 minutes or until the driver door is opened.

Shift ing Into Park

⚠️ Warning

It can be dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, use the steps that follow. If the vehicle has a four-wheel drive transfer case with a N (Neutral) position, and the transfer case is in N (Neutral), the vehicle will be free to roll, even if the shift lever is in P (Park). Be sure the transfer case is in a drive gear. If towing a trailer, see Driving Characteristics and Towing Tips 246.

1. Hold the brake pedal down, then set the parking brake. See Parking Brake 217.
2. Move the shift lever into the P (Park) position by pulling the shift lever toward you and moving it up as far as it will go.

3. Be sure the transfer case is in a drive gear — not in N (Neutral).

4. Turn the ignition to LOCK/OFF.

**Leaving the Vehicle with the Engine Running**

**Warning**

It can be dangerous to leave the vehicle with the engine running. The vehicle could move suddenly if the shift lever is not fully in P (Park) with the parking brake firmly set.

If you have four-wheel drive and the transfer case is in N (Neutral), the vehicle will be free to roll, even if the shift lever is in P (Park). So be sure the transfer case is in a drive gear — not in N (Neutral).

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
</tr>
</thead>
<tbody>
<tr>
<td>And, if you leave the vehicle with the engine running, it could overheat and even catch fire. You or others could be injured. Do not leave the vehicle with the engine running unless you have to.</td>
</tr>
</tbody>
</table>

If you have to leave the vehicle with the engine running, be sure the vehicle is in P (Park) and the parking brake is firmly set before you leave it. After you move the shift lever into P (Park), hold the regular brake pedal down. Then, see if you can move the shift lever away from P (Park) without first pulling it toward you. If you can, it means that the shift lever was not fully locked into P (Park).

**Torque Lock**

If you are parking on a hill and you do not shift the transmission into P (Park) properly, the weight of the vehicle may put too much force on the parking pawl in the transmission. You may find it difficult to pull the shift lever out of P (Park). This is called torque lock. To prevent torque lock, set the parking brake and then shift into P (Park) properly before you leave the driver seat. To find out how, see Shifting Into Park 203.

When you are ready to drive, move the shift lever out of P (Park) before you release the parking brake.

If torque lock does occur, you may need to have another vehicle push yours a little uphill to take some of the pressure from the parking pawl in the transmission. You will then be able to pull the shift lever out of P (Park).

**Shifting out of Park**

This vehicle is equipped with an electronic shift lock release system. The shift lock release is designed to:

- Prevent ignition key removal unless the shift lever is in P (Park).
Prevent movement of the shift lever out of P (Park), unless the ignition is in ON/RUN and the regular brake pedal is applied.

The shift lock release is always functional except in the case of an uncharged or low voltage (less than 9 volt) battery.

If the vehicle has an uncharged battery or a battery with low voltage, try charging or jump starting the battery. See Jump Starting - North America 326.

To shift out of P (Park):
1. Apply the brake pedal.
2. Move the shift lever to the desired position.

If you still are unable to shift out of P (Park):
1. Ease the pressure on the shift lever.
2. While holding down the brake pedal, press the shift lever all the way into P (Park).
3. Move the shift lever to the desired position.

If you are still having a problem shifting, then have the vehicle serviced soon.

Parking over Things That Burn

Warning
Things that can burn could touch hot exhaust parts under the vehicle and ignite. Do not park over papers, leaves, dry grass, or other things that can burn.

Active Fuel Management®

Vehicles with V8 engines may have Active Fuel Management. This system allows the engine to operate on either all or half of its cylinders, depending on the driving conditions.

When less power is required, such as cruising at a constant vehicle speed, the system will operate in the half cylinder mode, allowing the vehicle to achieve better fuel economy. When greater power demands are required, such as accelerating from a stop, passing, or merging onto a freeway, the system will maintain full-cylinder operation.

If the vehicle has an Active Fuel Management indicator, see Driver Information Center (DIC) 137 for more information on using this display.
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Engine Exhaust

⚠️ Warning

Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. Exposure to CO can cause unconsciousness and even death.

Exhaust may enter the vehicle if:

- The vehicle idles in areas with poor ventilation (parking garages, tunnels, deep snow that may block underbody airflow or tail pipes).
- The exhaust smells or sounds strange or different.
- The exhaust system leaks due to corrosion or damage.
- The vehicle exhaust system has been modified, damaged, or improperly repaired.

(Continued)

⚠️ Warning (Continued)

- There are holes or openings in the vehicle body from damage or aftermarket modifications that are not completely sealed.

If unusual fumes are detected or if it is suspected that exhaust is coming into the vehicle:

- Drive it only with the windows completely down.
- Have the vehicle repaired immediately.

Never park the vehicle with the engine running in an enclosed area such as a garage or a building that has no fresh air ventilation.

Running the Vehicle While Parked

It is better not to park with the engine running.

If the vehicle is left with the engine running, follow the proper steps to be sure the vehicle will not move. See Shifting Into Park  203 and Engine Exhaust  206.

If parking on a hill and pulling a trailer, see Driving Characteristics and Towing Tips  246.
### Automatic Transmission

If equipped, there is an electronic shift lever position indicator within the instrument cluster. This display comes on when the ignition key is turned to the ON/RUN position.

There are several different positions for the shift lever.

<table>
<thead>
<tr>
<th>P</th>
<th>R</th>
<th>N</th>
<th>D</th>
<th>M</th>
</tr>
</thead>
</table>


**P**: This position locks the rear wheels. It is the best position to use when starting the engine because the vehicle cannot move easily. When parked on a hill, especially when the vehicle has a heavy load, you might notice an increase in the effort to shift out of P (Park). See “Torque Lock” under Shifting Into Park  203.

**R**: Use this gear to back up.

**Caution**

Shifting to R (Reverse) while the vehicle is moving forward could damage the transmission. The repairs would not be covered by the vehicle warranty. Shift to R (Reverse) only after the vehicle is stopped.

**Warning**

It is dangerous to get out of the vehicle if the shift lever is not fully in P (Park) with the parking brake firmly set. The vehicle can roll.

Do not leave the vehicle when the engine is running. If you have left the engine running, the vehicle can move suddenly. You or others could be injured. To be sure the vehicle will not move, even when you are on fairly level ground, always set the parking brake and move the shift lever to P (Park). See Shifting Into Park  203.

**N**: In this position, the engine does not connect with the wheels. To restart when you are already in N (Neutral), see If the Vehicle Is Stuck  192.

**Warning (Continued)**

So, be sure the transfer case is in a drive gear, Two-Wheel Drive High or Four-Wheel Drive High or Four-Wheel Drive Low — not in N (Neutral). See Shifting Into Park  203.

To rock the vehicle back and forth to get out of snow, ice, or sand without damaging the transmission, see If the Vehicle Is Stuck  192.
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moving, use N (Neutral) only. Also, use N (Neutral) when the vehicle is being towed.

**D** : This position is for normal driving. It provides the best fuel economy. If you need more power for passing, and you are:
- Going less than about 55 km/h (35 mph), push the accelerator pedal about halfway down.
- Going about 55 km/h (35 mph) or more, push the accelerator all the way down.

By doing this, the vehicle shifts down to the next gear and has more power.

Use D (Drive) and Tow/Haul Mode when towing a trailer, carrying a heavy load, driving on steep hills, or driving off-road. Shift the transmission to a lower gear selection if the transmission shifts too often.

Downshifting the transmission in slippery road conditions could result in skidding. See “Skidding” under Loss of Control 185.

The vehicle has a shift stabilization feature that adjusts the transmission shifting to the current driving conditions in order to reduce rapid upshifts and downshifts. This shift stabilization feature is designed to determine, before making an upshift, if the engine is able to maintain vehicle speed by analyzing things such as vehicle speed, throttle position, and vehicle load. If the shift stabilization feature determines that a current vehicle speed cannot be maintained, the transmission does not upshift and instead holds the current gear. In some cases, this could appear to be a delayed shift, however the transmission is operating normally.

The transmission uses adaptive shift controls. The adaptive shift control process continually compares key shift parameters to pre-programmed ideal shifts stored in the transmission’s computer. The transmission constantly makes adjustments to improve vehicle performance according to how the vehicle is being used, such as with a heavy load or when the...
temperature changes. During this adaptive shift control process, shifting might feel different as the transmission determines the best settings.

When temperatures are very cold, the transmission's gear shifting could be delayed providing more stable shifts until the engine warms up. Shifts could be more noticeable with a cold transmission. This difference in shifting is normal.

M: This position allows selection of a range of gears appropriate for current driving conditions. If equipped, see “Range Selection Mode” under Manual Mode ▶ 209.

### Caution

Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.

### Normal Mode Grade Braking

If equipped with a gasoline engine and an automatic transmission, Normal Mode Grade Braking is enabled when the vehicle is started, but is not enabled in Range Selection Mode. It assists in maintaining desired vehicle speeds when driving on downhill grades by using the engine and transmission to slow the vehicle. The first time the system engages for each ignition key cycle, a DIC message will be displayed. See Transmission Messages ▶ 152.

To disable or enable Normal Mode Grade Braking within the current ignition key cycle, press and hold the Tow/Haul button for five seconds. When the button is released, the requested mode change is made. A DIC message displays. See Transmission Messages ▶ 152.

For other forms of grade braking, see Tow/Haul Mode ▶ 212 and Cruise Control ▶ 221.

### Kickdown Mode

The accelerator pedal provides an additional downshift after pressing through the kickdown feature. It requires extra pedal pressure near the end of its travel to engage.

### Manual Mode

#### Range Selection Mode

If equipped, Range Selection Mode helps control the vehicle's transmission and vehicle speed while driving downhill or towing a trailer by letting you select a desired range of gears.
To use this feature:

1. Move the shift lever to M (Manual Mode).

2. Tap the plus/minus buttons on the shift lever to select the desired range of gears for current driving conditions.

Hold the plus/minus buttons on the shift lever to select the highest or lowest range available for the current vehicle speed.

When the shift lever is moved from D (Drive) to M (Manual Mode), a number displays next to the M, indicating the current transmission range.

This number is the highest gear that the transmission will command while operating in M (Manual Mode). All gears below that number are available. As driving conditions change, the transmission can automatically shift to lower gears.

For example, when 5 (Fifth) is selected, 1 (First) through 5 (Fifth) gears are automatically shifted by the transmission, but 6 (Sixth) cannot be used until the plus/minus button on the shift lever is used to change to the range.

In vehicles with gasoline engines, when the shift lever is moved from D (Drive) to M (Manual Mode), a downshift may occur. The gear that the transmission is operating in when the shift lever is moved from D (Drive) to M (Manual Mode) determines if a downshift occurs. See the following chart.
Driving and Operating

<table>
<thead>
<tr>
<th>Gear before shifting from D (Drive) to M (Manual Mode)</th>
<th>8th</th>
<th>7th</th>
<th>6th</th>
<th>5th</th>
<th>4th</th>
<th>3rd</th>
<th>2nd</th>
<th>1st</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range after shifting from D (Drive) to M (Manual Mode) – Tow/Haul not engaged</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6 M6 M5 M4 M3 M3 M2 M1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Range after shifting from D (Drive) to M (Manual Mode) – Tow/Haul engaged |     |     |     |     |     |     |     |     |
| M6 M5 M4 M3 M3 M3 M2 M1                                               |     |     |     |     |     |     |     |     |

Grade Braking is not available when Range Selection Mode is active. See Tow/Haul Mode 212.

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

Caution

- Spinning the tires or holding the vehicle in one place on a hill using only the accelerator pedal may damage the transmission. The repair will not be covered by the vehicle warranty. If you are stuck, do not spin the tires. When stopping on a hill, use the brakes to hold the vehicle in place.

Low Traction Mode

Low Traction Mode assists in vehicle acceleration when road conditions are slippery, such as with ice or snow. While the vehicle is at a stop, select M2 using Range Selection Mode. This will limit torque to the wheels and help to prevent the tires from spinning.
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**Tow/Haul Mode**

The Tow/Haul Mode adjusts the transmission shift pattern to reduce shift cycling. This provides increased performance, vehicle control, and enhanced transmission and engine cooling when driving down steep hills or mountain grades, towing, or hauling heavy loads.

The selector button is on the end of the shift lever. Turn the Tow/Haul Mode on and off by pressing the button. When the Tow/Haul Mode is enabled, a light on the instrument cluster will come on.

See *Tow/Haul Mode Light* 132 and *Hill and Mountain Roads* 191.

Also see “Tow/Haul Mode” under *Towing Equipment* 251.

**Tow/Haul Mode Grade Braking**

Tow/Haul Mode Grade Braking is only enabled while the Tow/Haul Mode is selected and the vehicle is not in the Range Selection Mode. See “Tow/Haul Mode” listed previously and *Manual Mode* 209.

Tow/Haul Mode Grade Braking assists in maintaining desired vehicle speeds when driving on downhill grades by using the engine and transmission to slow the vehicle.

To disable or enable Tow/Haul Grade Braking within the current ignition key cycle, press and hold the Tow/Haul button for five seconds. When the button is released, the requested mode change is made. A DIC message is displayed. See *Transmission Messages* 152.

See *Towing Equipment* 251.

For other forms of grade braking, see *Automatic Transmission* 207 and *Cruise Control* 221.
Drive Systems

Four-Wheel Drive
If equipped, four-wheel drive engages the front axle for extra traction. Read the appropriate section for transfer case operation before using.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not drive on clean, dry pavement in 4↑ and 4↓ (if equipped) for an extended period of time. These conditions may cause premature wear on the vehicle’s powertrain.</td>
</tr>
</tbody>
</table>

Driving on clean, dry pavement in four-wheel drive may:
• Cause a vibration to be felt in the steering system.
• Cause tires to wear faster.
• Make the transfer case harder to shift, and cause it to run noisier.

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shifting the transfer case to N (Neutral) can cause the vehicle to roll even if the transmission is in P (Park). You or someone else could be seriously injured. Be sure to set the parking brake before placing the transfer case in N (Neutral). See Parking Brake 217.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extended high-speed operation in 4↓ may damage or shorten the life of the drivetrain.</td>
</tr>
</tbody>
</table>

Engagement noise and bump when shifting between 4↓ and 4↑ or from N (Neutral), with the engine running, is normal.

Shifting into 4↓ will turn Traction Control and StabiliTrak® off. See Traction Control/Electronic Stability Control 218.

Two Speed Automatic Transfer Case
Use the transfer case knob next to the steering wheel to shift into and out of four-wheel drive.

Indicator lights display which setting the transfer case is in. N (Neutral) is indicated on the knob. The indicator lights will display briefly when the ignition is turned on and one will stay on. If the lights display momentarily when the ignition is in ON/RUN, but none stay on, the knob may have been turned while the vehicle was off. To see the indicator, turn the knob to another
position so that it matches the actual transfer case setting. If no lights display, take the vehicle to your dealer for service. An indicator light flashes while shifting the transfer case and remains illuminated when the shift is complete.

If the transfer case cannot make a requested shift, it will return to the last chosen setting. Turn the knob back to the previous transfer case setting to see the indicator.

The settings are:

**N (Neutral)**: Use only when the vehicle needs to be towed. See *Recreational Vehicle Towing* or *Towing the Vehicle*.

**2 † (Two-Wheel Drive High)**: Use for driving on most streets and highways. The front axle is not engaged. This setting provides the best fuel economy.

**AUTO (Automatic Four-Wheel Drive)**: Use when road surface traction conditions are variable. When driving in AUTO, the front axle is engaged, and the vehicle’s power is sent to the front and rear wheels automatically based on driving conditions. This setting provides slightly lower fuel economy than 2 †.

**4 † (Four-Wheel Drive High)**: Use this position when extra traction is needed, such as when driving on snowy or icy roads, when off-roading, or when plowing snow.

**4 ↓ (Four-Wheel Drive Low)**: This setting engages the front axle and delivers extra torque. Choose 4 ↓ when driving off-road in deep sand, deep mud, or deep snow, and while climbing or descending steep hills.

Shifting into 4 ↓ will turn Traction Control and StabiliTrak off. See *Traction Control/Electronic Stability Control*.

**Shifting Into 4 † or AUTO**

Turn the knob to the 4 † or AUTO position at any speed, except from 4 ↓. The indicator light will flash while shifting and will remain on when the shift is completed.

**Shifting Into 2 †**

Turn the knob to 2 † at any speed, except when shifting from 4 ↓. The indicator light will flash while shifting and will remain on when the shift is completed.

**Shifting Into 4 ↓**

When 4 ↓ is engaged, keep vehicle speed below 72 km/h (45 mph).

To shift into 4 ↓:

1. The ignition must be in ON/RUN and the vehicle must be stopped or moving less than 5 km/h (3 mph) with the transmission in N (Neutral). It is best for the vehicle to be moving 1.6 to 3.2 km/h (1 to 2 mph).

2. Turn the knob to 4 ↓. Wait for the 4 ↓ indicator light to stop flashing before shifting the transmission into gear.
Caution

Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case.

If the transmission is in gear and/or moving more than 5 km/h (3 mph), the 4 ↓ indicator light will flash for 30 seconds and not complete the shift. After 30 seconds the transfer case will shift to 4 ↑. Turn the knob to 4 ↑ to display the indicator. With the vehicle moving less than 5 km/h (3 mph), and the transmission in N (Neutral), attempt the shift again.

Shifting Out of 4 ↓

To shift:
1. The vehicle must be stopped or moving less than 5 km/h (3 mph) with the transmission in N (Neutral) and the ignition in ON/RUN. It is best for the vehicle to be moving 1.6 to 3.2 km/h (1 to 2 mph).

Caution

Shifting the transmission into gear before the requested mode indicator light has stopped flashing could damage the transfer case.

If the transmission is in gear and/or moving more than 5 km/h (3 mph), the 4 ↑, AUTO, or 2 ↑ indicator light will flash for 30 seconds but will not complete the shift. With the vehicle moving less than 5 km/h (3 mph), and the transmission in N (Neutral), attempt the shift again.

Shifting Into N (Neutral)

To shift:
1. Park the vehicle on a level surface.

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8. Turn the engine off, and the ignition to ACC/ACCESSORY.

9. Place the transmission shift lever in P (Park). See Recreational Vehicle Towing \textcircled{330}.

10. Turn the ignition to LOCK/OFF.

Shifting Out of N (Neutral)

To shift:

1. Set the parking brake and apply the brake pedal.

2. Turn the ignition to ON/RUN with the engine off.

3. Shift the transmission to N (Neutral).

4. Turn the transfer case knob to the desired setting.

   After the transfer case has shifted out of N (Neutral), the N (Neutral) light will go out.

5. Release the parking brake.

6. Start the engine and shift the transmission to the desired gear.

Brakes

Antilock Brake System (ABS)

This vehicle has ABS, an advanced electronic braking system that helps prevent a braking skid.

When the vehicle begins to drive away, ABS checks itself. A momentary motor or clicking noise might be heard while this test is going on, and it might even be noticed that the brake pedal moves a little. This is normal.

If there is a problem with ABS, this warning light stays on. See Antilock Brake System (ABS) Warning Light \textcircled{131}.

If driving safely on a wet road and it becomes necessary to slam on the brakes and continue braking to avoid a sudden obstacle, a computer senses the wheels are slowing down. If one of the wheels is about to stop rolling, the computer will separately work the brakes at each wheel.

ABS can change the brake pressure to each wheel, as required, faster than any driver could. This can help you steer around the obstacle while braking hard.

As the brakes are applied, the computer keeps receiving updates on wheel speed and controls braking pressure accordingly.

Remember: ABS does not change the time needed to get a foot up to the brake pedal or always decrease stopping distance. If you get too close to the vehicle in front of you, there will not be enough time to apply the brakes if that vehicle suddenly slows or stops. Always leave enough room up ahead to stop, even with ABS.
Using ABS
Do not pump the brakes. Just hold the brake pedal down firmly and let ABS work. You may hear the ABS pump or motor operating and feel the brake pedal pulsate. This is normal.

Braking in Emergencies
ABS allows you to steer and brake at the same time. In many emergencies, steering can help more than even the very best braking.

Parking Brake
Set the parking brake by holding the regular brake pedal down, then pushing down the parking brake pedal.
If the ignition is on, the brake system warning light will come on. See Brake System Warning Light 130.

Caution
Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Make sure that the parking brake is fully released and the brake warning light is off before driving.

To release the parking brake, hold the regular brake pedal down, then push down momentarily on the parking brake pedal until you feel the pedal release. Slowly pull your foot up off the parking brake pedal. If the parking brake is not released when you begin to drive, the brake system warning light will flash and a chime will sound warning you that the parking brake is still on.
If you are towing a trailer and are parking on a hill, see Driving Characteristics and Towing Tips 246.

Brake Assist
The Brake Assist feature is designed to assist the driver in stopping or decreasing vehicle speed in emergency driving conditions. This feature uses the stability system hydraulic brake control module to supplement the power brake system under conditions where the driver has quickly and forcefully applied the brake pedal in an attempt to quickly stop or slow down the vehicle. The stability system hydraulic brake control module increases brake pressure at each corner of the vehicle until the ABS activates. Minor brake pedal pulsation or pedal movement during this time is normal and the driver should continue to apply the brake pedal as
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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)

Vehicles with StabiliTrak have an HSA feature, which may be useful when the vehicle is stopped on a grade. This feature is designed to prevent the vehicle from rolling, either forward or rearward, during vehicle drive off. After the driver completely stops and holds the vehicle in a complete standstill on a grade, HSA will be automatically activated. During the transition period between when the driver releases the brake pedal and starts to accelerate to drive off on a grade, HSA holds the braking pressure for a maximum of two seconds to ensure that there is no rolling. The brakes will automatically release when the accelerator pedal is applied within the two-second window. If the vehicle is equipped with the Integrated Trailer Brake Control (ITBC) system, HSA may also apply the trailer brakes. It will not activate if the vehicle is in a drive gear and facing downhill or if the vehicle is facing uphill and in R (Reverse). There may be situations on minor hills (less than 5% grade) with a loaded vehicle or while pulling a trailer where HSA may activate.

Ride Control Systems

Traction Control/ Electronic Stability Control

System Operation

The vehicle has a Traction Control System (TCS) and StabiliTrak, an electronic stability control system. These systems help limit wheel spin and assist the driver in maintaining control, especially on slippery road conditions.

TCS activates if it senses that any of the drive wheels are spinning or beginning to lose traction. When this happens, TCS applies the brakes to the spinning wheels and reduces engine power to limit wheel spin.

StabiliTrak activates when the vehicle senses a difference between the intended path and the direction the vehicle is actually traveling. StabiliTrak selectively applies braking pressure to any one of the vehicle wheel brakes to assist the driver in keeping the vehicle on the
intended path. Trailer Sway Control (TSC) is also on automatically when the vehicle is started. See *Trailer Sway Control (TSC)* 258.

If cruise control is being used and traction control or StabiliTrak begins to limit wheel spin, cruise control will disengage. Cruise control may be turned back on when road conditions allow.

Both systems come on automatically when the vehicle is started and begins to move. The systems may be heard or felt while they are operating or while performing diagnostic checks. This is normal and does not mean there is a problem with the vehicle.

It is recommended to leave both systems on for normal driving conditions, but it may be necessary to turn TCS off if the vehicle gets stuck in sand, mud, ice, or snow. See *If the Vehicle Is Stuck* 192 and “Turning the Systems Off and On” later in this section.

When the transfer case is in Four-Wheel Drive Low, the stability system is automatically disabled, the StabiliTrak OFF light comes on, and the appropriate message will appear on the DIC. Both traction control and StabiliTrak are automatically disabled in this condition.

The indicator light for both systems is in the instrument cluster. This light will:
- Flash when TCS is limiting wheel spin.
- Flash when StabiliTrak is activated.
- Turn on and stay on when either system is not working.

If either system fails to turn on or to activate, a message displays in the Driver Information Center (DIC), and $\bullet$ 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 $\bullet$ comes on and stays on:
1. Stop the vehicle.
2. Turn the engine off and wait 15 seconds.
3. Start the engine.

Drive the vehicle. If $\bullet$ comes on and stays on, the vehicle may need more time to diagnose the problem. If the condition persists, see your dealer.

**Turning the Systems Off and On**

The button for TCS and StabiliTrak is on the instrument panel to the left of the steering wheel.
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<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not repeatedly brake or accelerate heavily when TCS is off. The vehicle driveline could be damaged.</td>
</tr>
</tbody>
</table>

To turn off only TCS, press and release the \( \text{g} \) button. The traction off light \( \text{g} \) displays in the instrument cluster. The appropriate message will display in the DIC. See Ride Control System Messages \( \Rightarrow 150 \).

To turn TCS and StabiliTrak on again, press and release the \( \text{g} \) button. The traction off light \( \text{g} \) and the StabiliTrak OFF light \( \text{g} \) in the instrument cluster turn off.

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

The vehicle has a Trailer Sway Control (TSC) feature and a Hill Start Assist (HSA) feature. See Trailer Sway Control (TSC) \( \Rightarrow 258 \) or Hill Start Assist (HSA) \( \Rightarrow 218 \).

Adding accessories can affect the vehicle performance. See Accessories and Modifications \( \Rightarrow 262 \).

**Magnetic Ride Control**

This vehicle may have a semi-active damping system called Magnetic Ride Control. With this feature, improved vehicle ride and handling is provided under a variety of passenger and loading conditions.

Magnetic Ride Control is fully automatic and uses a computer controller to continuously monitor vehicle speed, wheel to body position, lift/dive, and steering position of the vehicle. The controller then sends signals to each shock absorber to independently adjust the damping level to provide the optimum vehicle ride.

Magnetic Ride Control also interacts with the Tow/Haul Mode that, when activated, will provide additional control of the shock absorbers. This additional control results in better ride and handling characteristics when the vehicle is loaded or towing a trailer. See “Tow/Haul Mode” under Towing Equipment \( \Rightarrow 251 \).

**Locking Rear Axle**

Vehicles with a locking rear axle can give more traction on snow, mud, ice, sand, or gravel. It works like a standard axle most of the time, but
when traction is low, this feature will allow the rear wheel with the most traction to move the vehicle.

**Automatic Level Control**

The Automatic Level Control (ALC) rear suspension is available on light-duty vehicles and comes as a part of the Magnetic Ride Control suspension, if equipped. ALC may also be available as a stand alone feature.

This type of level control is fully automatic and will provide a better leveled riding position as well as better handling under a variety of passenger and loading conditions. An air compressor connected to the rear shocks will raise or lower the rear of the vehicle to maintain proper vehicle height. The system is activated when the ignition key is turned to ON/RUN and will automatically adjust vehicle height thereafter. The system may exhaust (lower vehicle height) for up to 10 minutes after the ignition key has been turned off. You may hear the air compressor operating when the height is being adjusted.

If a weight-distributing hitch is being used, it is recommended to allow the shocks to inflate, thereby leveling the vehicle prior to adjusting the hitch.

---

**Cruise Control**

*Warning*

Cruise control can be dangerous where you cannot drive safely at a steady speed. Do not use cruise control on winding roads or in heavy traffic.

Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.

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 brakes are applied, the cruise control disengages.

For an explanation of how cruise control interacts with the Range Selection Mode, Tow/Haul Mode,
and Grade Braking systems. See “Grade Braking” under Tow/Haul Mode 212.

This vehicle has StabiliTrak and when the system begins to limit wheel spin, the cruise control will automatically disengage. See Traction Control/Electronic Stability Control 218. If a collision alert occurs when cruise control is activated, cruise control is disengaged. See Forward Collision Alert (FCA) System 234. When road conditions allow the cruise control to be safely used again, it can be turned back on.

- **(On/Off)**: Press to turn the system on or off. A white indicator comes on in the instrument cluster when the cruise is turned on.
- **SET− (Set/Coast)**: Press briefly to set the speed and activate cruise control. If cruise control is already active, use to decrease vehicle speed.
- **+RES (Resume/Accelerate)**: If there is a set speed in memory, press to resume that speed or press and hold to accelerate. If cruise control is already active, use to increase vehicle speed.
- **(Cancel)**: Press to disengage cruise control without erasing the set speed from memory.

**Setting Cruise Control**

If (is on when not in use, SET− or +RES control could get pressed and go into cruise when not desired. Keep the cruise (button off when cruise is not being used.

1. Press (to turn the cruise system on.
2. Get up to the desired speed.
3. Press and release SET−. The desired set speed briefly appears in the instrument cluster.
4. Remove foot from the accelerator.

The cruise control indicator on the instrument cluster turns green after cruise control has been set to the desired speed. See Instrument Cluster 120.

**Resuming a Set Speed**

If the cruise control is set at a desired speed and then the brakes or (is applied, 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, briefly press +RES. The vehicle returns to the previous set speed.
Increasing Speed While Using Cruise Control

If the cruise control system is already activated:

- Press and hold the +RES button until the vehicle accelerates to the desired speed, then release it.
- To increase vehicle speed in small increments, briefly press +RES. For each press, the vehicle goes about 1.6 km/h (1 mph) faster.

The speedometer reading can be displayed in either English or metric units. See Instrument Cluster \( \diamond \) 120. The increment value used depends on the units displayed.

Reducing Speed While Using Cruise Control

If the cruise control system is already activated:

- Press and hold the SET– button until the desired lower speed is reached, then release it.
- To slow down in small increments, briefly press SET–. For each press, the vehicle goes about 1.6 km/h (1 mph) slower.

The speedometer reading can be displayed in either English or metric units. See Instrument Cluster \( \diamond \) 120. The increment value used depends on the units displayed.

Passing Another Vehicle While Using Cruise Control

Use the accelerator pedal to increase the vehicle speed. When you take your foot off the pedal, the vehicle will slow down to the previous set cruise speed. While pressing the accelerator pedal or shortly following the release to override cruise control, briefly pressing the SET– button will result in cruise control set to the current vehicle speed.

Using Cruise Control on Hills

How well the cruise control works on hills depends on the vehicle speed, the load, and the steepness of the hills. When going up steep hills, press the accelerator pedal to maintain speed. When going downhill, Cruise Grade Braking helps maintain the driver selected speed.

Cruise Grade Braking is enabled when the vehicle is started and cruise control is active. It is not enabled in Range Selection Mode. It assists in maintaining driver selected speed when driving on downhill grades by using the engine and transmission to slow the vehicle.

To disable and enable Cruise Grade Braking for the current ignition key cycle, press and hold the Tow/Haul button for five seconds. A DIC message displays. See Transmission Messages \( \diamond \) 152.

For other forms of Grade Braking, see Automatic Transmission \( \diamond \) 207 and Tow/Haul Mode \( \diamond \) 212.

Ending Cruise Control

There are four ways to end cruise control:

- Step lightly on the brake pedal.
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- Press ⚫️.
- Shift the transmission to N (Neutral).
- To turn off cruise control, press ⚫️.

Erasing Speed Memory
The cruise control set speed is erased from memory if the ⚫️ button is pressed or 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 a radar sensor. See Radio Frequency Statement 370.

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 218. When road conditions allow ACC to be safely used, the ACC can be turned back on.

ACC will not engage if the TCS or 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.

⚠️ Warning (Continued)
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 183.

⚠️ Warning
ACC will not detect or brake for children, pedestrians, animals, or other objects.

Do not use ACC when:
- On winding and hilly roads or when the sensors are blocked by snow, ice, or dirt. The system may not detect a vehicle ahead. Keep the entire front of the vehicle clean.

(Continued)
Warning (Continued)

- Visibility is low, such as in fog, rain, or snow conditions. ACC performance is limited under these conditions.
- On slippery roads where fast changes in tire traction can cause excessive wheel slip.

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Select the set speed desired for cruise. This is the vehicle speed when no vehicle is detected in its path.

ACC will not set or resume at a speed less than 25 km/h (16 mph).

To set ACC:
1. Press (On/Off).
2. Get up to the desired speed.
3. Press and release SET–.
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 on the Driver Information Center (DIC) in the instrument cluster and Head-Up

(On/Off) : Press to turn the system on or off. The indicator turns white on the instrument cluster when ACC is turned on.

+RES (Resume/Accelerate) : Press briefly to resume the previous set speed or hold to accelerate. If ACC is already active, use to increase vehicle speed.

SET– (Set/Coast) : Press briefly to set the speed and activate ACC. If cruise control is already active, use to decrease vehicle speed.

(Cancel) : Press to disengage ACC without erasing the selected set speed.

(Express Distance Gap) : Press to select a following gap time (or distance) setting for ACC of Far, Medium, or Near.

Setting Adaptive Cruise Control

If the cruise button is on when not in use, the cruise on/off control could get pressed and cruise control could become active when not desired. Keep the cruise control off when cruise is not being used.
display (HUD), if equipped. When 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, ACC is disengaged without erasing the set speed from memory.

To begin using ACC again, press +RES on the steering wheel. 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−. 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. A warning message will appear on the Driver Information Center (DIC) and HUD, if equipped. See Cruise Control Messages 144.

- Press and hold +RES until the desired set speed appears on the display, then release it.

- To increase vehicle speed in small increments, briefly press +RES. For each press, the vehicle goes to the next 1 km/h (1 mph) faster 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 120. 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− and release the accelerator pedal. The vehicle will now cruise at the lower speed.

- Press and hold SET− until the desired lower speed is reached, then release it.

- To decrease the vehicle speed in small increments, briefly press SET−. For each press, the vehicle speed goes to the next 1 km/h (1 mph) slower mark on the speedometer.

The speedometer reading can be displayed in either English or metric units. See Instrument Cluster 120. The increment value used depends on the units displayed.
Selecting the Follow Distance Gap

When a slower moving vehicle is detected ahead within the selected following gap, ACC will adjust the vehicle’s speed and attempt to maintain the follow distance gap selected.

Press \( \mathcal{\textbullet} \) on the steering wheel to adjust the following gap. When pressed, the current gap setting displays briefly on the instrument cluster and HUD, if equipped.

Subsequent presses cycle the \( \mathcal{\textbullet} \) 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 \( \Rightarrow \) 234.

Alerting the Driver

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, six red lights or the collision alert symbol on the HUD, if equipped, will flash on the windshield, and either eight beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. See “Collision/Detection Systems” under Vehicle Personalization \( \Rightarrow \) 155.

See Defensive Driving \( \Rightarrow \) 183.

Approaching and Following a Vehicle

The vehicle ahead symbol is in the instrument cluster and HUD, if equipped.

The vehicle ahead symbol only displays when a vehicle is detected in your vehicle’s path moving in the same direction.
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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 lights will come on. The automatic braking may feel or sound different than if the brakes were applied manually. This is normal.

Stationary or Very Slow-Moving Objects

⚠️ Warning
Adaptive Cruise Control (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.

(Continued)

⚠️ Warning (Continued)

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 you will need to manually apply the brakes to slow the vehicle when:

- Your vehicle speed goes below the minimum speed of 16 km/h (10 mph).
- The sensors are blocked.
- The Traction Control System (TCS) or electronic stability control system has activated or been disabled.

- No traffic or other objects are being detected.
- There is a fault in the system.

A message will appear on the DIC indicating that cruise is disengaging. The ACC active symbol will not be displayed when ACC is no longer active.

ACC Override

If using the accelerator pedal while ACC is active, a warning message in the DIC and in the HUD, if equipped, will indicate that automatic braking will not occur. See Vehicle Messages 143. ACC will resume operation when the accelerator pedal is not being pressed.

⚠️ Warning
The ACC will not automatically apply the brakes if your foot is resting on the accelerator pedal. You could crash into a vehicle ahead of you.
Curves in the Road

⚠️ Warning
On curves, ACC may not detect a vehicle ahead in your lane. You could be startled if the vehicle accelerates up to the set speed, especially when following a vehicle exiting or entering exit ramps. You could lose control of the vehicle or crash. Do not use ACC while driving on an entrance or exit ramp. Always be ready to use the brakes if necessary.

⚠️ Warning
On curves, ACC may respond to a vehicle in another lane, or may not have time to react to a vehicle in your lane. You could crash into a vehicle ahead of you, or lose control of your vehicle. Give extra attention in curves and be ready (Continued)

⚠️ Warning (Continued)

ACC may operate differently in a sharp curve. It may reduce the vehicle speed if the curve is too sharp.

When following a vehicle and entering a curve, ACC may not detect the vehicle ahead and accelerate to the set speed. When this happens, the vehicle ahead 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 curve. This is normal operation. The vehicle does not need service.
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Other Vehicle Lane Changes

ACC will not detect a vehicle ahead until it is completely in the lane. The brakes may need to be manually applied.

Do Not Use ACC on Hills and When Towing a Trailer

Do not use ACC when driving on steep hills or when towing a trailer. ACC will not detect a vehicle in the lane while driving on steep hills. The driver will often need to take over acceleration and braking on steep hills, especially when towing a trailer. If the brakes are applied, the ACC disengages.

Disengaging ACC

There are three ways to disengage ACC:
- Step lightly on the brake pedal.
- Press ⚪.
- Press ⚫.

Erasing Speed Memory

The cruise control set speed is erased from memory if ⚫ is pressed or if the ignition is turned off.

Cleaning the Sensing System

The radar sensor on the front of the vehicle can become blocked by snow, ice, dirt, or mud. This area needs to be cleaned for ACC to operate properly.

For cleaning instructions, see “Washing the Vehicle” under Exterior Care ⤵ 334.
Driver Assistance Systems

This vehicle may have features that work together to help avoid crashes or reduce crash damage while driving, backing, and parking. Read this entire section before using these systems.

⚠️ Warning

Do not rely on the Driver Assistance Systems. These systems do not replace the need for paying attention and driving safely. You may not hear or feel alerts or warnings provided by these systems. Failure to use proper care when driving may result in injury, death, or vehicle damage. See Defensive Driving 183.

(Continued)

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
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<tbody>
<tr>
<td>Under many conditions, these systems will not:</td>
</tr>
<tr>
<td>• Detect children, pedestrians, bicyclists, or animals.</td>
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<tr>
<td>• Detect vehicles or objects outside the area monitored by the system.</td>
</tr>
<tr>
<td>• Work at all driving speeds.</td>
</tr>
<tr>
<td>• Warn you or provide you with enough time to avoid a crash.</td>
</tr>
<tr>
<td>• Work under poor visibility or bad weather conditions.</td>
</tr>
<tr>
<td>• Work if the detection sensor is not cleaned or is covered by ice, snow, mud, or dirt.</td>
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</tbody>
</table>

Complete attention is always required while driving, and you should be ready to take action and apply the brakes and/or steer the vehicle to avoid crashes.

Audible or Safety Alert Seat

Some driver assistance features alert the driver of obstacles by beeping. To change the volume of the warning chime, see “Comfort and Convenience” under Vehicle Personalization 155.

If equipped with the Safety Alert Seat, the driver seat cushion may provide a vibrating pulse alert instead of beeping. To change this, see “Collision/Detection Systems” under Vehicle Personalization 155.

Assistance Systems for Parking or Backing

If equipped, the Rear Vision Camera (RVC), Rear Parking Assist (RPA), Front Parking Assist (FPA), and Rear Cross Traffic Alert (RCTA) may help the driver park or avoid objects. Always check around the vehicle when parking or backing.

Rear Vision Camera (RVC)

When the vehicle is shifted into R (Reverse), the RVC displays an image of the area behind the vehicle.
in the center stack 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 a button on the infotainment system, shift into P (Park), or reach a vehicle speed of 8 km/h (5 mph). The rear vision camera is above the license plate.

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 on the RVC screen to show that RPA has detected an object. This triangle changes from amber to red and increases in size the closer the object.

---

**Warning**

The camera(s) do not display children, pedestrians, bicyclists, crossing traffic, animals, or any other object outside of 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 conditions.
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 damage, even with parking assist, always check the area around the vehicle and check all mirrors before moving forward or backing.

The instrument cluster may have a parking assist display with bars that show “distance to object” and object location information for RPA, and on some vehicles, FPA. As the object gets closer, more bars light up and the bars change color from yellow to amber to red.

When an object is first detected in the rear, one beep will be heard from the rear, or both sides of the Safety Alert Seat will pulse two times. When an object is very close (<0.6 m (2 ft) in the vehicle rear, or <0.3 m (1 ft) in the vehicle front), a continuous beep will sound from the front or rear depending on object location, or both sides of the Safety Alert Seat will pulse five times. Beeps for FPA are higher pitched than for RPA.

Rear Cross Traffic Alert (RCTA)

If equipped, when the vehicle is shifted into R (Reverse), RCTA displays a red warning triangle with a left or right pointing arrow on the RVC screen to warn of traffic coming from the left or right. This system detects objects coming from up to 20 m (65 ft) from the left or right side of the vehicle. When an object is detected, either three beeps sound from the left or right or three Safety Alert Seat pulses occur on the left or right side, depending on the direction of the detected vehicle.

Use caution while backing up when towing a trailer, as the RCTA detection zones that extend out from the back of the vehicle do not move further back when a trailer is towed.
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Turning the Features On or Off

The \( P \) button to the left of the steering wheel is used to turn on or off the Front and Rear Parking Assist. The indicator light in the button comes on when the features are on and turns off when the features have been disabled.

Front and Rear Parking Assist can be turned on, off, or on with towbar through vehicle personalization. See “Parking Assist” under Vehicle Personalization \( \diamond 155 \). If the parking assist is turned off through vehicle personalization, the parking assist button will be disabled. To turn the parking assist on again, select On in the vehicle personalization menu. The On with Towbar setting allows for the parking assist to work properly with a small item attached to the trailer hitch. Turn off parking assist when towing a trailer.

To turn the rear parking assist symbols, guidance lines, or Rear Cross Traffic Alert on or off, see “Rear Camera” under Vehicle Personalization \( \diamond 155 \).

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 the Front Automatic Braking (FAB) System can help to avoid a crash or reduce crash damage.

Forward Collision Alert (FCA) System

If equipped, the FCA system may help to avoid or reduce the harm caused by front-end crashes. When approaching a vehicle ahead too quickly, FCA provides a red flashing alert on the windshield and rapidly beeps or pulses the driver seat. FCA also lights an amber visual alert if following another vehicle much too closely.

FCA detects vehicles within a distance of approximately 60 m (197 ft) and operates at speeds above 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 \( \diamond 224 \).

⚠️ 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. FCA does not warn of pedestrians, animals, signs, guardrails, bridges, construction (Continued)
Warning (Continued)

barrels, or other objects. Be ready to take action and apply the brakes. For more information, see Defensive Driving 183.

FCA can be disabled with the FCA steering wheel control, or if your vehicle is equipped with Adaptive Cruise Control (ACC), through vehicle personalization. See the “Auto Collision Preparation” portion of “Collision/Detection Systems” under Vehicle Personalization 155.

Detecting the Vehicle Ahead

FCA warnings will not occur unless the FCA system detects a vehicle ahead. When a vehicle is detected, the vehicle ahead indicator will display green. Vehicles may not be detected on curves, highway exit ramps, or hills, due to poor visibility; or if a vehicle ahead is partially blocked by pedestrians or other objects. FCA will not detect another vehicle ahead until it is completely in the driving lane.

⚠️ Warning

FCA does not provide a warning to help avoid a crash, unless it detects a vehicle. FCA may not detect a vehicle ahead if the FCA sensor is blocked by dirt, snow, or ice, or if the windshield is damaged. It may also not detect a vehicle on winding or hilly roads, or in conditions that can limit visibility such as fog, rain, or snow, or if the headlamps or windshield are not cleaned or in proper condition. Keep the windshield, headlamps, and FCA sensors clean and in good repair.

Collision Alert

When your vehicle approaches another detected vehicle too rapidly, the red FCA display will flash on the windshield. Also, eight rapid high-pitched beeps will sound from the front, or both sides of the Safety Alert Seat will pulse five times. When this Collision Alert occurs, the brake system may prepare for driver braking to occur more rapidly which can cause a brief, mild deceleration. Continue to apply the brake pedal...
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as needed. Cruise control may be disengaged when the Collision Alert occurs.

Tailgating Alert

The vehicle-ahead indicator will display amber when you are following a vehicle ahead much too closely.

Selecting the Alert Timing

The Collision Alert control is on the steering wheel. Press \( \rightarrow \) / \( \leftarrow \) 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).

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, cleaning the outside of the windshield in front of the camera sensor behind the rearview mirror, and cleaning the front of the vehicle where radar sensors are located, may correct the issue.

For cleaning instructions, see “Washing the Vehicle” under Exterior Care \( \textcircled{334} \).

System operation may also be limited under snow, heavy rain, or road spray conditions.

Front Automatic Braking (FAB) System

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 traveling in the same direction that you may be about to crash into, it can provide a boost to braking or automatically brake the vehicle. This can help avoid or lessen the severity of crashes when driving in a forward gear. Depending on the situation, the vehicle may automatically brake moderately or hard. This front 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 \(\triangleright\) 234.

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.

(Continued)

<table>
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<tr>
<th><strong>Warning (Continued)</strong></th>
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<tbody>
<tr>
<td>- Detect a vehicle when weather limits visibility, such as in fog, rain, or snow.</td>
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<tr>
<td>- Detect a vehicle ahead if it is partially blocked by pedestrians or other objects.</td>
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</tbody>
</table>

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.

**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.

**Warning**

IBA may increase vehicle braking in situations when it may not be necessary. You could block the

(Continued)
### Warning (Continued)

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 personalization. See “Auto Collision Preparation” in “Collision/Detection Systems” under Vehicle Personalization 155.

#### Warning

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.

### Lane Change Alert (LCA)

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

#### Warning

LCA does not alert the driver to vehicles outside of the system detection zones, pedestrians, bicyclists, or animals. It may not provide alerts when changing lanes under all driving conditions. Failure to use proper care when changing lanes may result in injury, death, or vehicle damage. Before making a lane change, always check mirrors, glance over your shoulder, and use the turn signals.
LCA Detection Zones

The LCA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2 m (6 ft) off the ground. The Side Blind Zone Alert (SBZA) warning area starts at approximately the middle of the vehicle and goes back 5 m (16 ft). Drivers are also warned of vehicles rapidly approaching from up to 70 m (230 ft) behind the vehicle.

How the System Works

The LCA symbol lights up in the side mirrors when the system detects a moving vehicle in the next lane over in that blind zone or rapidly approaching that zone. If the turn signal is activated in the same direction as a detected vehicle, this display will flash as an extra warning not to change lanes.

LCA can be disabled through vehicle personalization using the Side Blind Zone Alert option. See “Collision/Detection Systems” under Vehicle Personalization 155.

If LCA is disabled by the driver, the LCA mirror displays will not light up.

When the System Does Not Seem to Work Properly

The LCA system requires some driving for the system to calibrate to maximum performance. This calibration may occur more quickly if the vehicle is driving on a straight highway road with traffic and roadside objects (e.g., guardrails, barriers).

LCA displays may not come on when passing a vehicle quickly, for a stopped vehicle, or when towing a trailer. The LCA detection zones that extend back from the side of the vehicle do not move further back when a trailer is towed. Use caution while changing lanes when towing a trailer. LCA may alert to objects attached to the vehicle, such as a trailer, bicycle, or object extending out to either side of the vehicle. Attached objects may also interfere with the detection of vehicles. This is normal system operation; the vehicle does not need service.

LCA may not always alert the driver to vehicles in the next lane over, especially in wet conditions or when
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When LCA is disabled for any reason other than the driver turning it off, the Side Blind Zone Alert On option will not be available on the personalization menu.

Radio Frequency Information

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

Warning
The LKA system does not continuously steer the vehicle. It may not keep the vehicle in the lane or give a Lane Departure Warning (LDW) alert, even if a lane marking is detected.

The LKA and LDW systems may not:
- Provide an alert or enough steering assist to avoid a lane departure or crash.

(Continued)
### Warning (Continued)

- Detect lane markings under poor weather or visibility conditions. This can occur if the windshield or headlamps are blocked by dirt, snow, or ice, if they are not in proper condition, or if the sun shines directly into the camera.
- Detect road edges.
- Detect lanes on winding or hilly roads.

If LKA only detects lane markings on one side of the road, it will only assist or provide an LDW alert when approaching the lane on the side where it has detected a lane marking. Even with LKA and LDW, you must steer the vehicle. Always keep your attention on the road and maintain proper vehicle position within the lane, or vehicle damage, injury, or death could occur. Always keep the windshield, headlamps, and camera sensors clean and in good repair. Do not use LKA in bad weather conditions.

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 turn signal in that direction. It may also provide an LDW alert by flashing 🚗 amber as the lane marking is crossed. Additionally, there will be three beeps, or the driver seat will pulse three times, on the right or left, depending on the lane departure direction.

The LKA system does not continuously steer the vehicle. If LKA does not detect active driver steering, an alert and chime may be provided. Steer the vehicle to dismiss.

### Warning (Continued)

Using LKA while towing a trailer or on slippery roads could cause loss of control of the vehicle and a crash. Turn the system off.

#### How the System Works

The LKA camera sensor is on the windshield ahead of the rearview mirror.

To turn LKA on and off, press 🚗 to the left of the steering wheel.

(Continued)
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When the System Does Not Seem to Work Properly

The system performance may be affected by:

- Close vehicles ahead.
- Sudden lighting changes, such as when driving through tunnels.
- Banked roads.
- Roads with poor lane markings, such as two-lane roads.

If the LKA system is not functioning properly when lane markings are clearly visible, cleaning the windshield may help.

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 of the recommended fuel is an important part of the proper maintenance of this vehicle. When driving in the U.S. and Canada, to help keep the engine clean and maintain optimum vehicle performance, we recommend using TOP TIER Detergent Gasolines. See www.toptiergas.com for a list of TOP TIER Detergent Gasolines.

Use premium unleaded gasoline meeting ASTM specification D4814 with a posted octane rating of 91 or higher. Regular unleaded gasoline rated at 87 octane or higher can be used, but acceleration and fuel economy will be reduced, and an audible knocking noise may be heard. If this occurs, use a gasoline rated at 91 octane or higher as soon as possible. Otherwise, the engine could be damaged. If heavy knocking is heard when using gasoline with a 91 octane rating or higher, the engine needs service.

Use of Seasonal Fuels

Use summer and winter fuels in the appropriate season. The fuels industry automatically modifies the fuel for the appropriate season. If fuel is left in the vehicle tank for long periods of time, driving or starting could be affected. Drive the vehicle until the fuel is at one-half tank or less, then refuel with the current seasonal fuel.

Prohibited Fuels

Gasolines containing oxygenates such as ethers and ethanol, as well as reformulated gasolines, are available in some cities. If these gasolines comply with the previously described specification, then they are acceptable to use.
However, E85 (85% ethanol) and other fuels containing more than 15% ethanol must be used only in FlexFuel vehicles.

### Caution

Do not use fuel containing methanol. It can corrode metal parts in the fuel system and also damage plastic and rubber parts. That damage would not be covered under the vehicle warranty.

Some gasolines, mainly high octane racing gasolines, can contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). Do not use gasolines and/or fuel additives with MMT as they can reduce spark plug life and affect emission control system performance. The malfunction indicator lamp may turn on. If this occurs, see your dealer for service.

### California Fuel Requirements

If the vehicle is certified to meet California Emissions Standards, it is designed to operate on fuels that meet California specifications. See the underhood emission control label. If this fuel is not available in states adopting California Emissions Standards, the vehicle will operate satisfactorily on fuels meeting federal specifications, but emission control system performance might be affected. The malfunction indicator lamp could turn on and the vehicle may not pass a smog-check test. See Malfunction Indicator Lamp (Check Engine Light) ⇒ 129. If this occurs, return to your authorized dealer for diagnosis. If it is determined that the condition is caused by the type of fuel used, repairs may not be covered by the vehicle warranty.

### Fuels in Foreign Countries

If planning to drive in countries outside the U.S. or Canada, the proper fuel might be hard to find. Check regional auto club or fuel retail brand websites for availability in the country where driving. Never use leaded gasoline, fuel containing methanol, manganese, or any other fuel not recommended. Costly repairs caused by use of improper fuel would not be covered by the vehicle warranty.

### Fuel Additives

To keep fuel systems clean, TOP TIER Detergent Gasoline is recommended. See Fuel ⇒ 242.

If TOP TIER Detergent Gasoline is not available, one bottle of Fuel System Treatment PLUS added to the fuel tank at every engine oil change, can help. Fuel System Treatment PLUS is the only gasoline additive recommended by General Motors. It is available at your dealer.
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Filling the Tank

⚠️ Warning

Fuel vapors and fuel fires burn violently and can cause injury or death.

- To help avoid injuries to you and others, read and follow all the instructions on the fuel pump island.
- Turn off the engine when refueling.
- Keep sparks, flames, and smoking materials away from fuel.
- Do not leave the fuel pump unattended.
- Do not use a cell phone while refueling.
- Do not reenter the vehicle while pumping fuel.
- Keep children away from the fuel pump and never let children pump fuel.

(Continued)

⚠️ Warning (Continued)

- Fuel can spray out if the refueling nozzle is inserted too quickly. This spray can happen if the tank is nearly full, and is more likely in hot weather. Insert the refueling nozzle slowly and wait for any hiss noise to stop prior to beginning to flow fuel.

To open the fuel door, push and release the rearward center edge of the door.

The vehicle has a capless refueling system and does not have a fuel cap. The filling nozzle must be fully inserted and latched prior to starting fuel flow.

⚠️ Warning

Overfilling the fuel tank by more than three clicks of a standard fill nozzle may cause:

- Vehicle performance issues, including engine stalling and damage to the fuel system.
- Fuel spills.
- Potential fuel fires.

Be careful not to spill fuel. Do not top off or overfill the tank and wait a few seconds after you have finished pumping before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See Exterior Care ➔ 334.
If a fire starts while you are refueling, do not remove the nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.

**Warning**

**Filling the Tank With a Portable Gas Can**

If the vehicle runs out of fuel and must be filled from a portable gas can:

1. Locate the capless funnel adapter from inside the vehicle.

2. Insert and latch the funnel into the capless fuel system.

3. Remove and clean the funnel adapter and return to the storage location.

**Filling a Portable Fuel Container**

**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.

**Warning (Continued)**

means. You or others could be badly burned and the vehicle could be damaged. Always:

- Use approved fuel containers.
- Remove the container from the vehicle, trunk, or pickup bed before filling.
- Place the container on the ground.
- Place the nozzle inside the fill opening of the container before dispensing fuel, and keep it in contact with the fill opening until filling is complete.
- Fill the container no more than 95% full to allow for expansion.
- Do not smoke, light matches, or use lighters while pumping fuel.
- Avoid using cell phones or other electronic devices.
Trailer Towing

General Towing Information

Only use towing equipment that has been designed for the vehicle. Contact your dealer or trailering dealer for assistance with preparing the vehicle for towing a trailer. Read the entire section before towing a trailer.

For towing a disabled vehicle, see Towing the Vehicle 330. For towing the vehicle behind another vehicle such as a motor home, see Recreational Vehicle Towing 330.

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 800 km (500 mi) to prevent damage to the engine, axle, or other parts.
- Then during the first 800 km (500 mi) of trailer towing, do not drive over 80 km/h (50 mph) and do not make starts at full throttle.
- Vehicles can tow in D (Drive). Shift the transmission to a lower gear if the transmission shifts too often under heavy loads and/or hilly conditions.
- Do not use Adaptive Cruise Control when towing.
- Turn off Parking Assist when towing.
- The Front Automatic Braking System should be set to Off when towing. See Front Automatic Braking (FAB) System 236.

⚠️ Warning

When towing a trailer, exhaust gases may collect at the rear of the vehicle and enter if the liftgate, trunk/hatch, or rear-most window is open.

When towing a trailer:
- Do not drive with the liftgate, trunk/hatch, or rear-most window open.
- Fully open the air outlets on or under the instrument panel.
- 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 206.

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, tires, 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.

**Passing**

More passing distance is needed when towing a trailer. The combination will not accelerate as quickly and is longer so it is necessary to go much farther beyond the passed vehicle before returning to the lane.

**Backing Up**

Hold the bottom of the steering wheel with one hand. To move the trailer to the left, move that hand to the left. To move the trailer to the right, move your hand to the right. Always back up slowly and, if possible, have someone guide you.

**Making Turns**

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

When turning with a trailer, make wider turns than normal. Do this so the trailer will not strike soft shoulders, curbs, road signs, trees, or other objects. Avoid jerky or sudden maneuvers. Signal well in advance.

If the trailer turn signal bulbs burn out, the arrows on the instrument cluster will still flash for turns. It is important to check occasionally to be sure the trailer bulbs are still working.

**Driving on Grades**

Reduce speed and shift to a lower gear before starting down a long or steep downgrade. If the transmission is not shifted down, the brakes might get hot and no longer work well.

Vehicles can tow in D (Drive). Shift the transmission to a lower gear if the transmission shifts too often under heavy loads and/or hilly conditions.

When towing, use the Tow/Haul Mode to prevent damage to the engine or transmission. See Tow/Haul Mode \( \diamond \) 212.

When towing at high altitude on steep uphill grades, consider the following: Engine coolant will boil at
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a lower temperature than at normal altitudes. If the engine is turned off immediately after towing at high altitude on steep uphill grades, the vehicle may show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground, with the transmission in P (Park) for a few minutes before turning the engine off. If the overheat warning comes on, see Engine Overheating 273.

Parking on Hills

**Warning**

Parking the vehicle on a hill with the trailer attached can be dangerous. If something goes wrong, the rig could start to move. People can be injured, and both the vehicle and the trailer can be damaged. When possible, always park the rig on a flat surface.

If parking the rig on a hill:

1. Press the brake pedal, but do not shift into P (Park) yet. Turn the wheels into the curb if facing downhill or into traffic if facing uphill.
2. Have someone place chocks under the trailer wheels.
3. When the wheel chocks are in place, release the regular brakes until the chocks absorb the load.
4. Reapply the brake pedal. Then apply the parking brake and shift into P (Park).
5. Release the brake pedal.

**Leaving After Parking on a Hill**

1. Apply and hold the brake pedal.
2. Start the engine.
3. Shift into a gear.
4. Release the parking brake.
5. Let up on the brake pedal.
6. Drive slowly until the trailer is clear of the chocks.

7. Stop and have someone pick up and store the chocks.

**Maintenance when Trailer Towing**

The vehicle needs service more often when pulling a trailer. See Maintenance Schedule 344. Things that are especially important in trailer operation are automatic transmission fluid, engine oil, axle lubricant, belts, cooling system, and brake system. It is a good idea to inspect these before and during the trip.

Check periodically to see that all hitch nuts and bolts are tight.

**Trailer Towing**

Do not tow a trailer during break-in. See New Vehicle Break-In 198.

Before towing a trailer, see "Hands-Free Operation" under Liftgate 36.
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**Warning**

The driver can lose control when pulling a trailer if the correct equipment is not used or the vehicle is not driven properly. For example, if the trailer is too heavy, the brakes may not work well—or even at all. The driver and passengers could be seriously injured. The vehicle may also be damaged; the resulting repairs would not be covered by the vehicle warranty. Pull a trailer only if all the steps in this section have been followed. Ask your dealer for advice and information about towing a trailer with the vehicle.

**Caution**

Pulling a trailer improperly can damage the vehicle and result in costly repairs not covered by the vehicle warranty. To pull a trailer correctly, follow the advice in this section and see your dealer for important information about towing a trailer with the vehicle.

To identify the trailering capacity of the vehicle, read the information in “Weight of the Trailer” following.

Trailering is different than just driving the vehicle by itself. Trailering means changes in handling, acceleration, braking, durability, and fuel economy. Successful, safe trailering takes correct equipment, and it has to be used properly.

The following information has many time-tested, important trailering tips and safety rules. Many of these are important for your safety and that of your passengers. So please read this section carefully before pulling a trailer.

**Weight of the Trailer**

How heavy can a trailer safely be?

It depends on how the rig is used. 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.

Trailer Weight Rating (TWR) is calculated assuming the tow vehicle has only the driver and all required trailering equipment. Weight of additional optional equipment, passengers, and cargo in the tow vehicle must be subtracted from the trailer weight rating.

Use the following chart to determine how much the vehicle can weigh, based upon the vehicle model and options.
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<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Axle Ratio</th>
<th>Maximum Trailer Weight</th>
<th>GCWR*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yukon Denali 2WD</td>
<td>3.23/3.42</td>
<td>3,810 kg (8,400 lb)</td>
<td>6,350 kg (14,000 lb)</td>
</tr>
<tr>
<td>Yukon Denali AWD</td>
<td>3.23/3.42</td>
<td>3,674 kg (8,100 lb)</td>
<td>6,350 kg (14,000 lb)</td>
</tr>
<tr>
<td>Yukon XL Denali 2WD</td>
<td>3.23/3.42</td>
<td>3,674 kg (8,100 lb)</td>
<td>6,350 kg (14,000 lb)</td>
</tr>
<tr>
<td>Yukon XL Denali AWD</td>
<td>3.23/3.42</td>
<td>3,583 kg (7,900 lb)</td>
<td>6,350 kg (14,000 lb)</td>
</tr>
</tbody>
</table>

*The Gross Combination Weight Rating (GCWR) is the total allowable weight of the completely loaded vehicle and trailer including any passengers, cargo, equipment, and conversions. The GCWR for the vehicle should not be exceeded.

Ask your dealer for trailering information or advice.

Weight of the Trailer Tongue
The tongue load (1) of any trailer is very important because it is also part of the vehicle weight. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo carried in it, and the people who will be riding in the vehicle as well as trailer tongue weight. Vehicle options, equipment, passengers, and cargo in the vehicle reduce the amount of tongue weight the vehicle can carry, which will also reduce the trailer weight the vehicle can tow. See Vehicle Load Limits 194 for more information about the vehicle's maximum load capacity.

Trailer tongue weight (1) should be 10% to 15% of the loaded trailer weight (2) up to the maximums for vehicle series and hitch type.
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<table>
<thead>
<tr>
<th>Vehicle Series</th>
<th>Hitch Type</th>
<th>Maximum Tongue Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1500</td>
<td>Weight Carrying</td>
<td>272 kg (600 lb)</td>
</tr>
<tr>
<td>1500</td>
<td>Weight Distributing</td>
<td>453 kg (1,000 lb)</td>
</tr>
</tbody>
</table>

Do not exceed the maximum allowable tongue weight for the vehicle. Choose the shortest hitch extension that will position the hitch ball closest to the vehicle. This will help reduce the effect of trailer tongue weight on the rear axle.

Trailer rating may be limited by the vehicle's ability to carry tongue weight. Tongue weight cannot cause the vehicle to exceed the GVWR (Gross Vehicle Weight Rating) or the RGAWR (Rear Gross Axle Weight Rating). See “Total Weight on the Vehicle’s Tires” following.

After loading the trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, adjustments might be made by moving some items around in the trailer.

If a cargo carrier is used in the trailer hitch receiver, choose a carrier that positions the load as close to the vehicle as possible. Make sure the total weight, including the carrier, is no more than half of the maximum allowable tongue weight for the vehicle or 227 kg (500 lb), whichever is less.

**Total Weight on the Vehicle’s Tires**

Be sure the vehicle’s tires are inflated to the inflation pressures found on the Certification label on the center pillar or see Vehicle Load Limits 194. Make sure not to exceed the GVWR limit for the vehicle, or the RGAWR, with the tow vehicle and trailer fully loaded for the trip including the weight of the trailer tongue. If using a weight-distributing hitch, make sure not to exceed the RGAWR before applying the weight distribution spring bars.

**Weight of the Trailering Combination**

It is important that the combination of the tow vehicle and trailer does not exceed any of its weight ratings — GCWR, GVWR, RGAWR, Trailer Weight Rating, or Tongue Weight. The only way to be sure it is not exceeding any of these ratings is to weigh the tow vehicle and trailer combination, fully loaded for the trip, getting individual weights for each of these items.

**Towing Equipment**

**Hitches**

The correct hitch equipment helps maintain combination control. Most small-to-medium trailers can be towed with a weight-carrying hitch which simply features a coupler latched to the hitch ball. Larger trailers may require a weight-distributing hitch that uses spring bars to distribute the trailer load.
Driving and Operating

When using a weight-distributing hitch, the spring bars should be adjusted so the distance (2) is the same after coupling the trailer to the tow vehicle and adjusting the hitch.

Safety Chains
Always attach chains between the vehicle and the trailer. Cross the safety chains under the tongue of the trailer to help prevent the tongue from contacting the road if it becomes separated from the hitch. Instructions about safety chains may be provided by the hitch manufacturer or by the trailer manufacturer. If the trailer being towed weighs up to 2,271 kg (5,000 lb) with a factory-installed step bumper, safety chains may be attached to the attaching points on the bumper, otherwise, safety chains should be attached to holes on the trailer hitch platform. Always leave just enough slack so the combination can turn. Never allow safety chains to drag on the ground.

Trailer Brakes
A loaded trailer that weighs more than 900 kg (2,000 lb) needs to have its own brake system that is adequate for the weight of the trailer. Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted, and maintained properly.

Since the vehicle is equipped with StabiliTrak, the trailer brakes cannot tap into the vehicle's hydraulic system.

Trailer Wiring Harness
The seven-pin trailer connector is mounted in the bumper. This connector can be plugged into a seven-pin universal heavy-duty trailer connector available through your dealer.

The seven-wire harness contains the following trailer circuits:
- Yellow: Left Stop/Turn Signal
- Green/Violet: Right Stop/Turn Signal
- Brown: Taillamps
Driving and Operating

• White: Ground
• Light Green: Back-up Lamps
• Red/Green: Battery Feed
• Dark Blue: Trailer Brake

If charging a remote (non-vehicle) battery, press the Tow/Haul mode button at the end of the shift lever. This will boost the vehicle system voltage and properly charge the battery. If the trailer is too light for Tow/Haul mode, turn on the headlamps as a second way to boost the vehicle system and charge the battery.

**Electric Brake Control Wiring Provisions**

These wiring provisions are included with the vehicle as part of the trailer wiring package. These provisions are for an electric brake controller.

The harness should be installed by your dealer or a qualified service center.

**Tow/Haul Mode**

Pressing this button at the end of the shift lever turns on and off the Tow/Haul Mode.

This indicator light on the instrument cluster comes on when the Tow/Haul Mode is on.

Tow/Haul is a feature that assists when pulling a heavy trailer or a large or heavy load. See Tow/Haul Mode 212.

Tow/Haul is designed to be most effective when the vehicle and trailer combined weight is at least 75 percent of the vehicle’s Gross Combined Weight Rating (GCWR). See “Weight of the Trailer” under Trailer Towing 248. Tow/Haul is most useful under the following driving conditions:

- When pulling a heavy trailer or a large or heavy load through rolling terrain.
- When pulling a heavy trailer or a large or heavy load in stop-and-go traffic.
- When pulling a heavy trailer or a large or heavy load in busy parking lots where improved low speed control of the vehicle is desired.

Operating the vehicle in Tow/Haul when lightly loaded or with no trailer at all will not cause damage. However, there is no benefit to the
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The selection of Tow/Haul when the vehicle is unloaded. Such a selection when unloaded may result in unpleasant engine and transmission driving characteristics and reduced fuel economy. Tow/Haul is recommended only when pulling a heavy trailer or a large or heavy load.

Integrated Trailer Brake Control System

The vehicle may have an Integrated Trailer Brake Control (ITBC) system for use with electric trailer brakes or most electric-over-hydraulic trailer brakes.

This symbol is on the Trailer Brake Control Panel on vehicles with an ITBC system. The power output to the trailer brakes is based on the amount of brake pressure being applied by the vehicle’s brake system, and on the type of trailer brakes detected. This available power output to the trailer brakes can be adjusted to a wide range of trailering situations.

The ITBC system is integrated with the vehicle’s brake, antilock brake, and StabiliTrak systems. In trailering conditions that cause the vehicle’s antilock brake or StabiliTrak systems to activate, power sent to the trailer’s brakes will be automatically adjusted to minimize trailer wheel lock-up. This does not imply that the trailer has StabiliTrak.

If the vehicle’s brake, antilock brake, or StabiliTrak systems are not functioning properly, the ITBC system may not be fully functional or may not function at all. Make sure all of these systems are fully operational to ensure full functionality of the ITBC system.

The ITBC system is powered through the vehicle’s electrical system. Turning the ignition off will also turn off the ITBC system. The ITBC system is fully functional only when the ignition is in ON/RUN.

⚠️ Warning

Connecting a trailer that has an air brake system may result in reduced or complete loss of trailer braking. There may be an increase in stopping distance or trailer instability which could result in personal injury or damage to the vehicle, trailer, or other property. Use the ITBC system only with electric or electric over hydraulic trailer brakes.
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Trailer Brake Control Panel

1. Manual Trailer Brake Apply Lever
2. Trailer Gain Adjustment Buttons

The ITBC system has a control panel on the instrument panel to the left of the steering column. The control panel allows adjustment to the amount of output, referred to as Trailer Gain, available to the trailer brakes and allows manual application of the trailer brakes. The Trailer Brake Control Panel is used along with the Trailer Brake Display Page on the DIC to adjust and display power output to the trailer brakes.

Trailer Brake DIC Display Page

The ITBC system displays messages in the Driver Information Center (DIC).

The display page indicates Trailer Gain setting, power output to the trailer brakes, trailer connection, and system operational status.

To display the Trailer Brake Display Page do any of the following:

- Scroll through the DIC menu pages.
- Press a Trailer Gain button. If the Trailer Brake Display Page is not currently displayed, press a Trailer Gain button to recall the current Trailer Gain setting.
- Each press and release of the gain buttons will then change the Trailer Gain setting.
- Activate the Manual Trailer Brake apply lever.

TRAILER GAIN: This setting can be adjusted from 0.0 to 10.0 with either a trailer connected or disconnected. To adjust the Trailer Gain, press one of the Trailer Gain adjustment buttons. Press and hold a gain button to continuously adjust the Trailer Gain. To turn the output to the trailer off, adjust the Trailer Gain setting to 0.0 (zero).

TRAILER OUTPUT: Displays any time a trailer with electric brakes is connected. Output to the trailer brakes is based on the amount of vehicle braking present and relative to the Trailer Gain setting. Output is displayed from 0 to 100% for each gain setting.

The Trailer Output will indicate “- - - - - - -” on the Trailer Brake Display Page whenever the following occur:

- No trailer is connected.
- A trailer without electric brakes is connected (no DIC message displayed).
Driving and Operating

- A trailer with electric brakes has become disconnected (a CHECK TRAILER WIRING message will also display on the DIC).
- There is a fault present in the wiring to the trailer brakes (a CHECK TRAILER WIRING message will also display on the DIC).
- The ITBC system is not working due to a fault (a SERVICE TRAILER BRAKE SYSTEM message will also display in the DIC).

Manual Trailer Brake Apply
The Manual Trailer Brake Apply Lever is used to apply the trailer’s electric brakes independent of the vehicle’s brakes. Sliding the lever to the left will apply only the trailer brakes. Use this lever to adjust Trailer Gain to properly adjust the power output to the trailer brakes.

The trailer’s and the vehicle’s brake lamps will come on when either vehicle brakes or manual trailer brakes are applied.

Trailer Gain Adjustment Procedure
Trailer Gain should be set for a specific trailering condition and must be adjusted any time vehicle loading, trailer loading, or road surface conditions change.

⚠️ Warning
Trailer brakes that are over-gained or under-gained may not stop the vehicle and the trailer as intended and can result in a crash. Always follow the instructions to set the Trailer Gain for the proper trailer stopping performance.

Use the following to adjust Trailer Gain for each towing condition:
1. Drive the vehicle with the trailer attached on a level road surface representative of the towing condition and free of traffic at about 32 to 40 km/h (20 to 25 mph) and fully apply the Manual Trailer Brake apply lever.

Adjusting Trailer Gain at speeds lower than 32 to 40 km/h (20 to 25 mph) may result in an incorrect gain setting.

2. Adjust the Trailer Gain, using the Trailer Gain adjustment buttons, to just below the point of trailer wheel lock-up, indicated by trailer wheel squeal or tire smoke when a trailer wheel locks.

Trailer wheel lock-up may not occur if towing a heavily loaded trailer. In this case, adjust the Trailer Gain to the highest allowable setting for the towing condition.

3. Readjust Trailer Gain any time vehicle loading, trailer loading, or road surface conditions change or if trailer wheel lock-up is noticed at any time while towing.
Other ITBC-Related DIC Messages

In addition to displaying TRAILER GAIN and OUTPUT through the DIC, trailer connection and ITBC system status are displayed on the DIC.

TRAILER CONNECTED: This message will briefly display when a trailer with electric brakes is first connected to the vehicle. This message will automatically turn off in about 10 seconds. This message can be acknowledged before it automatically turns off.

CHECK TRAILER WIRING: This message will display if:

- The ITBC system first determines connection to a trailer with electric brakes and then the trailer harness becomes disconnected from the vehicle.

If the disconnect occurs while the vehicle is moving, this message will continue until the ignition is turned off. This message will also turn off if it is acknowledged or if the trailer harness is reconnected.

- There is an electrical fault in the wiring to the trailer brakes. This message will continue as long as there is an electrical fault in the trailer wiring. This message will also turn off if it is acknowledged.

To determine if the electrical fault is on the vehicle side or trailer side of the trailer wiring harness connection:

1. Disconnect the trailer wiring harness from the vehicle.
2. Turn the ignition off.
3. Wait 10 seconds, then turn the ignition back to RUN.
4. If the CHECK TRAILER WIRING message reappears, the electrical fault is on the vehicle side.

If the CHECK TRAILER WIRING message only reappears when connecting the trailer wiring harness to the vehicle, the electrical fault is on the trailer side.

SERVICE TRAILER BRAKE SYSTEM: This message will display when there is a problem with the ITBC system. If this message continues over multiple ignition cycles, there is a problem with the ITBC system. Have the vehicle serviced.

If either the CHECK TRAILER WIRING or SERVICE TRAILER BRAKE SYSTEM message displays while driving, the ITBC system may not be fully functional or may not function at all. When traffic conditions allow, carefully pull the vehicle over to the side of the road and turn the ignition off. Check the wiring connection to the trailer and turn the ignition back on. If either of these messages continues, either the vehicle or trailer needs service.
Driving and Operating

A GM dealer may be able to diagnose and repair problems with the trailer. However, any diagnosis and repair of the trailer is not covered under the vehicle warranty. Contact your trailer dealer for assistance with trailer repairs and trailer warranty information.

**Trailer Sway Control (TSC)**

Vehicles with StabiliTrak have a TSC feature. Trailer sway is unintended side-to-side motion of a trailer while being towed. If the vehicle is towing a trailer and the TSC detects that sway is increasing, the vehicle brakes are selectively applied at each wheel, to help reduce excessive trailer sway. If the vehicle is equipped with the Integrated Trailer Brake Control (ITBC) system, and the trailer has the electric actuated brake system, StabiliTrak may also apply the trailer brakes.

If TSC is enabled, the Traction Control System (TCS)/StabiliTrak warning light will flash on the instrument cluster. Vehicle speed must be reduced. If trailer sway continues, StabiliTrak can reduce engine torque to help slow the vehicle. See Traction Control/ Electronic Stability Control \(\triangleright\) 218.

**Warning**

Even if the vehicle is equipped with TSC, trailer sway could result in loss of control and the vehicle could crash. If excessive trailer sway is detected, slow down to a safe speed. Check the trailer and vehicle to help correct possible causes. These could include an improperly or overloaded trailer, unrestrained cargo, improper trailer hitch configuration, excessive vehicle-trailer speed, or improperly inflated or incorrect vehicle or trailer tires. See Towing Equipment \(\triangleright\) 251 for trailer ratings and hitch setup recommendations.

Adding non-dealer accessories can affect the vehicle performance. See Accessories and Modifications \(\triangleright\) 262.
### Conversions and Add-Ons

#### Add-On Electrical Equipment

<table>
<thead>
<tr>
<th><strong>Warning</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>The Data Link Connector (DLC) is used for vehicle service and Emission Inspection/Maintenance testing. See <em>Malfunction Indicator Lamp (Check Engine Light)</em> ( \diamond 129 ). A device connected to the Data Link Connector (DLC)—such as an aftermarket fleet or driver-behavior tracking device—may interfere with vehicle systems. This could affect vehicle operation and cause a crash. Such devices may also access information stored in the vehicle’s systems.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Caution</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Some electrical equipment can damage the vehicle or cause components to not work and would not be covered by the warranty. Always check with your dealer before adding electrical equipment.</td>
</tr>
</tbody>
</table>

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* \( \diamond 84 \) and *Adding Equipment to the Airbag-Equipped Vehicle* \( \diamond 84 \).
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Vehicle Care

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General Information
For service and parts needs, visit your dealer. You will receive genuine GM parts and GM-trained and supported service people.

Genuine GM parts have one of these marks:

California Proposition 65 Warning

WARNING: Most motor vehicles, including this one, contain and/or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems, many fluids, and some component wear by-products contain and/or emit these chemicals.

See Battery - North America 278 and Jump Starting - North America 326.

California Perchlorate Materials Requirements

Certain types of automotive applications, such as airbag initiators, safety belt pretensioners, and lithium batteries contained in Remote Keyless Entry transmitters, may contain perchlorate materials. Special handling may be necessary. For additional information, see www.dtsc.ca.gov/hazardouswaste/perchlorate.
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Accessories and Modifications
Adding non-dealer accessories or making modifications to the vehicle can affect vehicle performance and safety, including such things as airbags, braking, stability, ride and handling, emissions systems, aerodynamics, durability, and electronic systems like antilock brakes, traction control, and stability control. These accessories or modifications could even cause malfunction or damage not covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorize the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see Adding Equipment to the Airbag-Equipped Vehicle  84.

Vehicle Checks

Doing Your Own Service Work

⚠️ Warning

It can be dangerous to work on your vehicle if you do not have the proper knowledge, service manual, tools, or parts. Always follow owner manual procedures and consult the service manual for your vehicle before doing any service work.

If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can. To order the proper service manual, see Service Publications Ordering Information  369.
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. See *Maintenance Records* 356.

<table>
<thead>
<tr>
<th>Caution</th>
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</thead>
<tbody>
<tr>
<td>Even small amounts of contamination can cause damage to vehicle systems. Do not allow contaminants to contact the fluids, reservoir caps, or dipsticks.</td>
</tr>
</tbody>
</table>

**Hood**

To open the hood:

1. Pull the handle with this symbol on it. It is inside the vehicle under the steering wheel.

2. Go to the front of the vehicle to find the secondary hood release. The handle is under the front edge of the hood near the center. Push the handle to the right and at the same time raise the hood.

Before closing the hood, be sure all the filler caps are on properly. Then bring the hood from full open to within 15 cm (6 in) from the closed position, pause, and push the front center of the hood with a swift, firm motion to fully close the hood.
Vehicle Care

Engine Compartment Overview
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2. Battery - North America 278.


4. Engine Air Cleaner/Filter 269.


7. Engine Oil Fill Cap. See “When to Add Engine Oil” under Engine Oil 265.

8. Engine Oil Dipstick. See “Checking Engine Oil” under Engine Oil 265.


11. Engine Compartment Fuse Block 288.

Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Always use engine oil approved to the proper specification and of the proper viscosity grade. See “Selecting the Right Engine Oil” in this section.

- Check the engine oil level regularly and maintain the proper oil level. See “Checking Engine Oil” and “When to Add Engine Oil” in this section.

- Change the engine oil at the appropriate time. See Engine Oil Life System 267.

- Always dispose of engine oil properly. See “What to Do with Used Oil” in this section.

Checking Engine Oil

If equipped, the ENGINE OIL LOW ADD OIL message displays when the engine oil level may be too low. See Engine Oil Messages 146. Check the oil level before filling to the recommended level. If the oil is not low and this message remains on, see your dealer.

It is also a good idea to check the engine oil level at each fuel fill. In order to get an accurate reading, the vehicle must be on level ground. The engine oil dipstick handle is a loop. See Engine Compartment Overview 264 for the location of the engine oil dipstick.

Obtaining an accurate oil level reading is essential:

1. If the engine has been running recently, turn off the engine and allow several minutes for the oil to drain back into the oil pan. Checking the oil level too soon after engine shutoff will not provide an accurate oil level reading.
266 Vehicle Care

⚠️ Warning

The engine oil dipstick handle may be hot; it could burn you. Use a towel or glove to touch the dipstick handle.

2. Pull out the dipstick and wipe it with a clean paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.

When to Add Engine Oil

If the oil is below the cross-hatched area at the tip of the dipstick, add 1 L (1 qt) of the recommended oil and then recheck the level. See

“Selecting the Right Engine Oil” in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see Capacities and Specifications 358.

Caution

Do not add too much oil. Oil levels above or below the acceptable operating range shown on the dipstick are harmful to the engine. If you find that you have an oil level above the operating range, i.e., the engine has so much oil that the oil level gets above the cross-hatched area that shows the proper operating range, the engine could be damaged. You should drain out the excess oil or limit driving of the vehicle and seek a service professional to remove the excess amount of oil.

Add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when through.

Selecting the Right Engine Oil

Selecting the right engine oil depends on both the proper oil specification and viscosity grade. See Recommended Fluids and Lubricants 353.

Specification

Ask for and use engine oils that meet the dexos1™ specification.

Engine oils that have been approved by GM as meeting the dexos1 specification are marked with the dexos1 approved logo. See www.gmdexos.com.
**Vehicle Care 267**

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure to use the recommended engine oil can result in engine damage not covered by the vehicle warranty. Check with your dealer or service provider on whether the oil is approved to the dexos1 specification.</td>
</tr>
</tbody>
</table>

**Viscosity Grade**

Use SAE 0W-20 viscosity grade engine oil.

When selecting an oil of the appropriate viscosity grade, always select an oil of the correct specification. See “Specification” earlier in this section for more information.

**Engine Oil Additives/Engine Oil Flushes**

Do not add anything to the oil. The recommended oils meeting the dexos1 specification are all that is needed for good performance and engine protection.

Engine oil system flushes are not recommended and could cause engine damage not covered by the vehicle warranty.

**What to Do with Used Oil**

Used engine oil contains certain elements that can be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer’s warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the trash or pouring it on the ground, into sewers, or into streams or bodies of water. Recycle it by taking it to a place that collects used oil.

**Engine Oil Life System**

**When to Change Engine Oil**

This vehicle has a computer system that indicates when to change the engine oil and filter. This is based on a combination of factors which include engine revolutions, engine temperature, and miles driven. Based on driving conditions, the mileage at which an oil change is indicated can vary considerably. For the oil life system to work properly, the system must be reset every time the oil is changed.

When the system has calculated that oil life has been diminished, a CHANGE ENGINE OIL SOON message comes on to indicate that an oil change is necessary. See Engine Oil Messages 146.

Change the oil as soon as possible within the next 1 000 km (600 mi). It is possible that, if driving under the best conditions, the oil life system may indicate that an oil change is not necessary for up to a year. The engine oil and filter must be changed at least once a year and, at this time, the system must
Vehicle Care

be reset. Your dealer has trained service people who will perform this work and reset the system. It is also important to check the oil regularly over the course of an oil drain interval and keep it at the proper level.

If the system is ever reset accidentally, the oil must be changed at 5,000 km (3,000 mi) since the last oil change. Remember to reset the oil life system whenever the oil is changed.

How to Reset the Engine Oil Life System

Reset the system whenever the engine oil is changed so that the system can calculate the next engine oil change. Always reset the engine oil life to 100% after every oil change. It will not reset itself. To reset the engine oil life system:

1. Display the REMAINING OIL LIFE on the DIC. See Driver Information Center (DIC) \(\Rightarrow\) 137.
2. Press and hold \(\checkmark\). The oil life will change to 100%.

The oil life system can also be reset as follows:

1. Turn the ignition to ON/RUN with the engine off.
2. Fully press the accelerator pedal slowly three times within five seconds.
3. Display the REMAINING OIL LIFE on the DIC. If the display shows 100%, the system is reset.

If the CHANGE ENGINE OIL SOON message comes back on when the vehicle is started and/or the REMAINING OIL LIFE is near 0%, the engine oil life system has not been reset. Repeat the procedure.

Automatic Transmission Fluid

When to Check and Change Automatic Transmission Fluid

It is usually not necessary to check the transmission fluid level. The only reason for fluid loss is a transmission leak or overheated transmission. This vehicle is not equipped with a transmission fluid level dipstick. There is a special procedure for checking and changing the transmission fluid in these vehicles. Because this procedure is difficult, this should be done at the dealer. Contact the dealer for additional information or the procedure can be found in the service manual. See Service Publications Ordering Information \(\Rightarrow\) 369.

Caution

Use of the incorrect automatic transmission fluid may damage the vehicle, and the damage may not be covered by the vehicle warranty. Always use the automatic transmission fluid listed in Recommended Fluids and Lubricants \(\Rightarrow\) 353.

Change the fluid and filter at the scheduled maintenance intervals listed in Maintenance Schedule \(\Rightarrow\) 344. Be sure to use the
transmission fluid listed in
Recommended Fluids and Lubricants 353.

**Engine Air Cleaner/Filter**

See *Engine Compartment Overview* 264 for the location of the engine air cleaner/filter.

**When to Inspect the Engine Air Cleaner/Filter**

For intervals on changing and inspecting the engine air cleaner/filter, see *Maintenance Schedule* 344.

**How to Inspect the Engine Air Cleaner/Filter**

Do not start the engine or have the engine running with the engine air cleaner/filter housing open. Before removing the engine air cleaner/filter, make sure that the engine air cleaner/filter housing and nearby components are free of dirt and debris. Remove the engine air cleaner/filter. Lightly tap and shake the engine air cleaner/filter (away from the vehicle), to release loose dust and dirt. Inspect the engine air cleaner/filter for damage, and replace if damaged. Do not clean the engine air cleaner/filter or components with water or compressed air.

To inspect or replace the engine air cleaner/filter:

1. Locate the air cleaner/filter assembly. See *Engine Compartment Overview* 264.

2. Disconnect the outlet duct by loosening the air duct clamp (3).

3. Disconnect the electrical connector (2) and the connector harness from the cover.

4. Remove the four screws (1) on top of the cover of the housing and lift up the cover.

5. Remove the engine air cleaner/filter from the housing. Take care to dislodge as little dirt as possible.

6. Clean the engine air cleaner/filter sealing surfaces and the housing.

7. Inspect or replace the engine air cleaner/filter.

8. Reverse Steps 2-4 to reinstall the filter cover housing.
270 Vehicle Care

⚠️ Warning

Operating the engine with the air cleaner/filter off can cause you or others to be burned. The air cleaner not only cleans the air; it helps to stop flames if the engine backfires. Use caution when working on the engine and do not drive with the air cleaner/filter off.

Caution

If the air cleaner/filter is off, dirt can easily get into the engine, which could damage it. Always have the air cleaner/filter in place when you are driving.

Cooling System

The cooling system allows the engine to maintain the correct working temperature.

⚠️ Warning

An electric engine cooling fan can start even when the engine is not running. To avoid injury, always keep hands, clothing, and tools away from any engine cooling fan.

Caution

Using coolant other than DEX-COOL® can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner. Any repairs would not be covered by the vehicle warranty. Always use DEX-COOL (silicate-free) coolant in the vehicle.

Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned. Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.
Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL® engine coolant. This coolant is designed to remain in the vehicle for 5 years or 240 000 km (150,000 mi), whichever occurs first.

The following explains the cooling system and how to check and add coolant when it is low. If there is a problem with engine overheating, see Engine Overheating 273.

What to Use

⚠️ Warning

Adding only plain water or some other liquid to the cooling system can be dangerous. Plain water and other liquids, can boil before the proper coolant mixture will. The coolant warning system is set for the proper coolant mixture. With plain water or the wrong mixture, the engine could get too hot but you would not get the overheat warning. The engine could catch fire and you or others could be burned. Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant.

Use a 50/50 mixture of clean, drinkable water and DEX-COOL coolant. If using this mixture, nothing else needs to be added. This mixture:

- Gives freezing protection down to −37 °C (−34 °F), outside temperature.
- Gives boiling protection up to 129 °C (265 °F), engine temperature.
- Protects against rust and corrosion.
- Will not damage aluminum parts.
- Helps keep the proper engine temperature.

Caution

If improper coolant mixture, inhibitors, or additives are used in the vehicle cooling system, the engine could overheat and be damaged. Too much water in the mixture can freeze and crack engine cooling parts. The repairs would not be covered by the vehicle warranty. Use only the proper mixture of engine coolant for the cooling system. See Recommended Fluids and Lubricants 353.

Never dispose of engine coolant by putting it in the trash, or by pouring it on the ground, or into sewers, streams, or bodies of water. Have the coolant changed by an authorized service center, familiar with legal requirements regarding used coolant disposal. This will help protect the environment and your health.
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Checking Coolant

The coolant surge tank is in the engine compartment on the passenger side of the vehicle. See Engine Compartment Overview 264.

The vehicle must be on a level surface when checking the coolant level.

Check to see if coolant is visible in the coolant surge tank. If the coolant inside the coolant surge tank is boiling, wait until it cools down. The coolant level should be at or above the FULL COLD mark. If it is not, there may be a leak in the cooling system.

If coolant is visible but the coolant level is not at or above the FULL COLD mark, see “How to Add Coolant to the Coolant Surge Tank,” following.

How to Add Coolant to the Coolant Surge Tank

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause the engine to overheat and be severely damaged.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Warning</th>
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<tbody>
<tr>
<td>You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.</td>
</tr>
</tbody>
</table>

You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.

If no coolant is visible in the surge tank, add coolant.
1. Remove the coolant surge tank pressure cap when the cooling system, including the coolant surge tank pressure cap and upper radiator hose, is no longer hot.

Turn the pressure cap slowly counterclockwise about one full turn. If a hiss is heard, wait for that to stop. A hiss means there is still some pressure left.

2. Keep turning the pressure cap slowly, and remove it.

3. Fill the coolant surge tank with the proper mixture to the FULL COLD mark.

4. With the coolant surge tank pressure cap off, start the engine and let it run until the engine coolant temperature gauge indicates approximately 90 °C (195 °F).

By this time, the coolant level inside the coolant surge tank may be lower. If the level is lower, add more of the proper mixture to the coolant surge tank until the level reaches the FULL COLD mark.

5. Replace the pressure cap tightly.

6. Verify coolant level after the engine is shut off and the coolant is cold. If necessary, repeat coolant fill procedure Steps 1-6.

Caution
If the pressure cap is not tightly installed, coolant loss and possible engine damage may occur. Be sure the cap is properly and tightly secured.

Engine Overheating

<table>
<thead>
<tr>
<th>Caution</th>
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</thead>
<tbody>
<tr>
<td>Running the engine without coolant may cause damage or a fire. Vehicle damage would not be covered by the vehicle warranty.</td>
</tr>
</tbody>
</table>

The vehicle has several indicators to warn of engine overheating.

There is a coolant temperature gauge in the vehicle's instrument cluster. See Engine Coolant Temperature Gauge 124.

In addition, there are ENGINE OVERHEATED STOP ENGINE, ENGINE OVERHEATED IDLE ENGINE, and ENGINE POWER IS REDUCED messages in the Driver Information Center (DIC). See Engine Cooling System Messages 146 and Engine Power Messages 147.

If the decision is made not to lift the hood when this warning appears, get service help right away.
274 Vehicle Care

If the decision is made to lift the hood, make sure the vehicle is parked on a level surface.

Check to see if the engine cooling fan(s) are running. If the engine is overheating, the fans should be running. If they are not, do not continue to run the engine, and have the vehicle serviced.

If Steam is Coming from the Engine Compartment

⚠️ Warning
Steam from an overheated engine can burn you badly, even if you just open the hood. Stay away from the engine if you see or hear steam coming from it. Just turn it off and get everyone away from the vehicle until it cools down. Wait until there is no sign of steam or coolant before you open the hood.

If you keep driving when the engine is overheated, the liquids in it can catch fire. You or others could be badly burned. Stop the engine if it overheats, and get out of the vehicle until the engine is cool.

If No Steam is Coming from the Engine Compartment

The ENGINE OVERHEATED STOP ENGINE or the ENGINE OVERHEATED IDLE ENGINE message, along with a low coolant condition, can indicate a serious problem.

If there is an engine overheat warning, but no steam is seen or heard, the problem may not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day.
- Stops after high-speed driving.
- Idles for long periods in traffic.
- Tows a trailer; see Trailer Towing. 248.

If the ENGINE OVERHEATED STOP ENGINE or the ENGINE OVERHEATED IDLE ENGINE message appears with no sign of steam, try this for a minute or so:

1. Turn the air conditioning off.
2. Turn the heater on to the highest temperature and to the highest fan speed. Open the windows as necessary.
3. When it is safe to do so, pull off the road, shift to P (Park) or N (Neutral), and let the engine idle.

If the temperature overheat gauge is no longer in the overheat zone or an overheat warning no longer displays, the vehicle can be driven. Continue to drive the vehicle slowly for about 10 minutes. Keep a safe vehicle distance from the vehicle in front. If the warning does not come back on, continue to drive normally and have the cooling system checked for proper fill and function.

If the warning continues, pull over, stop, and park the vehicle right away.
If there is still no sign of steam and the vehicle is equipped with an engine driven cooling fan, push down the accelerator until the engine speed is about twice as fast as normal idle speed for at least five minutes while the vehicle is parked. If the warning is still there, turn off the engine and get everyone out of the vehicle until it cools down.

If there is no sign of steam, idle the engine for five minutes while parked. If the warning is still displayed, turn off the engine until it cools down.

**Engine Fan**

If the vehicle has electric cooling fans, the fans may be heard spinning at low speed during most everyday driving. The fans may turn off if no cooling is required. Under heavy vehicle loading, trailer towing, high outside temperatures, or operation of the air conditioning system, the fans may change to high speed and an increase in fan noise may be heard. This is normal and indicates that the cooling system is functioning properly. The fans will change to low speed when additional cooling is no longer required.

The electric engine cooling fans may run after the engine has been turned off. This is normal and no service is required.

**Washer Fluid**

**What to Use**

When windshield washer fluid needs to be added, be sure to read the manufacturer’s instructions before use. Use a fluid that has sufficient protection against freezing in an area where the temperature may fall below freezing.

**Adding Washer Fluid**

The vehicle has a low washer fluid message on the DIC that comes on when the washer fluid is low. The message is displayed for 15 seconds at the start of each ignition cycle. When the WASHER FLUID LOW ADD FLUID message displays, washer fluid will need to be added to the windshield washer fluid reservoir.

Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview* for reservoir location.

---

**Caution**

- Do not use washer fluid that contains any type of water repellent coating. This can cause the wiper blades to chatter or skip.
- Do not use engine coolant (antifreeze) in the windshield washer. It can damage the windshield washer system and paint.

(Continued)
276 Vehicle Care

Caution (Continued)

- Do not mix water with ready-to-use washer fluid. Water can cause the solution to freeze and damage the washer fluid tank and other parts of the washer system.
- When using concentrated washer fluid, follow the manufacturer instructions for adding water.
- Fill the washer fluid tank only three-quarters full when it is very cold. This allows for fluid expansion if freezing occurs, which could damage the tank if it is completely full.

Brakes

Disc brake pads have built-in wear indicators that make a high-pitched warning sound when the brake pads are worn and new pads are needed. The sound can come and go or be heard all the time when the vehicle is moving, except when applying the brake pedal firmly.

⚠️ Warning

The brake wear warning sound means that soon the brakes will not work well. That could lead to a crash. When the brake wear warning sound is heard, have the vehicle serviced.

⚠️ Caution

Continuing to drive with worn-out brake pads could result in costly brake repair.

Some driving conditions or climates can cause a brake squeal when the brakes are first applied or lightly applied. This does not mean something is wrong with the brakes. Properly torqued wheel nuts are necessary to help prevent brake pulsation. When tires are rotated, inspect brake pads for wear and evenly tighten wheel nuts in the proper sequence to torque specifications. See Capacities and Specifications 358.

Brake pads should be replaced as complete sets.

Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign that brake service may be required.

Replacing Brake System Parts

Always replace brake system parts with new, approved replacement parts. If this is not done, the brakes may not work properly. The braking performance expected can change in many other ways if the wrong replacement brake parts are installed or parts are improperly installed.
Brake Fluid

The brake master cylinder reservoir is filled with DOT 3 brake fluid. See Engine Compartment Overview \(\Rightarrow\) 264 for the location of the 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 \(\Rightarrow\) 130.

Brake fluid absorbs water over time. Replace brake fluid at the specified intervals to prevent increased stopping distance. See Maintenance Schedule \(\Rightarrow\) 344.

Checking Brake Fluid

Check brake fluid by looking at the brake fluid reservoir. See Engine Compartment Overview \(\Rightarrow\) 264.

The fluid level should be above MIN. If it is not, have the brake hydraulic system checked to see if there is a leak.

After work is done on the brake hydraulic system, make sure the level is above MIN but not over the MAX mark.
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What to Add

Use only GM approved DOT 3 brake fluid from a clean, sealed container. See Recommended Fluids and Lubricants 353.

⚠️ 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 brake fluid.

⚠️ Warning

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Batteries also contain other chemicals known to the State of California to cause cancer. WASH HANDS AFTER HANDLING. See California Proposition 65 Warning 261.

Battery - North America

The original equipment battery is maintenance free. Do not remove the cap and do not add fluid.

Refer to the replacement number shown on the original battery label when a new battery is needed. See Engine Compartment Overview 264 for battery location.

Vehicle Storage

⚠️ Warning

Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you are not careful. See Jump Starting - North America 326 for tips on working around a battery without getting hurt.

Infrequent Usage: Remove the black, negative (−) cable from the battery to keep the battery from running down.

Extended Storage: Remove the black, negative (−) cable from the battery or use a battery trickle charger.

Four-Wheel Drive

Transfer Case

When to Check Lubricant

Refer to Maintenance Schedule 344 to determine when to check the lubricant.
How to Check Lubricant

Automatic Transfer Case

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 (1) hole, located on the transfer case, some lubricant will need to be added. Add enough lubricant to raise the level to the bottom of the fill plug (1) hole. Use care not to overtighten the plug.

When to Change Lubricant

Refer to Maintenance Schedule ☰ 344 to determine how often to change the lubricant.

What to Use

Refer to Recommended Fluids and Lubricants ☰ 353 to determine what kind of lubricant to use.

Front Axle

When to Check and Change Lubricant

It is not necessary to regularly check front axle fluid unless a leak is suspected, or an unusual noise is heard. A fluid loss could indicate a problem. Have it inspected and repaired.

How to Check Lubricant

To get an accurate reading, the vehicle should be on a level surface.

1. Fill Plug
2. Drain Plug

• When the differential is cold, add enough lubricant to raise the level from 0 mm (0 in) to 3.2 mm (1/8 in) below the fill plug (1) hole.
• When the differential is at operating temperature (warm), add enough lubricant to raise the level to the bottom of the fill plug (1) hole.

What to Use

Refer to Recommended Fluids and Lubricants ☰ 353 to determine what kind of lubricant to use.
280 Vehicle Care

Rear Axle

When to Check Lubricant
It is not necessary to regularly check rear axle fluid unless a leak is suspected or an unusual noise is heard. A fluid loss could indicate a problem. Have it inspected and repaired.

All axle assemblies are filled by volume of fluid during production. They are not filled to reach a certain level. When checking the fluid level on any axle, variations in the readings can be caused by factory fill differences between the minimum and the maximum fluid volume. Also, if a vehicle has just been driven before checking the fluid level, it may appear lower than normal because fluid has traveled out along the axle tubes and has not drained back to the sump area. Therefore, a reading taken five minutes after the vehicle has been driven will appear to have a lower fluid level than a vehicle that has been stationary for an hour or two. The rear axle assembly must be supported on a flat, level surface to get a true reading.

How to Check Lubricant
To get an accurate reading, the vehicle should be on a level surface.

The proper level is 1.0 mm to 19.0 mm (0.04 in to 0.7 in) below the bottom of the fill hole, located on the rear axle. Add only enough fluid to reach the proper level.

What to Use
Refer to Recommended Fluids and Lubricants to determine what kind of lubricant to use.

Noise Control System

Noise Emission Warranty
General Motors warrants to the first person who purchases this vehicle for purposes other than resale and to each subsequent purchaser that this vehicle as manufactured by General Motors was designed, built and equipped to conform at the time it left General Motors control with all applicable U.S. EPA Noise Control Regulations. This warranty covers this vehicle as designed, built and equipped by General Motors and is not limited to any particular part, component or system of the vehicle manufactured by General Motors. Defects in design, assembly or any part, component or system of the vehicle manufactured by General Motors, which at the time it left General Motors control caused
noise emissions to exceed Federal standards, are covered by the warranty for the life of the vehicle.

The following information relates to compliance with federal noise emission standards for vehicles with a Gross Vehicle Weight Rating (GVWR) of more than 4,536 kg (10,000 lbs). The Maintenance Schedule provides information on maintaining the noise control system to minimize degradation of the noise emission control system during the life of the vehicle. The noise control system warranty is given in the vehicle warranty booklet.

These standards apply only to vehicles sold in the United States. Federal law prohibits the following acts or the causing thereof:

1. The removal or rendering inoperative by any person, other than for purposes of maintenance, repair or replacement, of any device or element of design incorporated into any new vehicle for the purpose of noise control, prior to its sale or delivery to the ultimate purchaser or while it is in use; or

2. The use of the vehicle after such device or element of design has been removed or rendered inoperative by any person.

Among those acts presumed to constitute tampering are the acts listed below.

**Insulation:**
Removal of the noise shields or any underhood insulation.

**Engine:**
Removal or rendering engine speed governor, if the vehicle has one, inoperative so as to allow engine speed to exceed manufacturer specifications.

**Fan and Drive:**
- Removal of fan clutch, if the vehicle has one, or rendering clutch inoperative.
- Removal of the fan shroud, if the vehicle has one.

**Air Intake:**
- Removal of the air cleaner silencer.
- Modification of the air cleaner.

**Exhaust:**
- Removal of the muffler and/or resonator.
- Removal of the exhaust pipes and exhaust pipe clamps.

**Starter Switch Check**

⚠️ **Warning**
When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle.
2. Apply both the parking brake and the regular brake.
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Do not use the accelerator pedal, and be ready to turn off the engine immediately if it starts.

3. Try to start the engine in each gear. The vehicle should start only in P (Park) or N (Neutral). If the vehicle starts in any other position, contact your dealer for service.

**Automatic Transmission Shift Lock Control Function Check**

**Warning**

When you are doing this inspection, the vehicle could move suddenly. If the vehicle moves, you or others could be injured.

1. Before starting this check, be sure there is enough room around the vehicle. It should be parked on a level surface.

2. Apply the parking brake. Be ready to apply the regular brake immediately if the vehicle begins to move.

3. With the engine off, turn the ignition on, but do not start the engine. Without applying the regular brake, try to move the shift lever out of P (Park) with normal effort. If the shift lever moves out of P (Park), contact your dealer for service.

**Park Brake and P (Park) Mechanism Check**

**Warning**

When you are doing this check, the vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of the vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and the transmission in N (Neutral), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.

- To check the P (Park) mechanism's holding ability: With the engine running, shift to P (Park). Then release the parking brake followed by the regular brake.

Contact your dealer if service is required.

**Wiper Blade Replacement**

Windshield wiper blades should be inspected for wear or cracking.

For the proper type and size, see *Maintenance Replacement Parts* ☞ 354.
Vehicle Care

Front Wiper Blade Replacement
To replace the wiper blade assembly:

1. Pull the windshield wiper assembly away from the windshield.
2. Lift up on the latch in the middle of the wiper blade where the wiper arm attaches.
3. With the latch open, pull the wiper blade down toward the windshield far enough to release it from the J-hooked end of the wiper arm.
4. Remove the wiper blade. Allowing the wiper blade arm to touch the windshield when no wiper blade is installed could damage the windshield. Any damage that occurs would not be covered by the vehicle warranty. Do not allow the wiper blade arm to touch the windshield.
5. Reverse Steps 1–3 for wiper blade replacement.

Rear Wiper Blade Replacement
To replace the rear wiper blade:

1. Pull the wiper blade assembly away from the backglass.
2. Push the release lever (2) to disengage the hook and push the wiper arm (1) out of the blade assembly (3).
3. Push the new blade assembly securely in the wiper arm hook until the release lever clicks into place.
4. Return the wiper arm and blade assembly to the rest position on the glass.

Glass Replacement
If the windshield or front side glass must be replaced, see your dealer to determine the correct replacement glass.
Vehicle Care

Windshield Replacement

HUD System
The windshield is part of the HUD system. If the windshield must be replaced, get one that is designed for HUD or the HUD image may look out of focus.

Driver Assistance Systems
When a windshield replacement is needed and the vehicle is equipped with a front-looking camera sensor for the Driver Assistance Systems, the windshield must be installed according to GM specifications for these systems to work properly. If it is not, there may be unexpected behavior and/or messages from these systems. See Object Detection System Messages \( \Rightarrow 148 \).

Headlamp Aiming
Headlamp aim has been preset and should need no further adjustment. If the vehicle is damaged in a crash, the headlamp aim may be affected. If adjustment to the headlamps is necessary, see your dealer.

Bulb Replacement
For the proper type of replacement bulbs, see Replacement Bulbs \( \Rightarrow 287 \).
For any bulb-changing procedure not listed in this section, contact your dealer.

High Intensity Discharge (HID) Lighting

⚠️ Warning
The high intensity discharge lighting system operates at a very high voltage. If you try to service any of the system components, you could be seriously injured. Have your dealer or a qualified technician service them.

After an HID headlamp bulb has been replaced, the beam might be a slightly different shade than it was originally. This is normal.
**LED Lighting**

This vehicle has several LED lamps. For replacement of any LED lighting assembly, contact your dealer.

**Fog Lamps**

To replace the front fog lamp bulb:

1. Locate the fog lamp under the front bumper.
2. Disconnect the electrical connector from the fog lamp bulb assembly by pressing the connector release.
3. Turn the bulb counterclockwise to remove it from the housing.

**Back-Up Lamps**

To replace a back-up bulb:

1. Open the liftgate. See Liftgate 36.
2. Remove the taillamp closeout cover from the lamp assembly by pulling rearward from the top and bottom at the same time to unfasten the snap tabs.
3. Remove the two screws from the taillamp assembly.
4. Pull the taillamp assembly straight back to remove.
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5. Turn the bulb socket counterclockwise to remove it from the taillamp assembly.

6. Pull the bulb straight out from the socket.

7. Press a new bulb into the socket, insert it into the taillamp assembly, and turn the bulb socket clockwise until it clicks.

8. Reinstall the taillamp assembly and tighten the screws.

9. Reinstall the taillamp cover by snapping it into place.

License Plate Lamp

Passenger Side Shown, Driver Side Similar

1. Bulb Socket

2. Bulb

3. Lamp Assembly

To replace one of these bulbs:

1. Push the lamp assembly (3) toward the center of the vehicle.

2. Pull the lamp assembly down to remove.

3. Turn the bulb socket (1) counterclockwise to remove it from the lamp assembly (3).

4. Pull the bulb (2) straight out of the bulb socket (1).

5. Push the replacement bulb straight into the bulb socket and turn the bulb socket clockwise to install it into the lamp assembly.

6. Push the lamp assembly back into position until the release tab locks into place.
Replacement Bulbs

<table>
<thead>
<tr>
<th>Exterior Lamp</th>
<th>Bulb Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Back-up Lamp</td>
<td>W16W</td>
</tr>
<tr>
<td>Fog Lamp</td>
<td>PSX26W</td>
</tr>
<tr>
<td>License Plate Lamp</td>
<td>H11 LL</td>
</tr>
</tbody>
</table>

For replacement bulbs not listed here, contact your dealer.

Electrical System

Electrical System Overload
The vehicle has fuses to protect against an electrical system overload. Fuses also protect power devices in the vehicle.

Replace a bad fuse with a new one of the identical size and rating.

If there is a problem on the road and a fuse needs to be replaced, there are some spare fuses and a fuse puller in the Instrument Panel Fuse Block. The same amperage fuse can also be borrowed. Choose some feature of the vehicle that is not needed to use and replace it as soon as possible.

Headlamp Wiring
An electrical overload may cause the lamps to go on and off, or in some cases to remain off. Have the headlamp wiring checked right away if the lamps go on and off or remain off.

Fuses
The wiring circuits in the vehicle are protected from short circuits by fuses. This greatly reduces the chance of fires caused by electrical problems.

Look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure you replace a bad fuse with a new one of the identical size and rating.

Windshield Wipers
If the wiper motor overheats due to heavy snow or ice, the windshield wipers will stop until the motor cools and will then restart.

Although the circuit is protected from electrical overload, overload due to heavy snow or ice may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using the windshield wipers.

If the overload is caused by an electrical problem and not snow or ice, be sure to get it fixed.
Vehicle Care

Fuses of the same amperage can be temporarily borrowed from another fuse location, if a fuse goes out. Replace the fuse as soon as you can.

**Engine Compartment Fuse Block**

The engine compartment fuse block is in the engine compartment, on the driver side of the vehicle.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.</td>
</tr>
</tbody>
</table>

A fuse puller is available in the left instrument panel fuse block.

Lift the cover to access the fuse block.
<table>
<thead>
<tr>
<th>Item</th>
<th>Usage</th>
<th>Item</th>
<th>Usage</th>
<th>Item</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electric running boards</td>
<td>2</td>
<td>Antilock brake system pump</td>
<td>3</td>
<td>Interior BEC LT1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
<td>MBS passenger</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Item</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Suspension leveling compressor</td>
</tr>
<tr>
<td>6</td>
<td>4WD transfer case electronic control</td>
</tr>
<tr>
<td>10</td>
<td>Electric parking brake</td>
</tr>
<tr>
<td>13</td>
<td>Interior BEC LT2</td>
</tr>
<tr>
<td>14</td>
<td>Rear BEC 1</td>
</tr>
<tr>
<td>17</td>
<td>MBS driver</td>
</tr>
<tr>
<td>21</td>
<td>ALC exhaust solenoid</td>
</tr>
<tr>
<td>23</td>
<td>Integrated chassis control module</td>
</tr>
<tr>
<td>24</td>
<td>Real time dampening</td>
</tr>
<tr>
<td>25</td>
<td>Fuel pump power module</td>
</tr>
<tr>
<td>26</td>
<td>Spare/Battery regulated voltage control</td>
</tr>
<tr>
<td>28</td>
<td>Upfitter 2</td>
</tr>
<tr>
<td>29</td>
<td>Upfitter 2 relay</td>
</tr>
<tr>
<td>30</td>
<td>Wiper</td>
</tr>
<tr>
<td>31</td>
<td>TIM</td>
</tr>
<tr>
<td>34</td>
<td>Back-up lamps</td>
</tr>
<tr>
<td>35</td>
<td>Antilock brake system valve</td>
</tr>
<tr>
<td>36</td>
<td>Trailer brakes</td>
</tr>
<tr>
<td>37</td>
<td>Upfitter 3 relay</td>
</tr>
<tr>
<td>39</td>
<td>Trailer stop, turn right</td>
</tr>
<tr>
<td>40</td>
<td>Trailer stop, turn left</td>
</tr>
<tr>
<td>41</td>
<td>Trailer park lamps</td>
</tr>
<tr>
<td>42</td>
<td>Right parking lamps</td>
</tr>
<tr>
<td>43</td>
<td>Left parking lamps</td>
</tr>
<tr>
<td>44</td>
<td>Upfitter 3</td>
</tr>
<tr>
<td>45</td>
<td>Automatic level control run, crank</td>
</tr>
<tr>
<td>47</td>
<td>Upfitter 4</td>
</tr>
<tr>
<td>48</td>
<td>Upfitter 4 relay</td>
</tr>
<tr>
<td>49</td>
<td>Reverse lamps</td>
</tr>
<tr>
<td>51</td>
<td>Parking lamp relay</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Item</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>59</td>
<td>Euro trailer</td>
</tr>
<tr>
<td>60</td>
<td>Air conditioning control</td>
</tr>
<tr>
<td>63</td>
<td>Upfitter 1</td>
</tr>
<tr>
<td>67</td>
<td>Trailer battery</td>
</tr>
<tr>
<td>69</td>
<td>RC upfitter 3 and 4</td>
</tr>
<tr>
<td>70</td>
<td>VBAT upfitter 3 and 4</td>
</tr>
<tr>
<td>72</td>
<td>Upfitter 1 relay</td>
</tr>
<tr>
<td>74</td>
<td>Engine control module ignition</td>
</tr>
<tr>
<td>75</td>
<td>Miscellaneous ignition spare</td>
</tr>
<tr>
<td>76</td>
<td>Transmission ignition</td>
</tr>
<tr>
<td>77</td>
<td>RC upfitter 1 and 2</td>
</tr>
<tr>
<td>78</td>
<td>VBAT upfitter 1 and 2</td>
</tr>
<tr>
<td>83</td>
<td>Euro trailer RC</td>
</tr>
<tr>
<td>84</td>
<td>Run, crank relay</td>
</tr>
<tr>
<td>87</td>
<td>Engine</td>
</tr>
<tr>
<td>88</td>
<td>Injector A – odd</td>
</tr>
<tr>
<td>Item</td>
<td>Usage</td>
</tr>
<tr>
<td>------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>89</td>
<td>Injector B – even</td>
</tr>
<tr>
<td>90</td>
<td>Oxygen sensor B</td>
</tr>
<tr>
<td>91</td>
<td>Throttle control</td>
</tr>
<tr>
<td>92</td>
<td>Engine control module relay</td>
</tr>
<tr>
<td>93</td>
<td>Horn</td>
</tr>
<tr>
<td>94</td>
<td>Fog lamps</td>
</tr>
<tr>
<td>95</td>
<td>High-beam headlamps</td>
</tr>
<tr>
<td>100</td>
<td>Oxygen sensor A</td>
</tr>
<tr>
<td>101</td>
<td>Engine control module</td>
</tr>
<tr>
<td>102</td>
<td>Engine control module/</td>
</tr>
<tr>
<td></td>
<td>Transmission control module</td>
</tr>
<tr>
<td>103</td>
<td>Auxiliary interior heater</td>
</tr>
<tr>
<td>104</td>
<td>Starter</td>
</tr>
<tr>
<td>107</td>
<td>Aero shutter</td>
</tr>
<tr>
<td>109</td>
<td>Police upfitter</td>
</tr>
<tr>
<td>112</td>
<td>Starter relay</td>
</tr>
</tbody>
</table>

**Instrument Panel Fuse Block (Left)**

The left instrument panel fuse block access door is on the driver side edge of the instrument panel. Pull off the cover to access the fuse block.
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The vehicle may not be equipped with all of the fuses, relays, and features shown.

<table>
<thead>
<tr>
<th>Number</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Accessory power outlet 1</td>
</tr>
<tr>
<td>5</td>
<td>Retained accessory power/Accessory</td>
</tr>
<tr>
<td>6</td>
<td>APO/BATT</td>
</tr>
<tr>
<td>7</td>
<td>Universal garage door opener/Inside rear view mirror</td>
</tr>
<tr>
<td>8</td>
<td>SEO retained accessory power</td>
</tr>
<tr>
<td>9</td>
<td>Not used</td>
</tr>
<tr>
<td>10</td>
<td>Body control module 3</td>
</tr>
<tr>
<td>11</td>
<td>Body control module 5</td>
</tr>
<tr>
<td>12</td>
<td>Steering wheel controls backlighting</td>
</tr>
<tr>
<td>13</td>
<td>Not used</td>
</tr>
<tr>
<td>14</td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Not used</td>
</tr>
<tr>
<td>16</td>
<td>Discrete logic ignition sensor</td>
</tr>
<tr>
<td>17</td>
<td>VPM</td>
</tr>
<tr>
<td>Number</td>
<td>Usage</td>
</tr>
<tr>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>18</td>
<td>Mirror window module</td>
</tr>
<tr>
<td>19</td>
<td>Body control module 1</td>
</tr>
<tr>
<td>20</td>
<td>Front bolster (if equipped)</td>
</tr>
<tr>
<td>21</td>
<td>Not used</td>
</tr>
<tr>
<td>22</td>
<td>Not used</td>
</tr>
<tr>
<td>23</td>
<td>Not used</td>
</tr>
<tr>
<td>24</td>
<td>Heater, ventilation and air conditioning ignition/Heater, ventilation and air conditioning auxiliary</td>
</tr>
<tr>
<td>25</td>
<td>Instrument cluster ignition/Sensing diagnostic module ignition</td>
</tr>
<tr>
<td>26</td>
<td>Tilt column/SEO, tilt column lock 1/SEO</td>
</tr>
<tr>
<td>27</td>
<td>Data link connector/Driver seat module</td>
</tr>
<tr>
<td>28</td>
<td>Passive entry/Passive start/Heater, ventilation and air conditioning battery</td>
</tr>
<tr>
<td>29</td>
<td>Content theft</td>
</tr>
<tr>
<td>30</td>
<td>Not used</td>
</tr>
<tr>
<td>31</td>
<td>Not used</td>
</tr>
<tr>
<td>32</td>
<td>Not used</td>
</tr>
<tr>
<td>33</td>
<td>SEO/Automatic level control</td>
</tr>
<tr>
<td>34</td>
<td>Park enable electric adjustable pedal (if equipped)</td>
</tr>
<tr>
<td>35</td>
<td>Not used</td>
</tr>
<tr>
<td>36</td>
<td>Miscellaneous R/C</td>
</tr>
<tr>
<td>37</td>
<td>Heated steering wheel</td>
</tr>
<tr>
<td>38</td>
<td>Steering column lock 2 (if equipped)</td>
</tr>
<tr>
<td>39</td>
<td>Instrument cluster battery</td>
</tr>
<tr>
<td>40</td>
<td>Not used</td>
</tr>
<tr>
<td>41</td>
<td>Not used</td>
</tr>
<tr>
<td>42</td>
<td>Euro trailer (if equipped)</td>
</tr>
<tr>
<td>43</td>
<td>Left doors</td>
</tr>
<tr>
<td>44</td>
<td>Driver power seat</td>
</tr>
<tr>
<td>45</td>
<td>Not used</td>
</tr>
<tr>
<td>46</td>
<td>Right heated, cooled seat</td>
</tr>
<tr>
<td>47</td>
<td>Left heated, cooled seat</td>
</tr>
<tr>
<td>48</td>
<td>Not used</td>
</tr>
<tr>
<td>49</td>
<td>Not used</td>
</tr>
<tr>
<td>50</td>
<td>Accessory power outlet 2</td>
</tr>
<tr>
<td>51</td>
<td>Not used</td>
</tr>
<tr>
<td>52</td>
<td>Retained accessory power/Accessory relay</td>
</tr>
<tr>
<td>53</td>
<td>Run, crank relay</td>
</tr>
<tr>
<td>54</td>
<td>Not used</td>
</tr>
<tr>
<td>55</td>
<td>Not used</td>
</tr>
<tr>
<td>56</td>
<td>Not used</td>
</tr>
</tbody>
</table>
The right instrument panel fuse block access door is on the passenger side edge of the instrument panel.

Pull off the cover to access the fuse block.

The vehicle may not be equipped with all of the fuses, relays, and features shown.

<table>
<thead>
<tr>
<th>Number</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>Number</td>
<td>Usage</td>
</tr>
<tr>
<td>--------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Accessory power outlet 4</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Glove box</td>
</tr>
<tr>
<td>9</td>
<td>Not used</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Steering wheel controls</td>
</tr>
<tr>
<td>13</td>
<td>Body control module 8</td>
</tr>
<tr>
<td>14</td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Not used</td>
</tr>
<tr>
<td>16</td>
<td>Not used</td>
</tr>
<tr>
<td>17</td>
<td>Not used</td>
</tr>
<tr>
<td>18</td>
<td>Not used</td>
</tr>
<tr>
<td>19</td>
<td>Body control module 4</td>
</tr>
<tr>
<td>20</td>
<td>Rear seat entertainment</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
296 Vehicle Care

Rear Compartment Fuse Block

The rear compartment fuse block is behind the access panel on the left side of the compartment.

Pull the panel out by grabbing the finger access slot at the rear edge.

The vehicle may not be equipped with all of the fuses, relays, and features shown.

<table>
<thead>
<tr>
<th>ISO Mini Relays</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rear defogger</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Micro Fuses</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Heated second row seat left</td>
</tr>
<tr>
<td>3</td>
<td>Heated second row seat right</td>
</tr>
<tr>
<td>4</td>
<td>Heated mirrors</td>
</tr>
<tr>
<td>5</td>
<td>Liftgate</td>
</tr>
<tr>
<td>6</td>
<td>Glass breakage</td>
</tr>
<tr>
<td>7</td>
<td>Liftglass</td>
</tr>
<tr>
<td>8</td>
<td>Liftgate module logic</td>
</tr>
<tr>
<td>9</td>
<td>Rear wiper</td>
</tr>
<tr>
<td>10</td>
<td>Rear heater, ventilation and air conditioning blower</td>
</tr>
<tr>
<td>11</td>
<td>Second row seat</td>
</tr>
<tr>
<td>19</td>
<td>Rear fog lamp (if equipped)</td>
</tr>
</tbody>
</table>
Wheels and Tires

Tires
Every new GM vehicle has high-quality tires made by a leading tire manufacturer. See the warranty manual for information regarding the tire warranty and where to get service. For additional information refer to the tire manufacturer.

⚠️ Warning

- Poorly maintained and improperly used tires are dangerous.
- Overloading the tires can cause overheating as a result of too much flexing. There could be a blowout and a serious crash. See Vehicle Load Limits ➔ 194.

- Underinflated tires pose the same danger as overloaded tires. The resulting crash could cause serious injury. Check all tires frequently to maintain the recommended pressure. Tire pressure should be checked when the tires are cold.
- Overinflated tires are more likely to be cut, punctured, or broken by a sudden impact — such as when hitting a pothole. Keep tires at the recommended pressure.
- Worn or old tires can cause a crash. If the tread is badly worn, replace them.
Warning (Continued)

- Replace any tires that have been damaged by impacts with potholes, curbs, etc.
- Improperly repaired tires can cause a crash. Only the dealer or an authorized tire service center should repair, replace, dismount, and mount the tires.
- Do not spin the tires in excess of 56 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tires to explode.

See Tire Pressure for High-Speed Operation $\diamondsuit$ 305 for inflation pressure adjustment for high-speed driving.

All-Season Tires

This vehicle may come with all-season tires. These tires are designed to provide good overall performance on most road surfaces and weather conditions. Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. Original equipment all-season tires can be identified by the last two characters of this TPC code, which will be "MS."

Consider installing winter tires on the vehicle if frequent driving on snow or ice-covered roads is expected. All-season tires provide adequate performance for most winter driving conditions, but they may not offer the same level of traction or performance as winter tires on snow or ice-covered roads. See Winter Tires $\diamondsuit$ 298.

Winter Tires

This vehicle was not originally equipped with winter tires. Winter tires are designed for increased traction on snow and ice-covered roads. Consider installing winter tires on the vehicle if frequent driving on ice or snow covered roads is expected. See your dealer for details regarding winter tire availability and proper tire selection. Also, see Buying New Tires $\diamondsuit$ 311.

With winter tires, there may be decreased dry road traction, increased road noise, and shorter tread life. After changing to winter tires, be alert for changes in vehicle handling and braking.

If using winter tires:
- Use tires of the same brand and tread type on all four wheel positions.
- Use only radial ply tires of the same size, load range, and speed rating as the original equipment tires.

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y, and ZR speed rated tires. If winter
tires with a lower speed rating are chosen, never exceed the tire’s maximum speed capability.

**Low-Profile Tires**

The vehicle has low profile tires that are classified as touring tires and are designed for on road use. The low-profile, wide tread design is not recommended for off-road driving. See *Off-Road Driving* § 185, for additional information.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low-profile tires</strong> are more susceptible to damage from road hazards or curb impact than standard profile tires. Tire and/or wheel assembly damage can occur when coming into contact with road hazards like potholes, or sharp edged objects, or when sliding into a curb. The warranty does not cover this type of damage. Keep tires set to the correct inflation pressure and when possible, avoid contact with curbs, potholes, and other road hazards.</td>
</tr>
</tbody>
</table>

**Caution (Continued)**

**All-Terrain Tires**

This vehicle may have all-terrain tires. These tires provide good performance on most road surfaces, weather conditions, and for off-road driving. See *Off-Road Driving* § 185.

The tread pattern on these tires may wear more quickly than other tires. Consider rotating the tires more frequently than at 12 000 km (7,500 mi) intervals if irregular wear is noted when the tires are inspected. See *Tire Inspection* § 309.

**Tire Sidewall Labeling**

Useful information about a tire is molded into the sidewall. The example shows a typical passenger vehicle tire sidewall.

**Passenger (P-Metric)/Spare Tire**

1. **Tire Size**: The tire size code is a combination of letters and numbers used to define a particular tire’s width, height, aspect ratio, construction type, and service description. See the “Tire Size” illustration later in this section for more detail.

2. **TPC Spec (Tire Performance Criteria Specification)**: Original equipment tires designed to GM’s specific tire performance criteria have a TPC specification code molded onto the sidewall.
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GM’s TPC specifications meet or exceed all federal safety guidelines.

(3) DOT (Department of Transportation) : The Department of Transportation (DOT) code indicates that the tire is in compliance with the U.S. Department of Transportation Motor Vehicle Safety Standards.

DOT Tire Date of Manufacture : The last four digits of the TIN indicate the tire manufactured date. The first two digits represent the week (01-52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

(4) Tire Identification Number (TIN) : The letters and numbers following the DOT code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

(5) Tire Ply Material : The type of cord and number of plies in the sidewall and under the tread.

(6) Uniform Tire Quality Grading (UTQG) : Tire manufacturers are required to grade tires based on three performance factors: treadwear, traction, and temperature resistance. For more information, see Uniform Tire Quality Grading 313.

(7) Maximum Cold Inflation Load Limit : Maximum load that can be carried and the maximum pressure needed to support that load. For information on recommended tire pressure see Tire Pressure 303 and Vehicle Load Limits 194.

(8) Temporary Use Only : Only use a temporary spare tire until the road tire is repaired and replaced. This spare tire should not be driven on over 112 km/h (70 mph), or 88 km/h (55 mph) when pulling a trailer, with the proper inflation pressure. See Full-Size Spare Tire 325.

Tire Designations

Tire Size

The example shows a typical passenger vehicle tire size.

Passenger (P-Metric) Tire

The United States version of a metric tire sizing system. The letter P as the first character in the tire size means a passenger
Vehicle Care 301

Vehicle tire engineered to standards set by the U.S. Tire and Rim Association.

(2) Tire Width: The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

(3) Aspect Ratio: A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is 75, as shown in item C of the tire illustration, it would mean that the tire’s sidewall is 75 percent as high as it is wide.

(4) Construction Code: A letter code is used to indicate the type of ply construction in the tire. The letter R means radial ply construction; the letter D means diagonal or bias ply construction; and the letter B means belted-bias ply construction.

(5) Rim Diameter: Diameter of the wheel in inches.

(6) Service Description: These characters represent the load index and speed rating of the tire. The load index represents the load carrying capacity a tire is certified to carry. The speed rating is the maximum speed a tire is certified to carry a load.

Tire Terminology and Definitions

Air Pressure: The amount of air inside the tire pressing outward on each square inch of the tire. Air pressure is expressed in kPa (kilopascal) or psi (pounds per square inch).

Accessory Weight: The combined weight of optional accessories. Some examples of optional accessories are automatic transmission, power windows, power seats, and air conditioning.

Aspect Ratio: The relationship of a tire’s height to its width.

Belt: A rubber coated layer of cords between the plies and the tread. Cords may be made from steel or other reinforcing materials.

Bead: The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

Bias Ply Tire: A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

Cold Tire Pressure: The amount of air pressure in a tire, measured in kPa (kilopascal) or psi (pounds per square inch) before a tire has built up heat from driving. See Tire Pressure 303.

Curb Weight: The weight of a motor vehicle with standard and optional equipment including the
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maximum capacity of fuel, oil, and coolant, but without passengers and cargo.

**DOT Markings**: A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation (DOT) Motor Vehicle Safety Standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand, and date of production.

**GVWR**: Gross Vehicle Weight Rating. See *Vehicle Load Limits* § 194.

**GAWR FRT**: Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits* § 194.

**GAWR RR**: Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits* § 194.

**Intended Outboard Sidewall**: The side of an asymmetrical tire that must always face outward when mounted on a vehicle.

**Kilopascal (kPa)**: The metric unit for air pressure.

**Light Truck (LT-Metric) Tire**: A tire used on light duty trucks and some multipurpose passenger vehicles.

**Load Index**: An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

**Maximum Inflation Pressure**: The maximum air pressure to which a cold tire can be inflated. The maximum air pressure is molded onto the sidewall.

**Maximum Load Rating**: The load rating for a tire at the maximum permissible inflation pressure for that tire.

**Maximum Loaded Vehicle Weight**: The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

**Normal Occupant Weight**: The number of occupants a vehicle is designed to seat multiplied by 68 kg (150 lb). See *Vehicle Load Limits* § 194.

**Occupant Distribution**: Designated seating positions.

**Outward Facing Sidewall**: The side of an asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.
Passenger (P-Metric) Tire: A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

Recommended Inflation Pressure: Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard. See Tire Pressure 303 and Vehicle Load Limits 194.

Radial Ply Tire: A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

Rim: A metal support for a tire and upon which the tire beads are seated.

Sidewall: The portion of a tire between the tread and the bead.

Speed Rating: An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

Traction: The friction between the tire and the road surface. The amount of grip provided.

Tread: The portion of a tire that comes into contact with the road.

Treadwear Indicators: Narrow bands, sometimes called wear bars, that show across the tread of a tire when only 1.6 mm (1/16 in) of tread remains. See When It Is Time for New Tires 310.

UTQGS (Uniform Tire Quality Grading Standards): A tire information system that provides consumers with ratings for a tire's traction, temperature, and treadwear. Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire. See Uniform Tire Quality Grading 313.

Vehicle Capacity Weight: The number of designated seating positions multiplied by 68 kg (150 lb) plus the rated cargo load. See Vehicle Load Limits 194.

Vehicle Maximum Load on the Tire: Load on an individual tire due to curb weight, accessory weight, occupant weight, and cargo weight.

Vehicle Placard: A label permanently attached to a vehicle showing the vehicle capacity weight and the original equipment tire size and recommended inflation pressure. See “Tire and Loading Information Label” under Vehicle Load Limits 194.

Tire Pressure

Tires need the correct amount of air pressure to operate effectively.
## Vehicle Care

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neither tire underinflation nor overinflation is good. Underinflated tires, or tires that do not have enough air, can result in:</td>
</tr>
<tr>
<td>• Tire overloading and overheating which could lead to a blowout.</td>
</tr>
<tr>
<td>• Premature or irregular wear.</td>
</tr>
<tr>
<td>• Poor handling.</td>
</tr>
<tr>
<td>• Reduced fuel economy.</td>
</tr>
<tr>
<td>Overinflated tires, or tires that have too much air, can result in:</td>
</tr>
<tr>
<td>• Unusual wear.</td>
</tr>
<tr>
<td>• Poor handling.</td>
</tr>
<tr>
<td>• Rough ride.</td>
</tr>
<tr>
<td>• Needless damage from road hazards.</td>
</tr>
</tbody>
</table>

The Tire and Loading Information label on the vehicle indicates the original equipment tires and the correct cold tire inflation pressures. The recommended pressure is the minimum air pressure needed to support the vehicle's maximum load carrying capacity.

For additional information regarding how much weight the vehicle can carry, and an example of the Tire and Loading Information label, see *Vehicle Load Limits* \(\Rightarrow 194\). How the vehicle is loaded affects vehicle handling and ride comfort. Never load the vehicle with more weight than it was designed to carry.

### When to Check

Check the tires once a month or more.

Do not forget the spare tire, if the vehicle has one. See *Full-Size Spare Tire* \(\Rightarrow 325\) for additional information.

### How to Check

Use a good quality pocket-type gauge to check tire pressure. Proper tire inflation cannot be determined by looking at the tire. Check the tire inflation pressure when the tires are cold, meaning the vehicle has not been driven for at least three hours or no more than 1.6 km (1 mi).

Remove the valve cap from the tire valve stem. Press the tire gauge firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the Tire and Loading Information label, no further adjustment is necessary. If the inflation pressure is low, add air until the recommended pressure is reached. If the
inflation pressure is high, press on the metal stem in the center of the tire valve to release air.

Re-check the tire pressure with the tire gauge.

Put the valve caps back on the valve stems to keep out dirt and moisture and prevent leaks. Use only valve caps designed for the vehicle by GM. TPMS sensors could be damaged and would not be covered by the vehicle warranty.

**Tire Pressure for High-Speed Operation**

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driving at high speeds, 160 km/h (100 mph) or higher, puts additional strain on tires. Sustained high-speed driving causes excessive heat buildup and can cause sudden tire failure. This could cause a crash, and</td>
</tr>
</tbody>
</table>

You or others could be killed. Some high-speed rated tires require inflation pressure adjustment for high-speed operation. When speed limits and road conditions allow the vehicle to be driven at high speeds, make sure the tires are rated for high-speed operation, are in excellent condition, and are set to the correct cold tire inflation pressure for the vehicle load.

When driving the vehicle at speeds of 160 km/h (100 mph) or higher, set the cold inflation pressure to 20 kPa (3 psi) above the recommended tire pressure shown on the Tire and Loading Information label. Return the tires to the recommended cold tire inflation pressure when high-speed driving has ended. See Vehicle Load Limits 194 and Tire Pressure 303.

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
</tr>
</thead>
</table>

Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. The TPMS sensors monitor the air pressure in your tires and transmit tire pressure readings to a receiver located in the vehicle.

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire pressure telltale when one or more of your tires is significantly under-inflated.
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Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly. The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated.

This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

See Tire Pressure Monitor Operation 306.


Tire Pressure Monitor Operation

This vehicle may have a Tire Pressure Monitor System (TPMS). The TPMS is designed to warn the driver when a low tire pressure condition exists. TPMS sensors are mounted onto each tire and wheel assembly, excluding the spare tire and wheel assembly. The TPMS sensors monitor the air pressure in the tires and transmit the tire pressure readings to a receiver located in the vehicle.

When a low tire pressure condition is detected, the TPMS illuminates the low tire pressure warning light located on the instrument cluster. If the warning light comes on, stop as soon as possible and inflate the tires to the recommended pressure...
shown on the Tire and Loading Information label. See Vehicle Load Limits 194.

A message to check the pressure in a specific tire displays in the Driver Information Center (DIC). The low tire pressure warning light and the DIC warning message come on at each ignition cycle until the tires are inflated to the correct inflation pressure. If the vehicle has DIC buttons, tire pressure levels can be viewed. For additional information and details about the DIC operation and displays, see Driver Information Center (DIC) 137 and Tire Messages 152.

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

A Tire and Loading Information label shows the size of the original equipment tires and the correct inflation pressure for the tires when they are cold. See Vehicle Load Limits 194, for an example of the Tire and Loading Information label and its location. Also see Tire Pressure 303.

The TPMS can warn about a low tire pressure condition but it does not replace normal tire maintenance. See Tire Inspection 309, Tire Rotation 309 and Tires 297.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tire sealant materials are not all the same. A non-approved tire sealant could damage the TPMS sensors. TPMS sensor damage caused by using an incorrect tire sealant is not covered by the vehicle warranty. Always use only the GM approved tire sealant available through your dealer or included in the vehicle.</td>
</tr>
</tbody>
</table>

TPMS Malfunction Light and Message
The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. When the system detects a malfunction, the low tire pressure warning light flashes for about one minute and then stays on for the remainder of the ignition cycle. A DIC warning message also displays. The malfunction light and DIC warning message come on at each ignition cycle until the problem is corrected. Some of the conditions that can cause these to come on are:

- One of the road tires has been replaced with the spare tire. The spare tire does not have a TPMS sensor. The malfunction light and the DIC message should go off after the road tire is replaced and the sensor matching process is performed successfully. See "TPMS Sensor Matching Process" later in this section.
Vehicle Care

- The TPMS sensor matching process was not done or not completed successfully after rotating the tires. The malfunction light and the DIC message should go off after successfully completing the sensor matching process. See "TPMS Sensor Matching Process" later in this section.

- One or more TPMS sensors are missing or damaged. The malfunction light and the DIC message should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.

- Replacement tires or wheels do not match the original equipment tires or wheels. Tires and wheels other than those recommended could prevent the TPMS from functioning properly. See Buying New Tires § 311.

- Operating electronic devices or being near facilities using radio wave frequencies similar to the TPMS could cause the TPMS sensors to malfunction.

If the TPMS is not functioning properly, it cannot detect or signal a low tire condition. See your dealer for service if the TPMS malfunction light and DIC message come on and stay on.

TPMS Sensor Matching Process

Each TPMS sensor has a unique identification code. The identification code needs to be matched to a new tire/wheel position after rotating the vehicle’s tires or replacing one or more of the TPMS sensors. Also, the TPMS sensor matching process should be performed after replacing a spare tire with a road tire containing the TPMS sensor. The malfunction light and the DIC message should go off at the next ignition cycle. The sensors are matched to the tire/wheel positions, using a TPMS relearn tool, in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear. See your dealer for service or to purchase a relearn tool. A TPMS relearn tool can also be purchased. See Tire Pressure Monitor Sensor Activation Tool at www.gmtoolsandequipment.com or call 1-800-GM TOOLS (1-800-468-6657).

There are two minutes to match the first tire/wheel position, and five minutes overall to match all four tire/wheel positions. If it takes longer, the matching process stops and must be restarted.

The TPMS sensor matching process is:

1. Set the parking brake.
2. Place the vehicle power mode in ON/RUN/START. See Ignition Positions § 199.
3. Make sure the Tire Pressure info page option is turned on. The info pages on the DIC can be turned on and off through the Settings menu. See Driver Information Center (DIC) § 137.
4. Use the DIC controls on the right side of the steering wheel to scroll to the Tire Pressure screen under the DIC info page.

5. Press and hold the √ (Set/Reset) button located in the center of the DIC controls. The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARNING ACTIVE message displays on the DIC screen.

6. Start with the driver side front tire.

7. Place the relearn tool against the tire sidewall, near the valve stem. Then press the button to activate the TPMS sensor. A horn chirp confirms that the sensor identification code has been matched to this tire and wheel position.

8. Proceed to the passenger side front tire, and repeat the procedure in Step 7.

9. Proceed to the passenger side rear tire, and repeat the procedure in Step 7.

10. Proceed to the driver side rear tire, and repeat the procedure in Step 7. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tire, and the TPMS sensor matching process is no longer active. The TIRE LEARNING ACTIVE message on the DIC display screen goes off.

11. Turn the ignition switch to LOCK/OFF.

12. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.

Tire Inspection
We recommend that the tires, including the spare tire, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tire if:
• The indicators at three or more places around the tire can be seen.
• There is cord or fabric showing through the tire's rubber.
• The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
• The tire has a bump, bulge, or split.
• The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

Tire Rotation
Tires should be rotated every 12 000 km (7,500 mi). See Maintenance Schedule 344.
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Tires are rotated to achieve a uniform wear for all tires. The first rotation is the most important.

Anytime unusual wear is noticed, rotate the tires as soon as possible, check for proper tire inflation pressure, and check for damaged tires or wheels. If the unusual wear continues after the rotation, check the wheel alignment. See When It Is Time for New Tires \( \Rightarrow \) 310 and Wheel Replacement \( \Rightarrow \) 315.

Use this rotation pattern when rotating the tires.

Do not include the spare tire in the tire rotation.

Adjust the front and rear tires to the recommended inflation pressure on the Tire and Loading Information label after the tires have been rotated. See Tire Pressure \( \Rightarrow \) 303 and Vehicle Load Limits \( \Rightarrow \) 194.

Reset the Tire Pressure Monitor System. See Tire Pressure Monitor Operation \( \Rightarrow \) 306.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under Capacities and Specifications \( \Rightarrow \) 358.

**Warning (Continued)**

- Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

- Lightly coat the center of the wheel hub with wheel bearing grease after a wheel change or tire rotation to prevent corrosion or rust build-up. Do not get grease on the flat wheel mounting surface or on the wheel nuts or bolts.

**When It Is Time for New Tires**

Factors, such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions affect the wear rate of the tires.
Treadwear indicators are one way to tell when it is time for new tires. Treadwear indicators appear when the tires have only 1.6 mm (1/16 in) or less of tread remaining. Some commercial truck tires may not have treadwear indicators. See Tire Inspection \(\Rightarrow\) 309 and Tire Rotation \(\Rightarrow\) 309 for additional information.

The rubber in tires ages over time. This also applies to the spare tire, if the vehicle has one, even if it is never used. Multiple factors including temperatures, loading conditions, and inflation pressure maintenance affect how fast aging takes place. GM recommends that tires, including the spare if equipped, be replaced after six years, regardless of tread wear. The tire manufacture date is the last four digits of the DOT Tire Identification Number (TIN) which is molded into one side of the tire sidewall. The first two digits represent the week (01-52) and the last two digits, the year. For example, the third week of the year 2010 would have a four-digit DOT date of 0310.

Vehicle Storage

Tires age when stored normally mounted on a parked vehicle. Park a vehicle that will be stored for at least a month in a cool, dry, clean area away from direct sunlight to slow aging. This area should be free of grease, gasoline, or other substances that can deteriorate rubber.

Parking for an extended period can cause flat spots on the tires that may result in vibrations while driving. When storing a vehicle for at least a month, remove the tires or raise the vehicle to reduce the weight from the tires.

Buying New Tires

GM has developed and matched specific tires for the vehicle. The original equipment tires installed were designed to meet General Motors Tire Performance Criteria Specification (TPC Spec) system rating. When replacement tires are needed, GM strongly recommends buying tires with the same TPC Spec rating.

GM's exclusive TPC Spec system considers over a dozen critical specifications that impact the overall performance of the vehicle, including brake system performance, ride and handling, traction control, and tire pressure monitoring performance. GM's TPC Spec number is molded onto the tire's sidewall near the tire size. If the tires have an all-season tread design, the TPC Spec number will be followed by MS for mud.
312 Vehicle Care

and snow. See Tire Sidewall Labeling \( \Rightarrow 299 \) for additional information.

GM recommends replacing worn tires in complete sets of four. Uniform tread depth on all tires will help to maintain the performance of the vehicle. Braking and handling performance may be adversely affected if all the tires are not replaced at the same time. If proper rotation and maintenance have been done, all four tires should wear out at about the same time. See Tire Rotation \( \Rightarrow 309 \) for information on proper tire rotation. However, if it is necessary to replace only one axle set of worn tires, place the new tires on the rear axle.

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
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<tbody>
<tr>
<td>Tires could explode during improper service. Attempting to mount or dismount a tire could cause injury or death. Only your dealer or authorized tire service center should mount or dismount the tires.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Warning (Continued)</th>
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<tbody>
<tr>
<td>and wheel assembly with a similar overall diameter as the road tires and wheels, so it is all right to drive on it. The spare tire was developed for use on this vehicle and will not affect vehicle handling.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Warning</th>
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<tbody>
<tr>
<td>Mixing tires of different sizes, brands, or types may cause loss of control of the vehicle, resulting in a crash or other vehicle damage. Use the correct size, brand, and type of tires on all wheels. This vehicle may have a different size spare than the road tires originally installed on the vehicle. When new, the vehicle included a spare tire</td>
</tr>
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(Continued)

<table>
<thead>
<tr>
<th>Warning</th>
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<tbody>
<tr>
<td>Using bias-ply tires on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving. A tire and/or wheel could fail suddenly and cause a crash. Use only radial-ply tires with the wheels on the vehicle.</td>
</tr>
</tbody>
</table>

Winter tires with the same speed rating as the original equipment tires may not be available for H, V, W, Y and ZR speed rated tires. Never exceed the winter
tires’ maximum speed capability when using winter tires with a lower speed rating.

If the vehicle tires must be replaced with a tire that does not have a TPC Spec number, make sure they are the same size, load range, speed rating, and construction (radial) as the original tires.

Vehicles that have a tire pressure monitoring system could give an inaccurate low-pressure warning if non-TPC Spec rated tires are installed. See Tire Pressure Monitor System \(\triangle 305\).

The Tire and Loading Information label indicates the original equipment tires on the vehicle. See Vehicle Load Limits \(\triangle 194\) for the label location and more information about the Tire and Loading Information label.

### Different Size Tires and Wheels

If wheels or tires are installed that are a different size than the original equipment wheels and tires, vehicle performance, including its braking, ride and handling characteristics, stability, and resistance to rollover may be affected. If the vehicle has electronic systems such as antilock brakes, rollover airbags, traction control, electronic stability control, or All-Wheel Drive, the performance of these systems can also be affected.

**Warning**

If different sized wheels are used, there may not be an acceptable level of performance and safety if tires not recommended for those wheels are selected. This increases the chance of a crash and serious injury. Only use GM specific wheel and tire systems developed for the vehicle, and have them properly installed by a GM certified technician.

See Buying New Tires \(\triangle 311\) and Accessories and Modifications \(\triangle 262\).

### Uniform Tire Quality Grading

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter tires, compact spare tires, tires with
nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal safety requirements and additional General Motors Tire Performance Criteria (TPC) standards.

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

**Treadwear 200 Traction AA Temperature A**

All Passenger Car Tires Must Conform to Federal Safety Requirements In Addition To These Grades.

**Treadwear**

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half (1½) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

**Traction**

The traction grades, from highest to lowest, are AA, A, B, and C. Those grades represent the tire’s ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance. Warning: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.

**Temperature**

The temperature grades are A (the highest), B, and C, representing the tire’s resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all
passenger car tires must meet under the Federal Motor Safety Standard No. 109. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law. Warning: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

Wheel Alignment and Tire Balance

The tires and wheels were aligned and balanced at the factory to provide the longest tire life and best overall performance. Adjustments to wheel alignment and tire balancing are not necessary on a regular basis. Consider an alignment check if there is unusual tire wear or the vehicle is significantly pulling to one side or the other. Some slight pull to the left or right, depending on the crown of the road and/or other road surface variations such as troughs or ruts, is normal. If the vehicle is vibrating when driving on a smooth road, the tires and wheels may need to be rebalanced. See your dealer for proper diagnosis.

Wheel Replacement

Replace any wheel that is bent, cracked, or badly rusted or corroded. If wheel nuts keep coming loose, the wheel, wheel bolts, and wheel nuts should be replaced. If the wheel leaks air, replace it. Some aluminum wheels can be repaired. See your dealer if any of these conditions exist.

Your dealer will know the kind of wheel that is needed. Each new wheel should have the same load-carrying capacity, diameter, width, offset, and be mounted the same way as the one it replaces.

Replace wheels, wheel bolts, wheel nuts, or Tire Pressure Monitor System (TPMS) sensors with new GM original equipment parts.

Warning

Using the wrong replacement wheels, wheel bolts, or wheel nuts can be dangerous. It could affect the braking and handling of the vehicle. Tires can lose air, and cause loss of control, causing a crash. Always use the correct wheel, wheel bolts, and wheel nuts for replacement.

Caution

The wrong wheel can also cause problems with bearing life, brake cooling, speedometer or odometer calibration, headlamp aim, bumper height, vehicle ground clearance, and tire or tire chain clearance to the body and chassis.
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Used Replacement Wheels

⚠️ Warning
Replacing a wheel with a used one is dangerous. How it has been used or how far it has been driven may be unknown. It could fail suddenly and cause a crash. When replacing wheels, use a new GM original equipment wheel.

Tire Chains

⚠️ Warning
Do not use tire chains. There is not enough clearance. Tire chains used on a vehicle without the proper amount of clearance can cause damage to the brakes, suspension, or other vehicle parts. The area damaged by the tire chains could cause loss of control and a crash. Use another type of traction device only if its manufacturer recommends it for the vehicle's tire size combination and road conditions. Follow that manufacturer's instructions. To avoid vehicle damage, drive slowly and readjust or remove the traction device if it contacts the vehicle. Do not spin the wheels. If traction devices are used, install them on the rear tires.

If a Tire Goes Flat

It is unusual for a tire to blowout while driving, especially if the tires are maintained properly. If air goes out of a tire, it is much more likely to leak out slowly. But if there ever is a blowout, here are a few tips about what to expect and what to do:

If a front tire fails, the flat tire creates a drag that pulls the vehicle toward that side. Take your foot off the accelerator pedal and grip the steering wheel firmly. Steer to maintain lane position, and then gently brake to a stop, well off the road, if possible.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction as used in a skid. Stop pressing the accelerator pedal and steer to straighten the vehicle. It may be very bumpy and noisy. Gently brake to a stop, well off the road, if possible.

⚠️ Warning
Driving on a flat tire will cause permanent damage to the tire. Re-inflating a tire after it has been driven on while severely underinflated or flat may cause a blowout and a serious crash. Never attempt to re-inflate a tire that has been driven on while severely underinflated or flat. Have your dealer or an authorized tire service center repair or replace the flat tire as soon as possible.
Warning

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place, well off the road, if possible. Turn on the hazard warning flashers. See Hazard Warning Flashers 168.

Warning

Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall (Continued)

Warning (Continued)

causing injury or death. Find a level place to change the tire. To help prevent the vehicle from moving:

1. Set the parking brake firmly.
2. Put the shift lever in P (Park).
3. For vehicles with four-wheel-drive with a N (Neutral) transfer case position, be sure the transfer case is in a drive gear — not in N (Neutral).
4. Turn off the engine and do not restart while the vehicle is raised.
5. Do not allow passengers to remain in the vehicle.
6. Place wheel blocks, if equipped, on both sides of the tire at the opposite corner of the tire being changed.

When the vehicle has a flat tire (2), use the following example as a guide to assist in the placement of the wheel blocks (1), if equipped.

1. Wheel Block (If Equipped)
2. Flat Tire

The following information explains how to use the jack and change a tire.

Tire Changing

Before towing a trailer, see "Hands-Free Operation" under Liftgate 36.
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Removing the Spare Tire and Tools

The equipment needed to change a flat tire is stored in the rear of the vehicle, on the driver side, behind a door in the trim panel.

1. Pull to open the trim panel door.
   The third row driver side seat may need to be folded to access the trim panel door.

2. Lift the acoustic pad to access the jack and tools.

3. Turn the wing nut retaining the tool bag (3) counterclockwise to remove it.
   Pull the tool bag toward the front of the vehicle and lift the rear portion of the bag upward to remove it.

4. Turn the jack knob (1) counterclockwise to release the jack and wheel blocks from the bracket.

5. Turn the wing nut retaining the wheel blocks (2) counterclockwise to remove the wheel blocks and the wheel block retainer.

Use the following tools:

1. Jack
2. Wheel Blocks
3. Jack Handle
4. Jack Handle Extensions
5. Wheel Wrench
To access the spare tire, refer to the following graphics and instructions:

1. Hoist Assembly
2. Hoist Shaft
3. Hoist Shaft Access Cover/Hole
4. Jack Handle Extensions
5. Wheel Wrench
6. Spare Tire Lock
7. Hoist End of Extension Tool
8. Hoist Shaft Access Hole
9. Spare Tire (Valve Stem Pointed Down)
10. Tire/Wheel Retainer
11. Hoist Cable

1. Open the hoist shaft access door (3) on the bumper to access the spare tire lock (6).

2. To remove the spare tire lock (6), insert the ignition key, turn it clockwise and then pull it straight out.

3. Assemble the two jack handle extensions (4) and wheel wrench (5), as shown.

If equipped with a hitch cover, turn the hitch cover retainers counterclockwise and pull the cover downward to remove it before removing the hoist shaft access door.
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4. Insert the open end of the extension (7) through the hole in the rear bumper (8) (hoist shaft access hole).
   Be sure the hoist end of the extension (7) connects to the hoist shaft. The ribbed square end of the extension is used to lower the spare tire.

5. Turn the wheel wrench counterclockwise to lower the spare tire to the ground. Continue to turn the wheel wrench until the spare tire can be pulled out from under the vehicle.

6. Use the wheel wrench hook to pull the hoist cable closer to assist in reaching the spare tire.

7. Tilt the tire toward the vehicle with some slack in the cable to access the tire/wheel retainer. Tilt the retainer and pull it and the cable and spring through the center of the wheel. Once the retainer is separated from the guide pin, tilt the retainer and pull it through the center of the wheel along with the cable and latch.

8. Put the spare tire near the flat tire.

Removing the Flat Tire and Installing the Spare Tire

1. Do a safety check before proceeding. See If a Tire Goes Flat \( \Rightarrow \) 316 for more information.

2. Use the wheel wrench to loosen all the wheel nuts. Turn the wheel wrench counterclockwise to loosen the wheel nuts. Do not remove the wheel nuts yet.
Jacking Locations (Overall View)

3. Position the jack under the vehicle, as shown.

Left Front Shown, Right Front Similar

Front Tire Flat: If the flat tire is on a front tire of the vehicle, use the jack handle and only one jack handle extension. Attach the wheel wrench to the jack handle extension. Attach the jack handle to the jack. Position the jack on the frame behind the flat tire where the frame sections overlap. Turn the wheel wrench clockwise to raise the vehicle. Raise the vehicle far enough off the ground so there is enough room for the spare tire to clear the ground.

Rear Position

Rear Tire Flat: If the flat tire is on a rear tire of the vehicle, use the jack handle (2) and both jack handle extensions (3). Attach the wheel wrench (4) to the jack handle extensions (3). Attach the jack handle (2) to the jack (1). Use the jacking pad (5) provided on the rear axle. Turn the wheel wrench (4) clockwise to raise the vehicle. Raise the vehicle far enough off the ground so there is enough room for the spare tire to clear the ground.

⚠️ Warning

Getting under a vehicle when it is lifted on a jack is dangerous. If the vehicle slips off the jack, you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.
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**Warning**
Raising the vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.

4. Remove all of the wheel nuts.
5. Take off the flat tire.

6. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.

**Warning**
Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

7. Put the wheel nuts back on with the rounded end of the nuts toward the wheel after mounting the spare tire.

**Warning (Continued)**
Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.

8. Tighten each wheel nut by hand. Then use the wheel wrench to tighten the nuts until the wheel is held against the hub.

9. Turn the wheel wrench counterclockwise to lower the vehicle. Lower the jack completely.
10. Tighten the nuts firmly in a crisscross sequence as shown by turning the wheel wrench clockwise.

**Warning**
Wheel nuts that are improperly or incorrectly tightened can cause the wheels to become loose or come off. The wheel nuts should be tightened with a torque wrench to the proper torque specification after replacing. Follow the torque specification supplied by the aftermarket manufacturer when using accessory locking wheel nuts. See Capacities and Specifications 358 for original equipment wheel nut torque specifications.

**Caution**
Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See Capacities and Specifications 358 for the wheel nut torque specification.

**Storing a Flat or Spare Tire and Tools**

**Warning**
Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.

**Caution**
Storing an aluminum wheel with a flat tire under your vehicle for an extended period of time or with the valve stem pointing up can damage the wheel. Always stow the wheel with the valve stem pointing down and have the wheel/tire repaired as soon as possible.
**Caution**

The tire hoist can be damaged if there is no tension on the cable when using it. To have the necessary tension, the spare or road tire and wheel assembly must be installed on the tire hoist to use it.

Store the tire under the rear of the vehicle in the spare tire carrier. Refer to the following graphics and instructions to help you:

1. Hoist Assembly
2. Hoist Shaft
3. Hoist Shaft Access Cover/Hole
4. Jack Handle Extensions
5. Wheel Wrench
6. Spare Tire Lock
7. Hoist End of Extension Tool
8. Hoist Shaft Access Hole
9. Spare Tire (Valve Stem Pointed Down)
10. Tire/Wheel Retainer
11. Hoist Cable

1. Put the tire (9) on the ground at the rear of the vehicle with the valve stem pointed down, and to the rear.

2. Tilt the tire toward the vehicle. Separate the tire/wheel retainer from the guide pin. Pull the pin through the center of the wheel. Tilt the retainer down through the center wheel opening. Make sure the retainer is fully seated across the underside of the wheel.

3. Assemble the two jack handle extensions (4) and wheel wrench (5), as shown.
4. Insert the open end of the extension (7) through the hole in the rear bumper (8) (hoist shaft access hole).

5. Raise the tire part way upward. Make sure the retainer is seated in the wheel opening.

6. Raise the tire fully against the underside of the vehicle by turning the wheel wrench clockwise until you hear two clicks or feel it skip twice. The cable cannot be overtightened.

7. Make sure the tire is stored securely. Push, pull, and then try to turn the tire. If the tire moves, use the wheel wrench to tighten the cable.

8. Reinstall the spare tire lock.

9. Reinstall the hoist shaft access cover.

To store the tools, do the following:

1. Return the tools (wheel wrench, jack handle, and jack handle extensions) to the tool bag.

2. Assemble wheel blocks and jack together with the wing nut.

3. Position the jack and wheel blocks in the driver side trim panel over the wheelhouse.

4. Turn the jack knob clockwise until the jack is secured tight in the mounting bracket. Be sure to position the holes in the base of the jack onto the pin in the mounting bracket.

5. Use the retaining bracket to fasten the tool bag on the stud and turn the wing nut clockwise to secure.

6. Close the trim panel door.

**Full-Size Spare Tire**

If this vehicle came with a full-size spare tire, it was fully inflated when new, however, it can lose air over time. Check the inflation pressure regularly. See *Tire Pressure* $\Diamond$ 303 and *Vehicle Load Limits* $\Diamond$ 194. For instructions on how to remove, install, or store a spare tire, see *Tire Changing* $\Diamond$ 317.

If equipped with a temporary use full-size spare tire, it is indicated on the tire sidewall. See *Tire Sidewall Labeling* $\Diamond$ 299. This spare tire should not be driven on over 112 km/h (70 mph), or 88 km/h (55 mph) when pulling a trailer, at the proper inflation pressure. Repair and replace the road tire as soon as it is convenient, and stow the spare tire for future use.
Caution

If the vehicle has four-wheel drive and a different size spare tire is installed, do not drive in four-wheel drive until the flat tire is repaired and/or replaced. The vehicle could be damaged and the repairs would not be covered by the warranty. Never use four-wheel drive when a different size spare tire is installed on the vehicle.

The vehicle may have a different size spare tire than the road tires originally installed on the vehicle. This spare tire was developed for use on this vehicle, so it is all right to drive on it. If the vehicle has four-wheel drive and a different size spare tire is installed, drive only in two-wheel drive.

After installing the spare tire on the vehicle, stop as soon as possible and check that the spare tire is correctly inflated.

Have the damaged or flat road tire repaired or replaced and installed back onto the vehicle as soon as possible so the spare tire will be available in case it is needed again.

Do not mix tires and wheels of different sizes, because they will not fit. Keep your spare tire and its wheel together. If the vehicle has a spare tire that does not match the original road tires and wheels in size and type, do not include the spare in the tire rotation.

Jump Starting

Jump Starting - North America

For more information about the vehicle battery, see Battery - North America ➤ 278.

If the vehicle's battery (or batteries) has run down, you may want to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

Warning

WARNING: Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. Batteries also contain other chemicals known to the State of California to cause harm.

(Continued)
Warning (Continued)
cancer. WASH HANDS AFTER HANDLING. See California Proposition 65 Warning 261.

⚠️ Warning

Batteries can hurt you. They can be dangerous because:
- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

If you do not follow these steps exactly, some or all of these things can hurt you.

Caution

Ignoring these steps could result in costly damage to the vehicle that would not be covered by the vehicle warranty. Trying to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle.

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

Caution

If the other vehicle does not have a 12-volt system with a negative ground, both vehicles can be damaged. Only use a vehicle that has a 12-volt system with a negative ground for jump starting.

2. If the vehicle is equipped with dual batteries, using the battery that is closer to the starter will reduce electrical resistance.

3. Get the vehicles close enough so the jumper cables can reach, but be sure the vehicles are not touching each other. If they are, it could cause an unwanted ground connection. You would not be able to start your vehicle, and the bad grounding could damage the electrical systems.

To avoid the possibility of the vehicles rolling, set the parking brake firmly on both vehicles involved in the jump start procedure. Put the automatic transmission in P (Park) or a manual transmission in Neutral before setting the parking brake. For vehicles with four-wheel-drive with a N (Neutral) transfer case position, be sure the transfer case is in a drive gear — not N (Neutral).
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**Caution**
If any accessories are left on or plugged in during the jump starting procedure, they could be damaged. The repairs would not be covered by the vehicle warranty. Whenever possible, turn off or unplug all accessories on either vehicle when jump starting.

4. Turn off the ignition on both vehicles. Unplug unnecessary accessories plugged into the accessory power outlets. Turn off the radio and all the lamps that are not needed. This will avoid sparks and help save both batteries. And it could save the radio!

5. Open the hood on the other vehicle and locate the positive (+) and negative (−) terminal locations on that vehicle.
The positive (+) terminal is under a red plastic cover at the positive battery post. To uncover the positive (+) terminal, open the red plastic cover.

For more information on the location of the remote positive (+) and remote negative (−) terminals, see Engine Compartment Overview ⇒ 264.

**Warning**
An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing, and tools away from any underhood electric fan.

**Warning**
Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.

**Warning**
Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.

6. Check that the jumper cables do not have loose or missing insulation. If they do, you could get a shock. The vehicles could be damaged too.

Before you connect the cables, here are some basic things you should know. Positive (+) will go to positive (+) or to a remote positive (+) terminal if the vehicle has one. Negative (−)
will go to a heavy, unpainted metal engine part or to a remote negative (−) terminal if the vehicle has one.

Do not connect positive (+) to negative (−) or you will get a short that would damage the battery and maybe other parts too. And do not connect the negative (−) cable to the negative (−) terminal on the dead battery because this can cause sparks.

7. Connect the red positive (+) cable to the positive (+) terminal of the vehicle with the dead battery.

8. Do not let the other end touch metal. Connect it to the positive (+) terminal of the good battery. Use a remote positive (+) terminal if the vehicle has one.

9. Connect the black negative (−) cable to the negative (−) terminal of the good battery. Use a remote negative (−) terminal if the vehicle has one.

    Do not let the other end touch anything until the next step.

10. Connect the other end of the negative (−) cable to the metal bracket that is bolted to the engine and supports the resonator, on the vehicle with the dead battery.

11. Start the vehicle with the good battery and run the engine for a while.

12. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

**Caution**

If the jumper cables are connected or removed in the wrong order, electrical shorting may occur and damage the vehicle. The repairs would not be covered by the vehicle warranty. Always connect and remove the jumper cables in the correct order, making sure that the cables do not touch each other or other metal.
Jumper Cable Removal
Reverse the sequence exactly when removing the jumper cables.
After starting the disabled vehicle and removing the jumper cables, allow it to idle for several minutes.

Towing the Vehicle

<table>
<thead>
<tr>
<th>Caution</th>
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</thead>
<tbody>
<tr>
<td>Incorrectly towing a disabled vehicle may cause damage. The damage would not be covered by the vehicle warranty. Do not lash or hook to suspension components. Use the proper straps around the tires to secure the vehicle.</td>
</tr>
</tbody>
</table>

Have the vehicle towed on a flatbed car carrier. A wheel lift tow truck could damage the vehicle. Consult your dealer or a professional towing service if the disabled vehicle must be towed.

Recreational Vehicle Towing

Recreational vehicle towing means towing the vehicle behind another vehicle, such as a motor home. The two most common types of recreational vehicle towing are dinghy and dolly towing. Dinghy towing is towing the vehicle with all four wheels on the ground. Dolly towing is towing the vehicle with two wheels on the ground and two wheels on a dolly.

Follow the tow vehicle manufacturer’s instructions. See your dealer or trailering professional for additional advice and equipment recommendations.

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>
Dinghy Towing

Two-Wheel-Drive Vehicles

Caution

If the two-wheel-drive vehicle is towed with all four wheels on the ground, the drivetrain components could be damaged. The repairs would not be covered by the vehicle warranty.

Two-wheel-drive vehicles should not be towed with all four wheels on the ground.

Four-Wheel-Drive Vehicles

Only dinghy tow four-wheel-drive vehicles with a two-speed transfer case that have an N (Neutral) and a 4 ↓ setting.

Warning

Shifting a four-wheel-drive vehicle's transfer case into N (Neutral) can cause the vehicle to roll even if the transmission is in P (Park). You or others could be injured. Set the parking brake before shifting the transfer case to N (Neutral).

To dinghy tow:

1. Position the vehicle being towed behind the tow vehicle, facing forward and on a level surface.
2. Securely attach the vehicle being towed to the tow vehicle.
3. Apply the parking brake and start the engine.
   If equipped with an Electric Parking Brake (EPB), the parking brake cannot be applied and the tires must be chocked.
4. Shift the transfer case to N (Neutral). See “Shifting into N (Neutral)” under Four-Wheel Drive 213. Check that the vehicle is in N (Neutral) by starting the engine and shifting the transmission to R (Reverse) and then to D (Drive). There should be no movement of the vehicle while shifting.
332 Vehicle Care

3. Connect the battery.
4. Apply the brake pedal.
5. Turn the ignition to ON/RUN with the engine off. Shift the transfer case out of N (Neutral) to 2. See "Shifting out of N (Neutral)" under Four-Wheel Drive. See your dealer if the transfer case cannot be shifted out of N (Neutral).
6. Check that the vehicle is in 2 by starting the engine and shifting the transmission to R (Reverse) and then to D (Drive). There should be movement of the vehicle while shifting.
7. Shift the transmission to P (Park) and turn off the ignition.
8. Disconnect the vehicle from the tow vehicle.
9. Release the parking brake.
10. Reset any lost presets.

Caution

If the steering column is locked, vehicle damage may occur.

Caution

Failure to disconnect the negative battery cable or to have it contact the terminals can cause damage to the vehicle.

8. Disconnect the negative battery cable at the battery and secure the nut and bolt. Cover the negative battery post with a non-conductive material to prevent any contact with the negative battery terminal.

9. Shift the transmission to P (Park).

10. Move the steering wheel to make sure the steering column is unlocked.

11. With a foot on the brake pedal, release the parking brake.

12. Keep the ignition key in the towed vehicle in ACC/ACCESSORY to prevent the steering column from locking. If equipped with Keyless Access, keep the RKE transmitter outside of the vehicle, and manually lock the doors. Access the vehicle as if it has a dead RKE transmitter battery, by using the key in the door lock.

Disconnecting the Towed Vehicle

Before disconnecting the towed vehicle:

1. Park on a level surface.

2. Set the parking brake, then shift the transmission to P (Park).

3. Connect the battery.

6. Check that the vehicle is in 2 by starting the engine and shifting the transmission to R (Reverse) and then to D (Drive). There should be movement of the vehicle while shifting.

7. Shift the transmission to P (Park) and turn off the ignition.

8. Disconnect the vehicle from the tow vehicle.

9. Release the parking brake.

10. Reset any lost presets.
The outside temperature display will default to 0 °C (32 °F) but will reset with normal usage.

**Dolly Towing – Front Towing (Front Wheels Off the Ground)**

**Caution**

If a two-wheel-drive vehicle is towed with the rear wheels on the ground, the transmission could be damaged. The repairs would not be covered by the vehicle warranty. Never tow the vehicle with the rear wheels on the ground.

**Caution (Continued)**

Towing a four-wheel-drive vehicle with all four wheels on the ground, or even with only two of its wheels on the ground, will damage drivetrain components. Do not tow a four-wheel-drive vehicle with any of its wheels on the ground.

**Dolly Towing – Rear Towing (Rear Wheels Off the Ground) – Four-Wheel-Drive Vehicles**

**Caution**

Towing a four-wheel-drive vehicle with all four wheels on the ground, or even with only two of its wheels on the ground, will damage drivetrain components. Do not tow a four-wheel-drive vehicle with any of its wheels on the ground.

This vehicle should not be towed with the rear wheels on the ground.
334 Vehicle Care

This vehicle should not be towed with any wheels on the ground.

Dolly Towing – Rear Towing (Rear Wheels Off the Ground) – Two-Wheel-Drive Vehicles

To dolly tow the vehicle from the rear:

1. Attach the dolly to the tow vehicle following the dolly manufacturer’s instructions.
2. Drive the rear wheels onto the dolly.
3. Firmly set the parking brake. See Parking Brake © 217.
4. Put the transmission in P (Park).
5. Secure the vehicle to the dolly following the manufacturer’s instructions.
6. Use an adequate clamping device designed for towing to ensure that the front wheels are locked into the straight position.
7. Turn the ignition to LOCK/OFF.

Appearance Care

Exterior Care

Locks

Locks are lubricated at the factory. Use a de-icing agent only when absolutely necessary, and have the locks greased after using. See Recommended Fluids and Lubricants © 353.

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 (Continued)
Caution (Continued)

Avoid using high-pressure washes closer than 30 cm (12 in) to the surface of the vehicle. Use of power washers exceeding 8,274 kPa (1,200 psi) can result in damage or removal of paint and decals.

The ⚠️ symbol is on any underhood compartment electrical center that should not be power washed. This could cause damage that would not be covered by the vehicle warranty.

If using an automatic car wash, follow the car wash instructions. The windshield wiper and rear window wiper, if equipped, must be off. Remove any accessories that may be damaged or interfere with the car wash equipment.

Rinse the vehicle well, before washing and after, to remove all cleaning agents completely. If they are allowed to dry on the surface, they could stain.

Dry the finish with a soft, clean chamois or an all-cotton towel to avoid surface scratches and water spotting.

Finish Care

Application of aftermarket clearcoat sealant/wax materials is not recommended. If painted surfaces are damaged, see your dealer to have the damage assessed and repaired. Foreign materials such as calcium chloride and other salts, ice melting agents, road oil and tar, tree sap, bird droppings, chemicals from industrial chimneys, etc., can damage the vehicle’s finish if they remain on painted surfaces. Wash the vehicle as soon as possible. If necessary, use non-abrasive cleaners that are marked safe for painted surfaces to remove foreign matter.

Occasional hand waxing or mild polishing should be done to remove residue from the paint finish. See your dealer for approved cleaning products.

Do not apply waxes or polishes to uncoated plastic, vinyl, rubber, decals, simulated wood, or flat paint as damage can occur.

Caution

Machine compounding or aggressive polishing on a basecoat/clearcoat paint finish may damage it. Use only non-abrasive waxes and polishes that are made for a basecoat/clearcoat paint finish on the vehicle.

To keep the paint finish looking new, keep the vehicle garaged or covered whenever possible.
336 Vehicle Care

Protecting Exterior Bright Metal Moldings

Caution

Failure to clean and protect the bright metal moldings can result in a hazy white finish or pitting. This damage would not be covered by the vehicle warranty.

The bright metal moldings on the vehicle are aluminum, chrome or stainless steel. To prevent damage always follow these cleaning instructions:

- Be sure the molding is cool to the touch before applying any cleaning solution.
- Use only approved cleaning solutions for aluminum, chrome or stainless steel. Some cleaners are highly acidic or contain alkaline substances and can damage the moldings.
- Always dilute a concentrated cleaner according to the manufacturer's instructions.
- Do not use cleaners that are not intended for automotive use.
- Use a nonabrasive wax on the vehicle after washing to protect and extend the molding finish.

Cleaning Exterior Lamps/ Lenses, Emblems, Decals, and Stripes

Use only lukewarm or cold water, a soft cloth, and a car washing soap to clean exterior lamps, lenses, emblems, decals, and stripes. Follow instructions under "Washing the Vehicle" previously in this section.

Lamp covers are made of plastic, and some have a UV protective coating. Do not clean or wipe them when dry.

Do not use any of the following on lamp covers:
- Abrasive or caustic agents.
- Washer fluids and other cleaning agents in higher concentrations than suggested by the manufacturer.
- Solvents, alcohols, fuels, or other harsh cleaners.
- Ice scrapers or other hard items.
- Aftermarket appearance caps or covers while the lamps are illuminated, due to excessive heat generated.

Caution

Failure to clean lamps properly can cause damage to the lamp cover that would not be covered by the vehicle warranty.

Caution

Using wax on low gloss black finish stripes can increase the gloss level and create a non-uniform finish. Clean low gloss stripes with soap and water only.
Air Intakes
Clear debris from the air intakes, between the hood and windshield, when washing the vehicle.

Windshield and Wiper Blades
Clean the outside of the windshield with glass cleaner.
Clean rubber blades using a lint-free cloth or paper towel soaked with windshield washer fluid or a mild detergent. Wash the windshield thoroughly when cleaning the blades. Bugs, road grime, sap, and a buildup of vehicle wash/wax treatments may cause wiper streaking.
Replace the wiper blades if they are worn or damaged. Damage can be caused by extreme dusty conditions, sand, salt, heat, sun, snow, and ice.

Weatherstrips
Apply Dielectric silicone grease on weatherstrips to make them last longer, seal better, and not stick or squeak. Lubricate weatherstrips at least once a year. Hot, dry climates may require more frequent application. Black marks from rubber material on painted surfaces can be removed by rubbing with a clean cloth. See Recommended Fluids and Lubricants ☞ 353.

Tires
Use a stiff brush with tire cleaner to clean the tires.

Caution
Using petroleum-based tire dressing products on the vehicle may damage the paint finish and/or tires. When applying a tire dressing, always wipe off any overspray from all painted surfaces on the vehicle.

Wheels and Trim — Aluminum or Chrome
Use a soft, clean cloth with mild soap and water to clean the wheels. After rinsing thoroughly with clean water, dry with a soft, clean towel. A wax may then be applied.

Caution
Chrome wheels and other chrome trim may be damaged if the vehicle is not washed after driving on roads that have been sprayed with magnesium, calcium, or sodium chloride. These chlorides are used on roads for conditions such as ice and dust. Always wash the chrome with soap and water after exposure.

Caution
To avoid surface damage, do not use strong soaps, chemicals, abrasive polishes, cleaners, brushes, or cleaners that contain acid on aluminum or chrome-plated wheels. Use only approved cleaners. Also, never drive a vehicle with aluminum or chrome-plated wheels through an automatic car wash that uses silicone carbide tire cleaning
338 Vehicle Care

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 rotors for surface condition. Inspect drum brake linings/shoes for wear or cracks. Inspect other brake parts, including drums, wheel cylinders, calipers, parking brake, master cylinder, brake fluid reservoir, vacuum pipes, electric vacuum pump including bracket and vent hose, if equipped.

Steering, Suspension, and Chassis Components

Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year.

Inspect power steering for proper hook-up, binding, leaks, cracks, chafing, etc. Visually check constant velocity joint boots and axle seals for leaks. For 1500 Series vehicles, at least every other oil change lubricate the outer tie rod ends. Control arm ball joints on 1500 Series vehicles are maintenance-free.

Caution

Lubrication of applicable Steering/Suspension points should not be done unless the temperature is −12 °C (10 °F) or higher, or damage could result.

Body Component Lubrication

Lubricate all key lock cylinders, hood hinges, liftgate hinges, steel fuel door hinge and power assist step hinges, unless the components are plastic. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

Underbody Maintenance

At least twice a year, spring and fall, use plain water to flush any corrosive materials from the underbody. Take care to thoroughly clean any areas where mud and other debris can collect. If equipped with power running boards, extend them and then use a high pressure wash to clean all joints and gaps. Do not directly power wash the transfer case and/or front/rear axle output seals. High pressure water can overcome the seals and contaminate the fluid. Contaminated fluid will decrease the life of the transfer case and/or axles and should be replaced.

Sheet Metal Damage

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion...
Vehicle Care 339

Material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the vehicle warranty.

**Finish Damage**

Quickly repair minor chips and scratches with touch-up materials available from your dealer to avoid corrosion. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

**Chemical Paint Spotting**

Airborne pollutants can fall upon and attack painted vehicle surfaces causing blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface. See “Finish Care” previously in this section.

**Interior Care**

To prevent dirt particle abrasions, regularly clean the vehicle's interior. Immediately remove any soils.

Newspapers or dark garments can transfer color to the vehicle’s interior.

Use a soft bristle brush to remove dust from knobs and crevices on the instrument cluster. Using a mild soap solution, immediately remove hand lotions, sunscreen, and insect repellent from all interior surfaces or permanent damage may result.

Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage. Apply all cleaners directly to the cleaning cloth. Do not spray cleaners on any switches or controls. Remove cleaners quickly.

Before using cleaners, read and follow all safety instructions on the label. While cleaning the interior, open the doors and windows to get proper ventilation.

To prevent damage, do not clean the interior using the following cleaners or techniques:

- Never use a 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.
340 Vehicle Care

<table>
<thead>
<tr>
<th>Caution</th>
</tr>
</thead>
<tbody>
<tr>
<td>To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.</td>
</tr>
</tbody>
</table>

Cleaning the windshield with water during the first three to six months of ownership will reduce tendency to fog.

**Speaker Covers**
Vacuum around a speaker cover gently, so that the speaker will not be damaged. Clean spots with water and mild soap.

**Coated Moldings**
Coated moldings should be cleaned.
- When lightly soiled, wipe with a sponge or soft, lint-free cloth dampened with water.
- When heavily soiled, use warm soapy water.

**Fabric/Carpet/Suede**
Start by vacuuming the surface using a soft brush attachment. If a rotating vacuum brush attachment is being used, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible:
- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soils, remove as much as possible prior to vacuuming.

To clean:
1. Saturate a clean, lint-free colorfast cloth with water. Microfiber cloth is recommended to prevent lint transfer to the fabric or carpet.
2. Remove excess moisture by gently wringing until water does not drip from the cleaning cloth.
3. Start on the outside edge of the soil and gently rub toward the center. Fold the cleaning cloth to a clean area frequently to prevent forcing the soil in to the fabric.
4. Continue gently rubbing the soiled area until there is no longer any color transfer from the soil to the cleaning cloth.
5. If the soil is not completely removed, use a mild soap solution followed only by plain water.

If the soil is not completely removed, it may be necessary to use a commercial upholstery cleaner or spot lifter. Test a small hidden area for colorfastness before using a commercial upholstery cleaner or spot lifter. If ring formation occurs, clean the entire fabric or carpet.

After cleaning, use a paper towel to blot excess moisture.

**Cleaning High Gloss Surfaces and Vehicle Information and Radio Displays**
Use a microfiber cloth on high gloss surfaces or vehicle displays. First, use a soft bristle brush to remove
dirt that can scratch the surface. Then gently clean by rubbing with a microfiber cloth. Never use window cleaners or solvents. Periodically hand wash the microfiber cloth separately, using mild soap. Do not use bleach or fabric softener. Rinse thoroughly and air dry before next use.

**Caution**

Do not attach a device with a suction cup to the display. This may cause damage and would not be covered by the vehicle warranty.

**Instrument Panel, Leather, Vinyl, Other Plastic Surfaces, Low Gloss Paint Surfaces, and Natural Open Pore Wood Surfaces**

Use a soft microfiber cloth dampened with water to remove dust and loose dirt. For a more thorough cleaning, use a soft microfiber cloth dampened with a mild soap solution.

**Caution**

Soaking or saturating leather, especially perforated leather, as well as other interior surfaces, may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, or spot removers. Do not use cleaners that contain silicone or wax-based products. Cleaners containing these solvents can permanently change the appearance and feel of leather or soft trim, and are not recommended.

Do not use cleaners that increase gloss, especially on the instrument panel. Reflected glare can decrease visibility through the windshield under certain conditions.

**Cargo Cover and Convenience Net**

Wash with warm water and mild detergent. Do not use chlorine bleach. Rinse with cold water, and then dry completely.

**Care of Safety Belts**

Keep belts clean and dry.
## Vehicle Care

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

### Floor Mats

#### Warning
If a floor mat is the wrong size or is not properly installed, it can interfere with the pedals. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

Use the following guidelines for proper floor mat usage:
- The original equipment floor mats were designed for your vehicle. If the floor mats need replacing, it is recommended that GM certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the pedals. Always check that the floor mats do not interfere with the pedals.
- Do not use a floor mat if the vehicle is not equipped with a floor mat retainer on the driver side floor.
- Use the floor mat with the correct side up. Do not turn it over.
- Do not place anything on top of the driver side floor mat.
- Use only a single floor mat on the driver side.
- Do not place one floor mat on top of another.

### Removing and Replacing the Floor Mats
Pull up on the rear of the driver side floor mat to unlock each retainer and remove.

Reinstall by lining up the floor mat retainer openings over the carpet retainers and snapping into position. Make sure the floor mat is properly secured in place. Verify the floor mat does not interfere with the pedals.
## Service and Maintenance

### General Information

Your vehicle is an important investment. This section describes the required maintenance for the vehicle. Follow this schedule to help protect against major repair expenses resulting from neglect or inadequate maintenance. It may also help to maintain the value of the vehicle if it is sold. It is the responsibility of the owner to have all required maintenance performed.

Your dealer has trained technicians who can perform required maintenance using genuine replacement parts. They have up-to-date tools and equipment for fast and accurate diagnostics. Many dealers have extended evening and Saturday hours, courtesy transportation, and online scheduling to assist with service needs.

The Tire Rotation and Required Services are the responsibility of the vehicle owner. It is recommended to have your dealer perform these services every 12,000 km/7,500 mi. Proper vehicle maintenance helps to keep the vehicle in good working condition, improves fuel economy, and reduces vehicle emissions.

### 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.

<table>
<thead>
<tr>
<th>Service and Maintenance</th>
<th>General Information</th>
<th>Maintenance Schedule</th>
<th>Special Application Services</th>
<th>Additional Maintenance and Care</th>
<th>Recommended Fluids, Lubricants, and Parts</th>
<th>Maintenance Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Information</td>
<td>343</td>
<td>344</td>
<td>350</td>
<td>350</td>
<td>353</td>
<td>356</td>
</tr>
</tbody>
</table>

### Additional Maintenance and Care

#### Maintenance Schedule

Maintenance Schedule

### Recommended Fluids, Lubricants, and Parts

Recommended Fluids and Lubricants

Maintenance Replacement Parts

### Maintenance Records

Maintenance Records
344 Service and Maintenance

Because of the way people use vehicles, maintenance needs vary. There may need to be more frequent checks and services. The Additional Required Services - Normal are for vehicles that:

- Carry passengers and cargo within recommended limits on the Tire and Loading Information label. See Vehicle Load Limits 194.
- Are driven on reasonable road surfaces within legal driving limits.
- Use the recommended fuel. See Fuel 242.

Refer to the information in the Maintenance Schedule Additional Required Services - Normal chart.

The Additional Required Services - Severe are for vehicles that are:

- Mainly driven in heavy city traffic in hot weather.
- Mainly driven in hilly or mountainous terrain.
- Frequently towing a trailer.
- Used for high speed or competitive driving.
- Used for taxi, police, or delivery service.

Refer to the information in the Maintenance Schedule Additional Required Services - Severe chart.

⚠️ Warning

Performing maintenance work can be dangerous and can cause serious injury. Perform maintenance work only if the required information, proper tools, and equipment are available. If they are not, see your dealer to have a trained technician do the work. See Doing Your Own Service Work 262.

maintenance Schedule

Owner Checks and Services

At Each Fuel Stop
- Check the engine oil level. See Engine Oil 265.

Once a Month
- Check the tire inflation pressures. See Tire Pressure 303.
- Inspect the tires for wear. See Tire Inspection 309.
- Check the windshield washer fluid level. See Washer Fluid 275.

Engine Oil Change

When the CHANGE ENGINE OIL SOON message displays, have the engine oil and filter changed within the next 1000 km/600 mi. If driven under the best conditions, the engine oil life system may not indicate the need for vehicle service for up to a year. The engine oil and filter must be changed at least once
a year and the oil life system must be reset. Your trained dealer technician can perform this work. If the engine oil life system is reset accidentally, service the vehicle within 5,000 km/3,000 mi since the last service. Reset the oil life system when the oil is changed. See Engine Oil Life System 267.

Tire Rotation and Required Services Every 12,000 km/7,500 mi

Rotate the tires, if recommended for the vehicle, and perform the following services. See Tire Rotation 309.

- Check engine oil level and oil life percentage. If needed, change engine oil and filter, and reset oil life system. See Engine Oil 265 and Engine Oil Life System 267.
- Check engine coolant level. See Engine Coolant 271.
- Check windshield washer fluid level. See Washer Fluid 275.
- Visually inspect windshield wiper blades for wear, cracking, or contamination. See Exterior Care 334. Replace worn or damaged wiper blades. See Wiper Blade Replacement 282.
- Check tire inflation pressures. See Tire Pressure 303.
- Inspect tire wear. See Tire Inspection 309.
- Visually check for fluid leaks.
- Inspect engine air cleaner filter. See Engine Air Cleaner/Filter 269.
- Inspect brake system. See Exterior Care 334.
- Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear at least once a year. See Exterior Care 334. Lubricate the suspension and steering components at least every other oil change (if equipped with grease fittings).
- Check restraint system components. See Safety System Check 72.
- Visually inspect fuel system for damage or leaks.
- Visually inspect exhaust system and nearby heat shields for loose or damaged parts.
- Lubricate body components. See Exterior Care 334.
- Check starter switch. See Starter Switch Check 281.
346 Service and Maintenance

- Check automatic transmission shift lock control function. See *Automatic Transmission Shift Lock Control Function Check* \(\triangleright\) 282.

- Check parking brake and automatic transmission park mechanism. See *Park Brake and P (Park) Mechanism Check* \(\triangleright\) 282.

- Check accelerator pedal for damage, high effort, or binding. Replace if needed.

- Visually inspect gas strut for signs of wear, cracks, or other damage. Check the hold open ability of the strut. See your dealer if service is required.

- Inspect sunroof track and seal, if equipped. See *Sunroof* \(\triangleright\) 50.

- Verify spare tire key lock operation and lubricate as needed. See *Tire Changing* \(\triangleright\) 317.
### Maintenance Schedule Additional Required Services - Normal

<table>
<thead>
<tr>
<th>KM</th>
<th>12,000 km/7,500 mi</th>
<th>24,000 km/15,000 mi</th>
<th>36,000 km/22,500 mi</th>
<th>48,000 km/30,000 mi</th>
<th>60,000 km/37,500 mi</th>
<th>72,000 km/45,000 mi</th>
<th>84,000 km/52,500 mi</th>
<th>96,000 km/60,000 mi</th>
<th>108,000 km/67,500 mi</th>
<th>120,000 km/75,000 mi</th>
<th>132,000 km/82,500 mi</th>
<th>144,000 km/90,000 mi</th>
<th>156,000 km/97,500 mi</th>
<th>168,000 km/105,000 mi</th>
<th>180,000 km/112,500 mi</th>
<th>192,000 km/120,000 mi</th>
<th>204,000 km/127,500 mi</th>
<th>216,000 km/135,000 mi</th>
<th>228,000 km/142,500 mi</th>
<th>240,000 km/150,000 mi</th>
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</thead>
<tbody>
<tr>
<td>Rotate tires and perform Required Services. Check engine oil level and oil life percentage. Change engine oil and filter, if needed.</td>
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<td>Replace passenger compartment air filter. (1)</td>
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<td>✓</td>
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</tr>
<tr>
<td>Inspect evaporative control system. (2)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Replace engine air cleaner filter. (3)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Change transfer case fluid, if equipped with 4WD. (4)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Replace spark plugs. Inspect spark plug wires.</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Drain and fill engine cooling system. (5)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tr>
<tr>
<td>Visually inspect accessory drive belts. (6)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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<tr>
<td>Replace brake fluid. (7)</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tbody>
</table>

**Footnotes — Maintenance Schedule Additional Required Services - Normal**

(1) Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, poor air quality, areas with high dust levels or are sensitive to environmental allergens. Filter replacement may also be needed if you notice reduced airflow, windows fogging up, or odors. Your local GM Service location can help you determine when it is the right time to replace your filter.

(2) Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition.

(3) Or every four years, whichever comes first. If driving in dusty conditions, inspect the filter at each oil change or more often as needed.
348 Service and Maintenance

(4) Do not directly power wash the transfer case output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and should be replaced.

(5) Or every five years, whichever comes first. See Cooling System ☞ 270.

(6) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

(7) Or every three years, whichever comes first.
### Maintenance Schedule Additional Required Services - Severe

<table>
<thead>
<tr>
<th>Mileage Range</th>
<th>0-12,000 km/7,500 mi</th>
<th>12,000 km/7,500 mi</th>
<th>24,000 km/15,000 mi</th>
<th>36,000 km/22,500 mi</th>
<th>48,000 km/30,000 mi</th>
<th>60,000 km/37,500 mi</th>
<th>72,000 km/45,000 mi</th>
<th>84,000 km/52,500 mi</th>
<th>96,000 km/60,000 mi</th>
<th>108,000 km/67,500 mi</th>
<th>120,000 km/75,000 mi</th>
<th>132,000 km/82,500 mi</th>
<th>144,000 km/90,000 mi</th>
<th>156,000 km/97,500 mi</th>
<th>168,000 km/105,000 mi</th>
<th>180,000 km/112,500 mi</th>
<th>192,000 km/120,000 mi</th>
<th>204,000 km/127,500 mi</th>
<th>216,000 km/135,000 mi</th>
<th>228,000 km/142,500 mi</th>
<th>240,000 km/150,000 mi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
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</tbody>
</table>

- **Rotate tires and perform Required Services. Check engine oil level and oil life percentage.**
- **Change engine oil and filter, if needed.**
- **Replace passenger compartment air filter. (1)**
- **Inspect evaporative control system. (2)**
- **Replace engine air cleaner filter. (3)**
- **Change automatic transmission fluid and filter.**
- **Change transfer case fluid, if equipped with AWD or 4WD. (4)**
- **Replace spark plugs. Inspect spark plug wires.**
- **Drain and fill engine cooling system. (5)**
- **Visually inspect accessory drive belts. (6)**
- **Replace brake fluid. (7)**

### Footnotes — Maintenance Schedule Additional Required Services - Severe

**1** Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, poor air quality, areas with high dust levels or are sensitive to environmental allergens. Filter replacement may also be needed if you notice reduced airflow, windows fogging up, or odors. Your local GM Service location can help you determine when it is the right time to replace your filter.

**2** Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition.

**3** Or every four years, whichever comes first. If driving in dusty conditions, inspect the filter at each oil change or more often as needed.
350 Service and Maintenance

(4) Do not directly power wash the transfer case output seals. High pressure water can overcome the seals and contaminate the transfer case fluid. Contaminated fluid will decrease the life of the transfer case and should be replaced.

(5) Or every five years, whichever comes first. See Cooling System 270.

(6) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

(7) Or every three years, whichever comes first.

Special Application Services

- Severe Commercial Use Vehicles Only: Lubricate chassis components every 5 000 km/3,000 mi.
- Have underbody flushing service performed. See "Underbody Maintenance" in Exterior Care 334.

Additional Maintenance and Care

Your vehicle is an important investment and caring for it properly may help to avoid future costly repairs. To maintain vehicle performance, additional maintenance services may be required.

It is recommended that your dealer perform these services — their trained dealer technicians know your vehicle best. Your dealer can also perform a thorough assessment with a multi-point inspection to recommend when your vehicle may need attention.

The following list is intended to explain the services and conditions to look for that may indicate services are required.
Battery
The 12-volt battery supplies power to start the engine and operate any additional electrical accessories.
- To avoid break-down or failure to start the vehicle, maintain a battery with full cranking power.
- Trained dealer technicians have the diagnostic equipment to test the battery and ensure that the connections and cables are corrosion-free.

Belts
- Belts may need replacing if they squeak or show signs of cracking or splitting.
- Trained dealer technicians have access to tools and equipment to inspect the belts and recommend adjustment or replacement when necessary.

Brakes
Brakes stop the vehicle and are crucial to safe driving.
- Signs of brake wear may include chirping, grinding, or squealing noises, or difficulty stopping.
- Trained dealer technicians have access to tools and equipment to inspect the brakes and recommend quality parts engineered for the vehicle.

Fluids
Proper fluid levels and approved fluids protect the vehicle’s systems and components. See Recommended Fluids and Lubricants for GM approved fluids.
- Engine oil and windshield washer fluid levels should be checked at every fuel fill.
- Instrument cluster lights may come on to indicate that fluids may be low and need to be filled.

Hoses
Hoses transport fluids and should be regularly inspected to ensure that there are no cracks or leaks. With a multi-point inspection, your dealer can inspect the hoses and advise if replacement is needed.

Lamps
Properly working headlamps, taillamps, and brake lamps are important to see and be seen on the road.
- Signs that the headlamps need attention include dimming, failure to light, cracking, or damage. The brake lamps need to be checked periodically to ensure that they light when braking.
- With a multi-point inspection, your dealer can check the lamps and note any concerns.
352 Service and Maintenance

Shocks and Struts

Shocks and struts help aid in control for a smoother ride.

- Signs of wear may include steering wheel vibration, bounce/sway while braking, longer stopping distance, or uneven tire wear.
- As part of the multi-point inspection, trained dealer technicians can visually inspect the shocks and struts for signs of leaking, blown seals, or damage, and can advise when service is needed.

Tires

Tires need to be properly inflated, rotated, and balanced. Maintaining the tires can save money and fuel, and can reduce the risk of tire failure.

- Signs that the tires need to be replaced include three or more visible treadwear indicators; cord or fabric showing through the rubber; cracks or cuts in the tread or sidewall; or a bulge or split in the tire.

- Trained dealer technicians can inspect and recommend the right tires. Your dealer can also provide tire/wheel balancing services to ensure smooth vehicle operation at all speeds. Your dealer sells and services name brand tires.

Vehicle Care

To help keep the vehicle looking like new, vehicle care products are available from your dealer. For information on how to clean and protect the vehicle’s interior and exterior, see Interior Care and Exterior Care.

Wheel Alignment

Wheel alignment is critical for ensuring that the tires deliver optimal wear and performance.

- Signs that the alignment may need to be adjusted include pulling, improper vehicle handling, or unusual tire wear.
- Your dealer has the required equipment to ensure proper wheel alignment.

Windshield

For safety, appearance, and the best viewing, keep the windshield clean and clear.

- Signs of damage include scratches, cracks, and chips.
- Trained dealer technicians can inspect the windshield and recommend proper replacement if needed.

Wiper Blades

Wiper blades need to be cleaned and kept in good condition to provide a clear view.

- Signs of wear include streaking, skipping across the windshield, and worn or split rubber.
- Trained dealer technicians can check the wiper blades and replace them when needed.
## Recommended Fluids, Lubricants, and Parts

### Recommended Fluids and Lubricants

Fluids and lubricants identified below by name, part number, or specification can be obtained from your dealer.

<table>
<thead>
<tr>
<th>Usage</th>
<th>Fluid/Lubricant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Oil</td>
<td>Use only engine oil meeting the dexos1™ specification of the proper SAE viscosity grade. Look for the dexos1 approved logo for GM approved engine oil. See Engine Oil 265.</td>
</tr>
<tr>
<td>Engine Coolant</td>
<td>50/50 mixture of clean, drinkable water and use only DEX-COOL® Coolant. See Engine Coolant 271.</td>
</tr>
<tr>
<td>Hydraulic Brake System</td>
<td>DOT 3 Hydraulic Brake Fluid (GM Part No. 19299818, in Canada 19299819).</td>
</tr>
<tr>
<td>Windshield Washer</td>
<td>Automotive windshield washer fluid that meets regional freeze protection requirements.</td>
</tr>
<tr>
<td>Chassis Lubrication</td>
<td>Chassis Lubricant (GM Part No. 12377985, in Canada 88901242) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.</td>
</tr>
<tr>
<td>Front Axle (Four-Wheel Drive)</td>
<td>SAE 75W-90 Synthetic Axle Lubricant (GM Part No. 88900401, in Canada 89021678).</td>
</tr>
<tr>
<td>Rear Axle</td>
<td>SAE 75W-85 Synthetic Axle Lubricant (GM Part No. 19390457, in Canada 19300458).</td>
</tr>
<tr>
<td>Transfer Case (Four-Wheel Drive)</td>
<td>DEXRON®-VI Automatic Transmission Fluid.</td>
</tr>
</tbody>
</table>
354 Service and Maintenance

<table>
<thead>
<tr>
<th>Usage</th>
<th>Fluid/Lubricant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Front Axle Propshaft Spline or One-Piece Propshaft Spline (Two-Wheel Drive with Auto. Trans.)</td>
<td>Spline Lubricant, Special Lubricant (GM Part No. 19257121, in Canada 19257122).</td>
</tr>
<tr>
<td>Key Lock Cylinders, Hood Hinges, Power Assist Steps, and Outer Tailgate Handle Pivot Points</td>
<td>Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474).</td>
</tr>
<tr>
<td>Weatherstrip Conditioning</td>
<td>Weatherstrip Lubricant (GM Part No. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. 12345579, in Canada 10953481).</td>
</tr>
<tr>
<td>Weatherstrip Squeaks</td>
<td>Synthetic Grease with Teflon, Superlube (GM Part No. 12371287, in Canada 10953437).</td>
</tr>
</tbody>
</table>

Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

<table>
<thead>
<tr>
<th>Part</th>
<th>GM Part Number</th>
<th>ACDelco Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Air Cleaner/Filter</td>
<td>22845992</td>
<td>A3181C</td>
</tr>
<tr>
<td>Oil Filter</td>
<td>89017525</td>
<td>PF63</td>
</tr>
<tr>
<td>Passenger Compartment Air Filter</td>
<td>22808781</td>
<td>CF188</td>
</tr>
<tr>
<td>Spark Plugs</td>
<td>12622441</td>
<td>41-114</td>
</tr>
<tr>
<td>Wiper Blades</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver Side – 55 cm (21.7 in)</td>
<td>22756331</td>
<td></td>
</tr>
<tr>
<td>Part</td>
<td>GM Part Number</td>
<td>ACDelco Part Number</td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Passenger Side – 55 cm (21.7 in)</td>
<td>22756331</td>
<td>—</td>
</tr>
<tr>
<td>Rear – 33 cm (13.0 in)</td>
<td>22956295</td>
<td>—</td>
</tr>
</tbody>
</table>
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**Maintenance Records**

After the scheduled services are performed, record the date, odometer reading, who performed the service, and the type of services performed in the boxes provided. Retain all maintenance receipts.

<table>
<thead>
<tr>
<th>Date</th>
<th>Odometer Reading</th>
<th>Serviced By</th>
<th>Services Performed</th>
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<tbody>
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</tbody>
</table>
Technical Data

Vehicle Identification
Vehicle Identification Number (VIN) .................. 357
Service Parts Identification Label ...................... 357

Vehicle Data
Capacities and Specifications ....................... 358
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Vehicle Identification

Vehicle Identification Number (VIN)

This legal identifier is in the front corner of the instrument panel, on the left side of the vehicle. It can be seen through the windshield from outside. The VIN also appears on the Vehicle Certification and Service Parts labels and certificates of title and registration.

Engine Identification

The eighth character in the VIN is the engine code. This code identifies the vehicle's engine, specifications, and replacement parts. See "Engine Specifications" under Capacities and Specifications \( 358 \) for the vehicle's engine code.

Service Parts Identification Label

This label, on the inside of the glove box, has the following information:

- Vehicle Identification Number (VIN).
- Model designation.
- Paint information.
- Production options and special equipment.

Do not remove this label from the vehicle.
## Vehicle Data

### Capacities and Specifications

The following approximate capacities are given in metric and English conversions. See *Recommended Fluids and Lubricants* 353 for more information.

<table>
<thead>
<tr>
<th>Application</th>
<th>Capacities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Metric</td>
</tr>
<tr>
<td>Air Conditioning Refrigerant</td>
<td>For the air conditioning system refrigerant type and charge amount, see the refrigerant label under the hood. See your dealer for more information.</td>
</tr>
<tr>
<td>Cooling System</td>
<td>16.5 L</td>
</tr>
<tr>
<td>Engine Oil with Filter</td>
<td>7.6 L</td>
</tr>
<tr>
<td>Fuel Tank</td>
<td></td>
</tr>
<tr>
<td>Short Wheelbase</td>
<td>98.4 L</td>
</tr>
<tr>
<td>Long Wheelbase</td>
<td>119.2 L</td>
</tr>
<tr>
<td>Transfer Case Fluid</td>
<td>1.5 L</td>
</tr>
<tr>
<td>Wheel Nut Torque</td>
<td>190 N•m</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Engine</th>
<th>VIN Code</th>
<th>Spark Plug Gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.2L V8</td>
<td>J</td>
<td>0.95–1.10mm (0.037–0.043 in)</td>
</tr>
</tbody>
</table>

Engine Drive Belt Routing
Customer Information

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Event Data Recorders ................. 372
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Customer Satisfaction Procedure
Your satisfaction and goodwill are important to your dealer and to GMC. Normally, any concerns with the sales transaction or the operation of the vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your concern has not been resolved to your satisfaction, the following steps should be taken:

STEP ONE: Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service, or parts manager, contact the owner of your dealership or the general manager.

STEP TWO: If after contacting a member of dealership management, it appears your concern cannot be
resolved by your dealership without further help, in the U.S., call 1-800-462-8782. In Canada, call General Motors of Canada Customer Care Centre at 1-800-263-3777 (English), or 1-800-263-7854 (French).

We encourage you to call the toll-free number in order to give your inquiry prompt attention. Have the following information available to give the Customer Assistance representative:

- Vehicle Identification Number (VIN). This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.
- Dealership name and location.
- Vehicle delivery date and present mileage.

When contacting GMC, remember that your concern will likely be resolved at a dealer’s facility. That is why we suggest following Step One first.

**STEP THREE — U.S. Owners:**
Both General Motors and your dealer are committed to making sure you are completely satisfied with your new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you can file with the Better Business Bureau (BBB) Auto Line® Program to enforce your rights.

The BBB Auto Line Program is an out-of-court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program
Council of Better Business Bureaus, Inc.
4200 Wilson Boulevard
Suite 800
Arlington, VA 22203-1838
Telephone: 1-800-955-5100
http://www.bbb.org/council/programs-services/dispute-handling-and-resolution/bbb-auto-line

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage, and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.

**STEP THREE — Canadian Owners:** In the event that you do not feel your concerns have been addressed after following the procedure outlined in Steps One and Two, General Motors of Canada
Limited wants you to be aware of its participation in a no-charge Mediation/Arbitration Program. General Motors of Canada Limited has committed to binding arbitration of owner disputes involving factory-related vehicle service claims. The program provides for the review of the facts involved by an impartial third party arbiter, and may include an informal hearing before the arbiter. The program is designed so that the entire dispute settlement process, from the time you file your complaint to the final decision, should be completed in about 70 days. We believe our impartial program offers advantages over courts in most jurisdictions because it is informal, quick, and free of charge.

For further information concerning eligibility in the Canadian Motor Vehicle Arbitration Plan (CAMVAP), call toll-free 1-800-207-0685, or call the General Motors Customer Care Centre, 1-800-263-3777 (English), 1-800-263-7854 (French), or write to:
Mediation/Arbitration Program
c/o Customer Care Centre
General Motors of Canada Limited
Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7
Your inquiry should be accompanied by the Vehicle Identification Number (VIN).

Customer Assistance Offices

GMC encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail GMC, the letter should be addressed to:

United States and Puerto Rico
GMC Customer Assistance Center
P.O. Box 33172
Detroit, MI 48232-5172

Canada
General Motors of Canada Limited
Customer Care Centre, Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7
www.gmc.ca
1-800-263-3777 (English)
1-800-263-7854 (French)
1-800-263-3830 (For Text Telephone Devices (TTYs))
Roadside Assistance:
1-888-881-3302
From U.S. Virgin Islands:
1-800-496-9994

Overseas
Please contact the local General Motors Business Unit.
Customer Assistance for Text Telephone (TTY) Users

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), GMC has TTY equipment available at its Customer Assistance Center. Any TTY user in the U.S. can communicate with GMC by dialing: 1-888-889-2438. TTY users in Canada can dial 1-800-263-3830.

Online Owner Center

Online Owner Experience (U.S.) my.gmc.com

The GMC online owner experience is a one-stop resource that allows interaction with GMC and keeps important vehicle-specific information in one place.

Membership Benefits

agog (Vehicle Information) : Download owner manuals and view vehicle-specific how-to videos.

(Maintenance Information) : View maintenance schedules, alerts, and OnStar onboard vehicle diagnostic information. Schedule service appointments.

(Service History) : View and print dealer-recorded service records and self-recorded service records.

(Preferred Dealer Information) : Select a preferred dealer and view dealer location, maps, phone numbers, and hours.

(Warranty Tracking Information) : Track your vehicle’s warranty information.

(Recall Information) : View active recalls by Vehicle Identification Number (VIN). See Vehicle Identification Number (VIN) 357.

(Other Account Information) : View GM Card, SiriusXM Satellite radio (if equipped), and OnStar account information (if equipped).

(Live Chat Support) : Chat live with online help representatives.

Visit my.gmc.com to register your vehicle.

GMC Owner Centre (Canada) gmcowner.ca

Take a trip to the GMC Owner Centre:

- Chat live with online help representatives.
- Use the Vehicle Tools section.
- Access third party enthusiast sites and social media networks.
- Locate owner resources such as lease-end, financing, and warranty information.
- Retrieve your favorite articles, quizzes, tips, and multimedia galleries organized into the Features and Auto Care Sections.
- Download the owner manual for your vehicle, quickly and easily.
- Find the GMC-recommended maintenance services for your vehicle.
GM Mobility Reimbursement Program

This program is available to qualified applicants for cost reimbursement of eligible aftermarket adaptive equipment required for the vehicle, such as hand controls or a wheelchair/scooter lift for the vehicle.

For more information on the limited offer, visit www.gmmobility.com or call the GM Mobility Assistance Center at 1-800-323-9935. Text Telephone (TTY) users, call 1-800-833-9935.

General Motors of Canada also has a Mobility Program. Visit www.gm.ca or call 1-800-GM-DRIVE (463-7483) for details. TTY users call 1-800-263-3830.

Roadside Assistance Program

For Canadian-purchased vehicles, call 1-800-268-6800.
Service is available 24 hours a day, 365 days a year.

Calling for Assistance

When calling Roadside Assistance, have the following information ready:
- Your name, home address, and home telephone number.
- Telephone number of your location.
- Location of the vehicle
- Model, year, color, and license plate number of the vehicle.
- Odometer reading, Vehicle Identification Number (VIN), and delivery date of the vehicle.
- Description of the problem.

Coverage

Services are provided for the duration of the vehicle’s powertrain warranty.

In the U.S., anyone driving the vehicle is covered. In Canada, a person driving the vehicle without permission from the owner is not covered.

Roadside Assistance is not a part of the New Vehicle Limited Warranty. General Motors North America and GMC reserve the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

General Motors North America and GMC reserve the right to limit services or payment to an owner or driver if they decide the claims are made too often, or the same type of claim is made many times.

Services Provided

- Emergency Fuel Delivery: Delivery of enough fuel for the vehicle to get to the nearest service station.
• **Lock-Out Service**: Service to unlock the vehicle if you are locked out. A remote unlock may be available if you have OnStar®. For security reasons, the driver must present identification before this service is given.

• **Emergency Tow from a Public Road or Highway**: Tow to the nearest GMC dealer for warranty service, or if the vehicle was in a crash and cannot be driven. Assistance is not given when the vehicle is stuck in the sand, mud, or snow.

• **Flat Tire Change**: Service to change a flat tire with the spare tire. The spare tire, if equipped, must be in good condition and properly inflated. It is the owner's responsibility for the repair or replacement of the tire if it is not covered by the warranty.

• **Battery Jump Start**: Service to jump start a dead battery.

• **Trip Interruption Benefits and Assistance**: If your trip is interrupted due to a warranty event, incidental expenses may be reimbursed within the Powertrain warranty period. Items considered are reasonable and customary hotel, meals, rental car, or a vehicle being delivered back to the customer, up to 805 km (500 mi).

**Services Not Included in Roadside Assistance**

- Impound towing caused by violation of any laws.
- Legal fines.
- Mounting, dismounting, or changing of snow tires, chains, or other traction devices.

Service is not provided if a vehicle is in an area that is not accessible to the service vehicle or is not a regularly traveled or maintained public road, which includes ice and winter roads. Off-road use is not covered.

**Services Specific to Canadian-Purchased Vehicles**

- **Fuel Delivery**: Reimbursement is up to 7 liters. Diesel fuel delivery may be restricted. Propane and other fuels are not provided through this service.

- **Lock-Out Service**: Vehicle registration is required.

- **Trip Interruption Benefits and Assistance**: Must be over 150 kilometers from where your trip was started to qualify. General Motors of Canada Limited requires pre-authorization, original detailed receipts, and a copy of the repair orders. Once authorization has been received, the Roadside Assistance advisor will help to make arrangements and explain how to receive payment.

- **Alternative Service**: If assistance cannot be provided right away, the Roadside Assistance advisor may give permission to get local emergency road service. You will
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receive payment, up to $100, after sending the original receipt to Roadside Assistance. Mechanical failures may be covered, however any cost for parts and labor for repairs not covered by the warranty are the owner responsibility.

Scheduling Service Appointments

When the vehicle requires warranty service, contact your dealer and request an appointment. By scheduling a service appointment and advising the service consultant of your transportation needs, your dealer can help minimize your inconvenience.

If the vehicle cannot be scheduled into the service department immediately, keep driving it until it can be scheduled for service, unless, of course, the problem is safety related. If it is, please call your dealership, let them know this, and ask for instructions.

If your dealer requests you to bring the vehicle for service, you are urged to do so as early in the work day as possible to allow for same-day repair.

Courtesy Transportation Program

To enhance your ownership experience, we and our participating dealers are proud to offer Courtesy Transportation, a customer support program for vehicles with the Bumper-to-Bumper (Base Warranty Coverage period in Canada), extended powertrain, and/or hybrid-specific warranties in both the U.S. and Canada.

Several Courtesy Transportation options are available to assist in reducing inconvenience when warranty repairs are required.

Courteous Transportation is not a part of the New Vehicle Limited Warranty. A separate booklet entitled “Limited Warranty and Owner Assistance Information” furnished with each new vehicle provides detailed warranty coverage information.

Transportation Options

Warranty service can generally be completed while you wait. However, if you are unable to do so, your dealer may offer the following transportation options:

Shuttle Service

This includes one-way or round-trip shuttle service within reasonable time and distance parameters of your dealer’s area.

Public Transportation or Fuel Reimbursement

If overnight warranty repairs are needed, and public transportation is used, the expense must be supported by original receipts and within the maximum amount allowed by GM for shuttle service. If U.S. customers arrange their own transportation, limited reimbursement for reasonable fuel expenses may be available. Claim amounts should reflect actual costs
and be supported by original receipts. See your dealer for information.

**Courtesy Rental Vehicle**

For an overnight warranty repair, the dealer may provide an available courtesy rental vehicle or provide for reimbursement of a rental vehicle. Reimbursement is limited and must be supported by original receipts as well as a signed and completed rental agreement and meet state/provincial, local, and rental vehicle provider requirements. Requirements vary and may include minimum age requirements, insurance coverage, credit card, etc. Additional fees such as fuel usage charges, taxes, levies, usage fees, excessive mileage, or rental usage beyond the completion of the repair are also your responsibility.

It may not be possible to provide a like vehicle as a courtesy rental.

**Additional Program Information**

All program options, such as shuttle service, may not be available at every dealer. Contact your dealer for specific availability.

*General Motors reserves the right to unilaterally modify, change, or discontinue Courtesy Transportation at any time and to resolve all questions of claim eligibility pursuant to the terms and conditions described herein at its sole discretion.*

**Collision Damage Repair**

If the vehicle is involved in a collision and it is damaged, have the damage repaired by a qualified technician using the proper equipment and quality replacement parts. Poorly performed collision repairs diminish the vehicle resale value, and safety performance can be compromised in subsequent collisions.

**Collision Parts**

Genuine GM Collision parts are new parts made with the same materials and construction methods as the parts with which the vehicle was originally built. Genuine GM Collision parts are the best choice to ensure that the vehicle's designed appearance, durability, and safety are preserved. The use of Genuine GM parts can help maintain the GM New Vehicle Limited Warranty.

Recycled original equipment parts may also be used for repair. These parts are typically removed from vehicles that were total losses in prior crashes. In most cases, the parts being recycled are from undamaged sections of the vehicle. A recycled original equipment GM part may be an acceptable choice to maintain the vehicle's originally designed appearance and safety performance; however, the history of these parts is not known. Such parts are not covered by the GM New Vehicle Limited Warranty, and any related failures are not covered by that warranty.
Customer Information

Aftermarket collision parts are also available. These are made by companies other than GM and may not have been tested for the vehicle. As a result, these parts may fit poorly, exhibit premature durability/corrosion problems, and may not perform properly in subsequent collisions. Aftermarket parts are not covered by the GM New Vehicle Limited Warranty, and any vehicle failure related to such parts is not covered by that warranty.

Repair Facility

GM also recommends that you choose a collision repair facility that meets your needs before you ever need collision repairs. Your dealer may have a collision repair center with GM-trained technicians and state-of-the-art equipment, or be able to recommend a collision repair center that has GM-trained technicians and comparable equipment.

Insuring the Vehicle

Protect your investment in the GM vehicle with comprehensive and collision insurance coverage. There are significant differences in the quality of coverage afforded by various insurance policy terms. Many insurance policies provide reduced protection to the GM vehicle by limiting compensation for damage repairs through the use of aftermarket collision parts. Some insurance companies will not specify aftermarket collision parts. When purchasing insurance, we recommend that you ensure that the vehicle will be repaired with GM original equipment collision parts. If such insurance coverage is not available from your current insurance carrier, consider switching to another insurance carrier.

If the vehicle is leased, the leasing company may require you to have insurance that ensures repairs with Genuine GM Original Equipment Manufacturer (OEM) parts or Genuine Manufacturer replacement parts. Read the lease carefully, as you may be charged at the end of the lease for poor quality repairs.

If a Crash Occurs

If there has been an injury, call emergency services for help. Do not leave the scene of a crash until all matters have been taken care of. Move the vehicle only if its position puts you in danger, or you are instructed to move it by a police officer.

Give only the necessary information to police and other parties involved in the crash.

For emergency towing see Roadside Assistance Program 364.

Gather the following information:

- Driver name, address, and telephone number.
- Driver license number.
- Owner name, address, and telephone number.
- Vehicle license plate number.
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- Vehicle make, model, and model year.
- Vehicle Identification Number (VIN).
- Insurance company and policy number.
- General description of the damage to the other vehicle.

Choose a reputable repair facility that uses quality replacement parts. See “Collision Parts” earlier in this section.

If the airbag has inflated, see What Will You See after an Airbag Inflates? 78.

Managing the Vehicle Damage Repair Process

In the event that the vehicle requires damage repairs, GM recommends that you take an active role in its repair. If you have a pre-determined repair facility of choice, take the vehicle there, or have it towed there. Specify to the facility that any required replacement collision parts be original equipment parts, either new Genuine GM parts or recycled original GM parts. Remember, recycled parts will not be covered by the GM vehicle warranty.

Insurance pays the bill for the repair, but you must live with the repair. Depending on your policy limits, your insurance company may initially value the repair using aftermarket parts. Discuss this with the repair professional, and insist on Genuine GM parts. Remember, if the vehicle is leased, you may be obligated to have the vehicle repaired with Genuine GM parts, even if your insurance coverage does not pay the full cost.

If another party's insurance company is paying for the repairs, you are not obligated to accept a repair valuation based on that insurance company's collision policy repair limits, as you have no contractual limits with that company. In such cases, you can have control of the repair and parts choices as long as the cost stays within reasonable limits.

Service Publications

Ordering Information

(US and Canada Only)

Service Manuals

Service Manuals have the diagnosis and repair information on the engines, transmission, axle, suspension, brakes, electrical, steering, body, etc.

Service Bulletins

Service Bulletins give additional technical service information needed to knowledgeably service General Motors cars and trucks. Each bulletin contains instructions to assist in the diagnosis and service of the vehicle.

Owner Information

Owner publications are written specifically for owners and intended to provide basic operational information about the vehicle. The Owner Manual includes the Maintenance Schedule for all models.
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RETAIL SELL PRICE: $35.00 – $40.00 (U.S.) plus handling and shipping fees.

Without Pouch: Owner Manual only.

RETAIL SELL PRICE: $25.00 (U.S.) plus handling and shipping fees.

Current and Past Models

Technical Service Bulletins and Manuals are available for current and past model GM vehicles.

ORDER TOLL FREE: 1-800-551-4123 Monday – Friday 8:00 AM – 6:00 PM Eastern Time

Prices are subject to change without notice and without incurring obligation. Allow ample time for delivery.

All listed prices are quoted in U.S. funds. Make checks payable in U.S. funds.

Radio Frequency Statement

This vehicle has systems that operate on a radio frequency that complies with Part 15/Part 18 of the Federal Communications Commission (FCC) rules and with Industry Canada Standards RSS-GEN/210/216/220/251/310, ICES-001.

Operation is subject to the following two conditions:

1. The device may not cause harmful interference.

2. The device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to any of these systems by other than an authorized service facility could void authorization to use this equipment.
Reporting Safety Defects

Reporting Safety Defects to the United States Government

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying General Motors.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign.

However, NHTSA cannot become involved in individual problems between you, your dealer, or General Motors.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to http://www.safercar.gov; or write to:

Administrator, NHTSA
1200 New Jersey Avenue, S.E.
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from http://www.safercar.gov.

Reporting Safety Defects to the Canadian Government

If you live in Canada, and you believe that the vehicle has a safety defect, notify Transport Canada immediately, and notify General Motors of Canada Limited. Call Transport Canada at 1-800-333-0510 or write to:

Transport Canada
Road Safety Branch
80 rue Noel
Gatineau, QC J8Z 0A1

In Canada, call 1-800-263-3777 (English) or 1-800-263-7854 (French), or write:

General Motors of Canada Limited Customer Care Centre, Mail Code: CA1-163-005
1908 Colonel Sam Drive
Oshawa, Ontario L1H 8P7

Reporting Safety Defects to General Motors

In addition to notifying NHTSA (or Transport Canada) in a situation like this, notify General Motors.

Call 1-800-GMC-8782 (1-800-462-8782), or write:

GMC Customer Assistance Center
P.O. Box 33172
Detroit, MI 48232-5172
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Vehicle Data Recording and Privacy

The vehicle has a number of computers that record information about the vehicle’s performance and how it is driven. For example, the vehicle uses computer modules to monitor and control engine and transmission performance, to monitor the conditions for airbag deployment and deploy them in a crash, and, if equipped, to provide antilock braking to help the driver control the vehicle. These modules may store data to help the dealer technician service the vehicle. Some modules may also store data about how the vehicle is operated, such as rate of fuel consumption or average speed. These modules may retain personal preferences, such as radio presets, seat positions, and temperature settings.

Event Data Recorders

This vehicle is equipped with an event data recorder (EDR). The main purpose of an EDR is to record, in certain crash or near crash-like situations, such as an air bag deployment or hitting a road obstacle, data that will assist in understanding how a vehicle’s systems performed. The EDR is designed to record data related to vehicle dynamics and safety systems for a short period of time, typically 30 seconds or less. The EDR in this vehicle is designed to record such data as:

- How various systems in your vehicle were operating;
- Whether or not the driver and passenger safety belts were buckled/fastened;
- How far (if at all) the driver was depressing the accelerator and/or brake pedal; and,
- How fast the vehicle was traveling.

These data can help provide a better understanding of the circumstances in which crashes and injuries occur.

Note

EDR data are recorded by your vehicle only if a non-trivial crash situation occurs; no data are recorded by the EDR under normal driving conditions and no personal data (e.g., name, gender, age, and crash location) are recorded. However, other parties, such as law enforcement, could combine the EDR data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have the special equipment, can read the information if they have access to the vehicle or the EDR.
GM will not access these data or share it with others except: with the consent of the vehicle owner or, if the vehicle is leased, with the consent of the lessee; in response to an official request by police or similar government office; as part of GM's defense of litigation through the discovery process; or, as required by law. Data that GM collects or receives may also be used for GM research needs or may be made available to others for research purposes, where a need is shown and the data is not tied to a specific vehicle or vehicle owner.

OnStar®

If the vehicle is equipped with OnStar® and has an active 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 Additional Information 378.

Infotainment System

Using the navigation system may result in the storage of destinations, addresses, telephone numbers, and other trip information. See the infotainment manual for information on stored data and for deletion instructions.
OnStar

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Voice Command Button
Blue OnStar Button
Emergency Button

This vehicle may be equipped with a comprehensive, in-vehicle system that can connect to an OnStar Advisor for Emergency, Security, Navigation, Connections, and Diagnostics Services. OnStar services may require a paid subscription. OnStar requires the vehicle battery and electrical system, cellular service, and GPS satellite signals to be available and operating. OnStar acts as a link to existing emergency service providers. OnStar may collect information about you and your vehicle, including location information. See OnStar’s Terms & Conditions and Privacy Statement for more details including system limitations at www.onstar.com (U.S.) or www.onstar.ca (Canada).

The OnStar system status light is next to the OnStar buttons. If the status light is:

- Solid Green: System is ready.
- Flashing Green: On a call.
- Red: Indicates a problem.
- Off: System is off. Press twice to speak with an OnStar Advisor.

Press or call 1-888-4ONSTAR (1-888-466-7827) to speak to an Advisor.

Press to:

- Make a call, end a call, or answer an incoming call.
- Give OnStar Hands-Free Calling voice commands.
- Give OnStar Turn-by-Turn Navigation voice commands.
OnStar Services

Emergency
OnStar Emergency Services require a specific OnStar subscription plan. With Automatic Crash Response, in many crashes, built-in sensors can automatically alert a specially trained OnStar Advisor who is immediately connected to the vehicle to help.

Press \( \text{Calls} \) for a priority connection to an OnStar Advisor who can contact emergency service providers, direct them to your exact location, and relay important information.

With OnStar Crisis Assist, specially trained Advisors are available 24 hours a day, 7 days a week, to provide a central point of contact, assistance, and information during a crisis.

With Roadside Assistance, Advisors can locate a nearby service provider to help with a flat tire, a battery jump, or an empty gas tank.

Security
If equipped, OnStar provides these services:

- With Stolen Vehicle Assistance, OnStar Advisors can use GPS to pinpoint the vehicle and help authorities quickly recover it.
- With Remote Ignition Block, if equipped, OnStar can block the engine from being started.
- With Stolen Vehicle Slowdown, if equipped, OnStar can work with law enforcement to gradually slow the vehicle down.

Navigation
OnStar navigation requires a specific OnStar subscription plan.

Press \( \text{Calls} \) to receive Turn-by-Turn directions or have them sent to the vehicle’s navigation screen, if equipped.

Turn-by-Turn Navigation
1. Press \( \text{Calls} \) to connect to an Advisor.

- Obtain the Wi-Fi® hotspot name or SSID and password, if equipped.

Press \( \text{Calls} \) to connect to an Advisor to:

- Verify account information or update contact information.
- Get driving directions.
- Receive a Diagnostic check of the vehicle’s key operating systems.
- Receive Roadside Assistance.
- Manage Wi-Fi Settings, if equipped.

Press \( \text{Calls} \) to get a priority connection to an OnStar Advisor available 24/7 to:

- Get help for an emergency.
- Be a Good Samaritan or respond to an AMBER Alert.
- Get assistance in severe weather or other crisis situations and find evacuation routes.
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2. Request directions to be downloaded to the vehicle.
3. Follow the voice-guided commands.

Using Voice Commands During a Planned Route

Cancel Route
2. Say “Cancel route.” System responds: “Do you want to cancel directions?”
3. Say “Yes.” System responds: “OK, request completed, thank you, goodbye.”

Route Preview
2. Say “Route preview.” System responds with the next three maneuvers.

Repeat
2. Say “Repeat.” System responds with the last direction given, then responds with “OnStar ready,” then a tone.

Get My Destination
2. Say “Get my destination.” System responds with the address and distance to the destination, then responds with “OnStar ready,” then a tone.

Destination Download
Subscribers can have directions sent to the vehicle’s navigation screen, if equipped.

Press 🔄, then ask the Advisor to download directions to the vehicle’s navigation system, if equipped. After the call ends, press the Go button on the navigation screen to begin driving directions. Routes that are sent to the navigation screen can only be canceled through the navigation system.

See www.onstar.com (U.S.) or www.onstar.ca (Canada).

Connections
The following OnStar services help with staying connected.

For coverage maps, see www.onstar.com (U.S.) or www.onstar.ca (Canada).

OnStar Wi-Fi Hotspot (If Equipped)
The vehicle may have a built-in Wi-Fi hotspot that provides access to the Internet and web content at 4G LTE speed. Up to seven mobile devices can be connected. A data plan is required. Use the in-vehicle controls only when it is safe to do so.

1. To retrieve Wi-Fi hotspot information, press 🔄, wait for the prompt, then say “Wi-Fi settings.” On some vehicles, touch Wi-Fi Settings on the screen.
2. The Wi-Fi settings will display the Wi-Fi hotspot name (SSID), password, and on some vehicles, the connection type.
OnStar RemoteLink® Mobile App (If Equipped)
Download the OnStar RemoteLink mobile app to select Apple®, Android™, BlackBerry®, or Windows® mobile devices. OnStar Subscribers can access the following services from a mobile device:

- Remotely start/stop the vehicle, if factory-equipped.
- Lock/unlock doors, if equipped with automatic locks.
- Activate the horn and lamps.
- Check the vehicle’s fuel level, oil life, or tire pressure, if factory-equipped with the Tire Pressure Monitor System.
- Send directions to the vehicle.

For OnStar RemoteLink information and compatibility, see www.onstar.com (U.S.) or www.onstar.ca (Canada).

Remote Services
Contact an OnStar Advisor to unlock the doors or sound the horn and flash the lamps.

OnStar AtYourService
OnStar Advisors can provide savings offers from restaurants and retailers on your route, help locate hotels, or book a room.

OnStar Hands-Free Calling
Make and receive calls with the built-in wireless calling service.

Make a Call

Calling 911 Emergency
2. Say “Call.” System responds: “Call. Please say the name or number to call.”
3. Say the entire number without pausing, including a “1” and the area code. System responds: “OK, calling.”

Retrieve My Number
2. Say “My number.” System responds: “Your OnStar Hands-Free Calling number is,” then says the number.
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End a Call
Press \( \# \). System responds: “Call ended.”

Verify Minutes and Expiration
Press \( \# \) and say “Minutes” then “Verify” to check how many minutes remain and their expiration date.

Diagnostics
OnStar Advanced Diagnostics can perform a check of the vehicle’s key operating systems through a monthly diagnostics report, through real time alerts or by pressing \( \# \). OnStar can also monitor tire pressure, if equipped with a Tire Pressure Monitor System.

OnStar Additional Information

In-Vehicle Audio Messages
Audio messages may play important information at the following times:

- Prior to vehicle purchase. Press \( \# \) to set up an account.
- With the OnStar Basic Plan, every 60 days.
- After change in ownership and at 90 days.

Transferring Service
Press \( \# \) to request account transfer eligibility information. The Advisor can cancel or change account information.

Selling/Transferring the Vehicle
Call 1-888-4ONSTAR (1-888-466-7827) immediately to terminate your OnStar services if the vehicle is disposed of, sold, transferred, or if the lease ends.

Reactivation for Subsequent Owners
Press \( \# \) and follow the prompts to speak to an Advisor as soon as possible. The Advisor will update vehicle records and explain OnStar service options.

How OnStar Service Works
Automatic Crash Response, Emergency Services, Crisis Assist, Stolen Vehicle Assistance, Vehicle Diagnostics, Remote Services, Roadside Assistance, Turn-by-Turn Navigation, and Hands-Free Calling are available on most vehicles. Not all OnStar services are available everywhere or on all vehicles. For more information, a full description of OnStar services, system limitations, and OnStar terms and conditions:

- Call 1-888-4ONSTAR (1-888-466-7827).
- See www.onstar.com (U.S.).
- See www.onstar.ca (Canada).
- Call TTY 1-877-248-2080.
• Press 📩 to speak with an Advisor.

OnStar services cannot work unless the vehicle is in a place where OnStar has an agreement with a wireless service provider for service in that area. The wireless service provider must also have coverage, network capacity, reception, and technology compatible with OnStar services. Service involving location information about the vehicle cannot work unless GPS signals are available, unobstructed, and compatible with the OnStar hardware. OnStar services may not work if the OnStar equipment is not properly installed or it has not been properly maintained. If equipment or software is added, connected, or modified, OnStar services may not work. Other problems beyond the control of OnStar — such as hills, tall buildings, tunnels, weather, electrical system design and architecture of the vehicle, damage to the vehicle in a crash, or wireless phone network congestion or jamming — may prevent service.


Services for People with Disabilities
Advisors provide services to help Subscribers with physical disabilities and medical conditions.

Press 📩 to help:
• Locate a gas station with an attendant to pump gas.
• Find a hotel, restaurant, etc., that meets accessibility needs.
• Provide directions to the closest hospital or pharmacy in urgent situations.

TTY Users
OnStar has the ability to communicate to deaf, hard-of-hearing, or speech-impaired customers while in the vehicle. The available dealer-installed TTY system can provide in-vehicle access to all OnStar services, except Virtual Advisor and OnStar Turn-by-Turn Navigation.

OnStar Personal Identification Number (PIN)
A PIN is needed to access some OnStar services. The PIN will need to be changed the first time when speaking with an Advisor. To change the OnStar PIN, contact an OnStar Advisor by pressing 📩 or calling 1-888-4ONSTAR.

Warranty
OnStar equipment may be warranted as part of the vehicle warranty.

Languages
The vehicle can be programmed to respond in multiple languages. Press 📩 and ask for an Advisor. Advisors are available in English, Spanish, and French. Available languages may vary by country.

Potential Issues
OnStar cannot perform Remote Door Unlock or Stolen Vehicle Assistance after the vehicle has been off continuously for five days without an ignition cycle. If the
vehicle has not been started for five days, OnStar can contact Roadside Assistance or a locksmith to help gain access to the vehicle.

Global Positioning System (GPS)

- Obstruction of the GPS can occur in a large city with tall buildings; in parking garages; around airports; in tunnels and underpasses; or in an area with very dense trees. If GPS signals are not available, the OnStar system should still operate to call OnStar. However, OnStar could have difficulty identifying the exact location.

- In emergency situations, OnStar can use the last stored GPS location to send to emergency responders.

A temporary loss of GPS can cause loss of the ability to send a Turn-by-Turn Navigation route. The Advisor may give a verbal route or may ask for a call back after the vehicle is driven into an open area.

Cellular and GPS Antennas

Cellular reception is required for OnStar to send remote signals to the vehicle. Do not place items over or near the antenna to prevent blocking cellular and GPS signal reception.

Unable to Connect to OnStar Message

If there is limited cellular coverage or the cellular network has reached maximum capacity, this message may come on. Press to try the call again or try again after driving a few miles into another cellular area.

Vehicle and Power Issues

OnStar services require a vehicle electrical system, wireless service, and GPS satellite technologies to be available and operating for features to function properly. These systems may not operate if the battery is discharged or disconnected.

Add-on Electrical Equipment

The OnStar system is integrated into the electrical architecture of the vehicle. Do not add any electrical equipment. See Add-On Electrical Equipment on page 259. Added electrical equipment may interfere with the operation of the OnStar system and cause it to not operate.

Vehicle Software Updates

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