

If the parking brake warning light is on, the EPB has detected an error in another system and is operating with reduced functionality. To apply the EPB when this light is on, lift up on the EPB switch and hold it in the up position. Full application of the parking brake by the EPB system may take longer than normal when this light is on. Continue to hold the switch until the parking brake status light remains on. If the parking brake warning light is on, see your dealer.

If the EPB fails to apply, the rear wheels should be blocked to prevent vehicle movement.

### EPB Release

To release the EPB, place the ignition in the ON/RUN position, apply and hold the brake pedal, and push down momentarily on the EPB switch. If you attempt to release the EPB without the brake pedal applied, a chime will sound,

and the DIC message STEP ON BRAKE TO RELEASE PARK BRAKE will be displayed. The EPB is released when the parking brake status light is off.

If the parking brake warning light is on, the EPB has detected an error in another system and is operating with reduced functionality. To release the EPB when this light is on, push down on the EPB switch and hold it in the down position. EPB release may take longer than normal when this light is on. Continue to hold the switch until the parking brake status light is off. If the light is on, see your dealer.

**Notice: Driving with the parking brake on can overheat the brake system and cause premature wear or damage to brake system parts. Make sure that the parking brake is fully released and the brake warning light is off before driving.**

### Automatic EPB Release

The EPB will automatically release if the vehicle is running, placed into gear, and an attempt is made to drive away. Avoid rapid acceleration when the EPB is applied, to preserve parking brake lining life.

For maximum EPB force when towing a trailer or parking on a hill, pull the EPB switch twice. If you are towing a trailer and parking on a hill, see *Driving Characteristics and Towing Tips* on page 9-54 for more information.

### Brake Assist

This vehicle has a brake assist feature designed to assist the driver in stopping or decreasing vehicle speed in emergency driving conditions. This feature uses the stability system hydraulic brake control module to supplement the power brake system under conditions where the driver has quickly and forcefully applied the brake pedal in an attempt to quickly stop or slow down the vehicle. The stability system hydraulic brake control module increases brake pressure at each corner of the vehicle until the ABS activates. Minor brake pedal pulsation or pedal movement during this time is normal and the driver should continue to apply the brake pedal as the driving situation dictates. The brake assist feature will automatically disengage when the brake pedal is released or brake pedal pressure is quickly decreased.

### Hill Start Assist (HSA)

This vehicle has a Hill Start Assist (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 to ensure that there is no rolling. The brakes will automatically release when the accelerator pedal is applied within the two-second window. 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).


### Ride Control Systems


#### Traction Control System (TCS)


The vehicle has a Traction Control System (TCS) that limits wheel slip. The system operates if it senses that one or both of the front wheels are slipping or beginning to lose traction. When this happens, the system reduces engine power and/or applies brake pressure to the slipping wheel(s).

The system may be heard or felt while it is working, but this is normal.

TCS automatically comes on whenever the vehicle is started. To limit wheel slip, especially in slippery road conditions, the system should always be left on. But, TCS can be turned off if needed.


 flashes to indicate that TCS is active. See *Traction Control System (TCS)/StabiliTrak® Light on page 5-21* for more information.

If there is a problem detected with TCS, SERVICE TRACTION CONTROL is displayed on the Driver Information Center (DIC). See *Ride Control System Messages on page 5-37*. When this message is displayed and  comes on and stays on, the vehicle is safe to drive but the system is not operational. Driving should be adjusted accordingly.

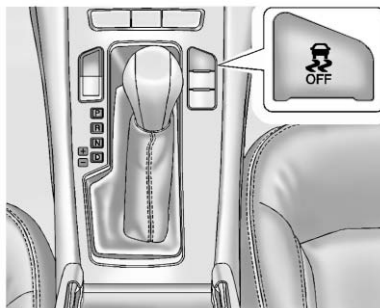
If  comes on and stays on, reset the system.


To reset:

1. Stop the vehicle.
2. Turn the engine off and wait 15 seconds.
3. Start the engine.

If  still comes on and stays on, the vehicle needs service.

**Notice:** Do not repeatedly brake or accelerate heavily when TCS is off. The vehicle's driveline could be damaged.



TCS can be turned off by pressing and releasing the TCS/STabiliTrak button. When TCS is turned off,  comes on, and the appropriate DIC message also displays. See *Ride Control System Messages on page 5-37*. With TCS turned off, the system does not limit wheel slip. Driving should be adjusted accordingly. See *Traction Off Light on page 5-21* for more information.

Press and release the TCS/STabiliTrak button again to turn the system back on.

It may be necessary to turn the system off if the vehicle gets stuck in sand, mud, or snow and rocking the vehicle is required. See *If the Vehicle Is Stuck on page 9-10* for more information. See also *Winter Driving on page 9-8* for information on using TCS when driving in snowy or icy conditions.

Adding non-GM accessories can affect the vehicle performance. See *Accessories and Modifications on page 10-3* for more information.

## STabiliTrak<sup>®</sup> System


The vehicle may have a vehicle stability enhancement system called STabiliTrak. It is an advanced computer-controlled system that assists with directional control of the vehicle in difficult driving conditions.

STabiliTrak activates when the computer senses a difference between the intended path and the direction the vehicle is actually traveling.


## 9-38 Driving and Operating


StabiliTrak selectively applies braking pressure to the vehicle brakes to help steer the vehicle in the intended direction.

StabiliTrak comes on automatically whenever the vehicle is started. To assist with directional control of the vehicle, the system should always be left on.

When StabiliTrak activates,  flashes on the instrument panel. A noise may be heard or vibration may be felt in the brake pedal. This is normal. Continue to steer the vehicle in the intended direction. See *Traction Control System (TCS)/StabiliTrak® Light* on page 5-21 for more information.


If a problem is detected with StabiliTrak, SERVICE STABILITRAK is displayed on the Driver Information Center (DIC).

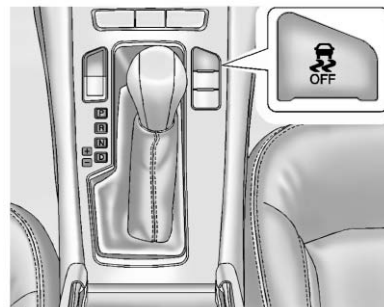
See *Ride Control System Messages on page 5-37*. When this message is displayed and  comes on and stays on, the vehicle is safe to drive but the system is not operational. Driving should be adjusted accordingly.



If  comes on and stays on, reset the system.

To reset:

1. Stop the vehicle.
2. Turn the engine off and wait 15 seconds.
3. Start the engine.

If  still comes on and stays on, the vehicle needs service.



- To turn off both StabiliTrak and TCS, press and hold the TCS/StabiliTrak button, located on the instrument panel, until  and  illuminate and the appropriate DIC message is displayed. See *Ride Control System Messages on page 5-37*.

When StabiliTrak is turned off, the system will not assist with directional control of the vehicle or limit wheel spin. Driving should be adjusted accordingly. See *Traction Control System (TCS)/StabiliTrak® Light* on page 5-21 for more information.

- Press and release the TCS/StabiliTrak button again to turn the system back on.

If cruise control is being used when StabiliTrak activates, cruise control will automatically disengage. Press the cruise control button to reengage when road conditions allow. See *Cruise Control* on page 9-40 for more information.

## Limited-Slip Differential

Vehicles with a limited-slip differential can give more traction on snow, mud, ice, sand, or gravel. It works like a standard differential most of the time, but when traction is low, this feature allows the drive wheel with the most traction to move the vehicle.

## Selective Ride Control

The vehicle may have a ride control system called Selective Ride Control. The system provides the following performance benefits:

- Reduced Impact Harshness
- Improved Road Isolation
- Improved High-Speed Stability
- Improved Handling Response
- Better Control of Body Ride Motions

To switch from TOUR to SPORT mode, move the shift lever to the left while the transmission is in D (Drive).

**TOUR:** Use for normal city and highway driving. This setting provides a smooth, soft ride.

**SPORT:** Use where road conditions or personal preference demand more control. This setting provides more “feel,” or response to road conditions through increased steering effort and suspension tuning.

The setting can be changed at any time. Based on road conditions, steering wheel angle, and vehicle speed, the system automatically adjusts to provide the best handling while providing a smooth ride. The TOUR and SPORT modes will feel similar on a smooth road.

### Cruise Control

With cruise control, the vehicle can maintain a speed of about 40 km/h (25 mph) or more without keeping your foot on the accelerator. Cruise control does not work at speeds below 40 km/h (25 mph).

On vehicles with the Traction Control System (TCS) or the StabiliTrak<sup>®</sup> system, it may begin to limit wheel spin while you are using cruise control. If this happens, the cruise control will automatically disengage. See *Traction Control System (TCS)* on page 9-36 or *StabiliTrak<sup>®</sup> System* on page 9-37.

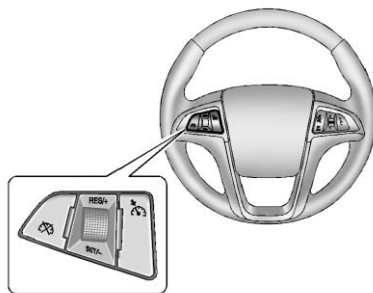
#### WARNING

Cruise control can be dangerous where you cannot drive safely at a steady speed. So, do not use the cruise control on winding roads or in heavy traffic.


(Continued)


#### WARNING (Continued)

Cruise control can be dangerous on slippery roads. On such roads, fast changes in tire traction can cause excessive wheel slip, and you could lose control. Do not use cruise control on slippery roads.



The cruise control buttons are located on the steering wheel.

 (On/Off): Press to turn the cruise control system on and off. An indicator light will turn on or off in the instrument panel cluster.


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

**RES/+ (Resume/Accelerate):** Move the thumbwheel up to make the vehicle resume to a previously set speed or to accelerate.

**SET/- (Set/Coast):** Move the thumbwheel down to set the speed and activate cruise control or make the vehicle decelerate.


#### Setting Cruise Control

If the cruise button is on when not in use, it could get bumped and go into cruise when not desired. Keep the cruise control switch off when cruise is not being used.

1. Press  to turn the cruise control system on. The indicator light in the instrument panel cluster comes on.

2. Get to the speed desired.
3. Move the thumbwheel down toward SET/- and release it. The desired set speed briefly appears in the instrument panel cluster.
4. Take your foot off the accelerator pedal.

### Resuming a Set Speed

If the cruise control is set at a desired speed and then the brakes are applied or the  is pressed, the cruise control is disengaged without erasing the set speed from memory.

Once the vehicle reaches about 40 km/h (25 mph) or more, move the thumbwheel up toward RES/+ briefly. The vehicle returns to the previous set speed and stays there.

### Increasing Speed While Using Cruise Control

If the cruise control system is already activated:

- Move the thumbwheel up toward RES/+ and hold it until the vehicle accelerates to the desired speed, and then release it.
- To increase the speed in small amounts, move the thumbwheel up toward RES/+ briefly, then release it. Each time this is done, the vehicle goes about 1.6 km/h (1 mph) faster.

### Reducing Speed While Using Cruise Control

If the cruise control system is already activated:

- Move the thumbwheel toward SET/- and hold until the desired lower speed is reached, then release it.

- To slow down in small amounts, move the thumbwheel toward SET/- briefly and then release it. Each time this is done, the vehicle goes about 1.6 km/h (1 mph) slower.

### Passing Another Vehicle While Using Cruise Control



Use the accelerator pedal to increase the vehicle's speed. When you take your foot off the pedal, the vehicle will slow down to the previous set cruise control speed.

### Using Cruise Control on Hills


How well the cruise control works on hills depends upon the vehicle's speed, load, and the steepness of the hills. When going up steep hills, you might have to step on the accelerator pedal to maintain the vehicle's speed. When going downhill, you might have to brake or shift to a lower gear to maintain the vehicle's speed. When the brakes are applied the cruise control shuts off.

### Ending Cruise Control

There are three ways to end cruise control:

- To disengage cruise control, step lightly on the brake pedal; when cruise control disengages, the indicator light will not be lit.
- Press  on the steering wheel.
- To turn off the cruise control, press  on the steering wheel.

### Erasing Speed Memory

The cruise control set speed is erased from memory by pressing  or if the ignition is turned off.

## Object Detection Systems

### Ultrasonic Parking Assist

If available, the Ultrasonic Rear Parking Assist (URPA) system assists the driver with parking and avoiding objects while in R (Reverse). URPA operates at speeds less than 8 km/h (5 mph). The sensors on the rear bumper detect objects up to 2.5 m (8 ft) behind the vehicle, and at least 20 cm (8 in) off the ground.

#### WARNING

The URPA system does not detect pedestrians, bicyclists, animals, or any other objects located below the bumper or that are too close or too far from the vehicle.

(Continued)

#### WARNING (Continued)

To prevent injury, death, or vehicle damage, even with URPA, always check behind the vehicle and check all mirrors before backing.

### How the System Works

URPA comes on automatically when the shift lever is moved into R (Reverse). A single tone sounds to indicate the system is working.

URPA operates only at speeds less than 8 km/h (5 mph).

An obstacle is indicated by audible beeps. The interval between the beeps becomes shorter as the vehicle gets closer to the obstacle. When the distance is less than 30 cm (12 in) the beeping is a continuous tone for five seconds.



To be detected, objects must be at least 20 cm (8 in) off the ground and below trunk level. Objects must also be within 2.5 m (8 ft) from the rear bumper. The distance at which objects can be detected may be less during warmer or humid weather.

### Turning the System On and Off

The URPA system can be turned on and off using the park assist button located next to the shift lever.



The LED next to the park assist button lights up when the system is on and turns off when it has been disabled.

When the system is off, PARK ASSIST OFF displays on the Driver Information Center (DIC). The message disappears after a short period of time.

URPA defaults to the on setting each time the vehicle is started.

### When the System Does Not Seem to Work Properly

The following messages may be displayed on the DIC:

**SERVICE PARK ASSIST:** If this message occurs, take the vehicle to your dealer to repair the system.

**PARK ASSIST OFF:** If the URPA system does not activate due to a temporary condition, this message displays on the DIC. This can occur under the following conditions:

- The driver has disabled the system.
- The ultrasonic sensors are not clean. Keep the vehicle's rear bumper free of mud, dirt, snow,

ice, and slush. For cleaning instructions, see *Exterior Care* on page 10-98.

- The park assist sensors are covered by frost or ice. Frost or ice can form around and behind the sensors and may not always be seen; this can occur after washing the vehicle in cold weather. The message may not clear until the frost or ice has melted.
- An object was hanging out of the trunk during the last drive cycle. Once the object is removed, URPA will return to normal operation.
- The bumper is damaged. Take the vehicle to your dealer to repair the system.
- Other conditions, such as vibrations from a jackhammer or the compression of air brakes on a very large truck, are affecting system performance.

### Side Blind Zone Alert (SBZA)

The vehicle may have a Side Blind Zone Alert (SBZA) system. Read this entire section before using the system.

#### **WARNING**

SBZA does not detect vehicles rapidly approaching outside of the side blind zones, pedestrians, bicyclists, or animals. Failure to use proper care when changing lanes may result in injury, death, or vehicle damage. Always check for other vehicles and use the turn signals when changing lanes.

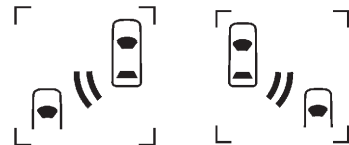
When the system detects a vehicle in the side blind zone, amber SBZA displays will light up in the side mirrors. This indicates that it may be unsafe to change lanes. Before making a lane change, always check the SBZA display, check the outside and rearview mirrors, look over your shoulder for vehicles and hazards, and use the turn signal.

#### **SBZA Detection Zones**

The SBZA sensor covers a zone of approximately one lane over from both sides of the vehicle, or 3.5 m (11 ft). This zone starts at each side mirror and goes back approximately 5.0 m (16 ft). The height of the zone is approximately between 0.5 m (1.5 ft) and 2.0 m (6 ft) off the ground.

The SBZA detection zones do not change if the vehicle is towing a trailer. So be extra careful when changing lanes while towing a trailer.

#### **How the System Works**



**Left Side Mirror Display**      **Right Side Mirror Display**

When the vehicle is started, both outside mirror displays will briefly come on to indicate that the system is operating. While driving forward, the left or right side mirror SBZA display will light up if a vehicle is detected in that blind zone. If you activate a turn signal and a vehicle has been detected on the same side, the SBZA display will flash to give you extra warning not to change lanes.

SBZA displays do not come on while the vehicle is approaching or passing other vehicles. At speeds greater than 32 km/h (20 mph), SBZA displays may come on when

a vehicle you have passed remains in or drops back into the detection zone.

SBZA can be disabled through vehicle personalization. See *Vehicle Personalization on page 5-40* for more information. If the SBZA is disabled by the driver, the SBZA mirror displays will not light up during normal driving.

### **When the System Does Not Seem to Work Properly**

Occasional missed alerts can occur under normal circumstances and will increase in wet conditions. The system does not need to be serviced due to an occasional missed alert. The number of missed alerts will increase with increased rainfall or road spray.

If the SBZA displays do not light up when the system is on and vehicles are in the blind zone, the system may need service. Take the vehicle to your dealer.

SBZA is designed to ignore stationary objects; however, the system may occasionally light up due to guard rails, signs, trees, shrubs, and other stationary objects. This is normal system operation; the vehicle does not need service.

SBZA does not operate when the left or right corners of the rear bumper are covered with mud, dirt, snow, ice, or slush, or in heavy rainstorms. For cleaning instructions, see *Exterior Care on page 10-98*. If the infotainment display still shows the SIDE BLIND ZONE SYS. UNAVAILABLE message after cleaning the bumper, see your dealer.

The SBZA displays may remain on if a trailer is attached to the vehicle, or a bicycle or object is extending out to either side of the vehicle.

When SBZA is disabled for any reason other than the driver turning it off, the driver will not be able to turn SBZA back on using vehicle personalization. The SIDE BLIND

ZONE ALERT ON option will not be selectable if the conditions for normal system operation are not met. Until normal operating conditions for SBZA are met, you should not rely upon SBZA while driving.

### **SBZA Error Messages**

The following messages may appear on the infotainment display:

#### **SIDE BLIND ZONE ALERT**

**SYSTEM OFF:** This message indicates that the driver has turned the system off.

#### **SIDE BLIND ZONE SYS.**

**UNAVAILABLE:** This message indicates that the SBZA system is disabled because the sensor is blocked and cannot detect vehicles in the blind zone. The sensor may be blocked by mud, dirt, snow, ice, or slush. This message may also activate during heavy rain or due to road spray. The vehicle does not need service. For cleaning, see *Exterior Care on page 10-98*.

### SERVICE SIDE BLIND ZONE

**ALERT SYSTEM:** If this message appears, both SBZA displays will remain on indicating there is a problem with the SBZA system. If these displays remain on after continued driving, the system needs service. Take the vehicle to your dealer.

### FCC Information

See *Radio Frequency Statement on page 13-20* for FCC information.

### Rear Vision Camera (RVC)

This vehicle may have an RVC system. Read this entire section before using it.

The RVC system can assist the driver when backing up by displaying a view of the area behind the vehicle.

### WARNING

The RVC system does not display pedestrians, bicyclists, animals, or any other object located outside the cameras field of view, below the bumper, or under the vehicle.

Do not back the vehicle using only the RVC screen or by using the screen during longer, higher speed backing maneuvers, or where there could be cross-traffic. Perceived distances may be different from actual distances.

Failure to use proper care before backing may result in injury, death, or vehicle damage. Always check before backing by checking behind and around the vehicle.

An image appears on the navigation screen with the message Check Surroundings for Safety when the vehicle is shifted into R (Reverse). The navigation screen goes to the previous screen after approximately 10 seconds once the vehicle is shifted out of R (Reverse).

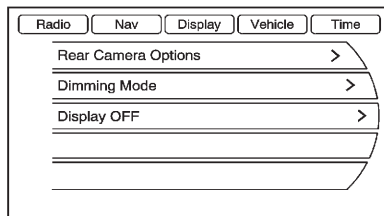
To cancel the delay, do one of the following:

- Press a hard key on the navigation system.
- Shift into P (Park).
- Reach a vehicle speed of 8 km/h (5 mph).

### Turning the Rear Vision Camera System On or Off

To turn the RVC system on or off:

1. Shift into P (Park).
2. Press the CONFIG button to enter the configure menu options.
3. Select Display.



4. Select Rear Camera Options.
5. Select Camera. When a checkmark appears next to the Camera option, then the RVC system is on.

### Symbols

The navigation system may have a feature that lets the driver view symbols on the navigation screen while using the RVC. The Ultrasonic Rear Park Assist (URPA) system must not be disabled to use the caution symbols. The error message Rear Parking Assist Symbols Unavailable may display if URPA

has been disabled and the symbols have been turned on. See *Ultrasonic Parking Assist on page 9-42*.

The symbols appear and may cover an object when viewing the navigation screen when an object is detected by the URPA system.

To turn the symbols on or off:

1. Shift into P (Park).
2. Press the CONFIG button to enter the configure menu options.
3. Select Display.
4. Select Rear Camera Options.
5. Select Symbols. When a checkmark appears next to the Symbols option, symbols will appear.

### Guidelines

The RVC system has a guideline overlay that can help the driver align the vehicle when backing into a parking spot.

To turn the guidelines on or off:

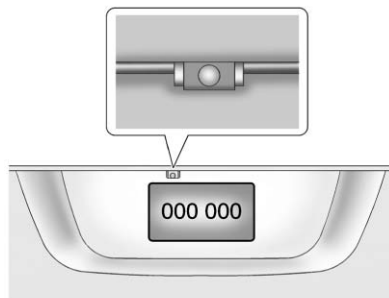
1. Shift into P (Park).
2. Press the CONFIG button to enter the configure menu options.
3. Select Display.
4. Select Rear Camera Options.
5. Select Guidelines. When a checkmark appears next to the Guidelines option, guidelines will appear.

### Rear Vision Camera Error Messages

**SERVICE REAR VISION CAMERA SYSTEM:** This message can display when the system is not receiving information it requires from other vehicle systems.

If any other problem occurs or if a problem persists, see your dealer.

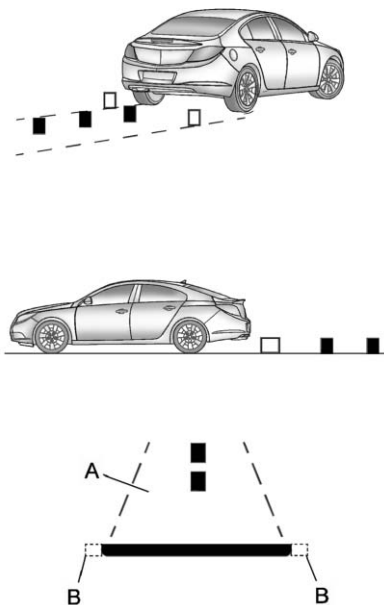
### Rear Vision Camera Location



The camera is located above the license plate.

The area displayed by the camera is limited. It does not display objects that are close to either corner or under the bumper and can vary depending on vehicle orientation or road conditions. The distance of the image that appears on the screen is different from the actual distance.

The following illustration shows the field of view that the camera provides.



- A. View displayed by the camera.  
B. Corner of the rear bumper.

### When the System Does Not Seem to Work Properly

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

- The RVC is turned off. See “Turning the Rear Camera System On or Off” earlier in this section.
- It is dark.
- The sun or the beam of headlamps are shining directly into the camera lens.
- Ice, snow, mud, or anything else builds up on the camera lens. Clean the lens, rinse it with water, and wipe it with a soft cloth.
- The back of the vehicle is in an accident. The position and mounting angle of the camera can change or the camera can be affected. Be sure to have the camera and its position and mounting angle checked at your dealer.

## Fuel

Use of the recommended fuel is an important part of the proper maintenance of this vehicle. To help keep the engine clean and maintain optimum vehicle performance, we recommend the use of gasoline advertised as TOP TIER Detergent Gasoline.

Look for the TOP TIER label on the fuel pump to ensure gasoline meets enhanced detergency standards developed by auto companies. A list of marketers providing TOP TIER Detergent Gasoline can be found at [www.toptiergas.com](http://www.toptiergas.com).



The eighth digit of the Vehicle Identification Number (VIN) shows the code letter or number that identifies the vehicle's engine. The VIN is at the top left of the instrument panel. See *Vehicle Identification Number (VIN)* on page 12-1.

## Recommended Fuel

If the vehicle has a 2.4L L4 engine (VIN Code C), use regular unleaded gasoline with a posted octane rating of 87 or higher. If the octane rating is less than 87, an audible knocking noise, commonly referred to as spark knock, might be heard when driving. If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. If heavy knocking is heard when using gasoline rated at 87 octane or higher, the engine needs service.

If the vehicle has the 3.6L V6 engine (VIN Code D), use premium unleaded gasoline with a posted octane rating of 91 or higher. You can also use regular unleaded gasoline rated at 87 octane or higher, but the vehicle's acceleration could be slightly reduced, and a slight audible knocking noise, commonly referred to as spark knock, might be heard. If the octane is less than 87, a heavy knocking noise might be heard when driving.

If this occurs, use a gasoline rated at 87 octane or higher as soon as possible. Otherwise, you could damage the engine. If heavy knocking is heard when using gasoline rated at 87 octane or higher, the engine needs service.

### Gasoline Specifications (U.S. and Canada Only)

At a minimum, gasoline should meet ASTM specification D 4814 in the United States or CAN/CGSB-3.5 or 3.511 in Canada.

Some gasolines contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT). We recommend against the use of gasolines containing MMT. See *Fuel Additives* on page 9-50 for additional information.

### 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 might fail a smog-check test. See *Malfunction Indicator Lamp* on page 5-16. 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 might not be covered by the vehicle warranty.

### Fuels in Foreign Countries

Never use leaded gasoline or any other fuel not recommended in the previous text on fuel. Costly repairs caused by use of improper fuel would not be covered by the vehicle warranty.

To check the fuel availability, ask an auto club, or contact a major oil company that does business in the country where you will be driving.

### Fuel Additives

To provide cleaner air, all gasolines in the United States are now required to contain additives that help prevent engine and fuel system deposits from forming, allowing the emission control system to work properly. In most cases, nothing should have to be added to the fuel. However, some gasolines contain only the minimum amount of additive required to meet U.S. Environmental Protection Agency



regulations. To help keep fuel injectors and intake valves clean and avoid problems due to dirty injectors or valves, look for gasoline that is advertised as TOP TIER Detergent Gasoline. Look for the TOP TIER label on the fuel pump to ensure gasoline meets enhanced detergency standards developed by the auto companies. A list of marketers providing TOP TIER Detergent Gasoline can be found at [www.toptiergas.com](http://www.toptiergas.com).

For customers who do not use TOP TIER Detergent Gasoline regularly, one bottle of GM Fuel System Treatment PLUS, added to the fuel tank at every engine oil change, can help clean deposits from fuel injectors and intake valves. GM Fuel System Treatment PLUS is the only gasoline additive recommended by General Motors. It is available at your dealer.

Gasolines containing oxygenates, such as ethers and ethanol, and reformulated gasolines might be available in your area. We recommend that you use these gasolines, if they comply with the specifications described earlier. However, E85 (85% ethanol) and other fuels containing more than 15% ethanol must not be used in vehicles that were not designed for those fuels.

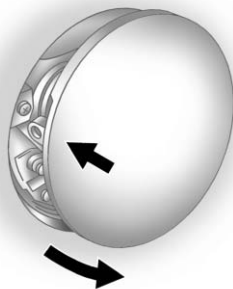
**Notice:** This vehicle was not designed for fuel that contains methanol. Do not use fuel containing methanol. It can corrode metal parts in the fuel system and also damage plastic and rubber parts. That damage would not be covered under the vehicle warranty.

Some gasolines that are not reformulated for low emissions can contain an octane-enhancing additive called methylcyclopentadienyl manganese tricarbonyl (MMT); ask the attendant where you buy gasoline whether the fuel contains MMT. We recommend against the use of such gasolines. Fuels containing MMT can reduce spark plug life and affect emission control system performance. The malfunction indicator lamp might turn on. If this occurs, return to your dealer for service.

### Filling the Tank

#### WARNING

Fuel vapor burns violently and a fuel fire can cause bad injuries. 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. Do not smoke near fuel or when refueling the vehicle. Do not use cellular phones. Keep sparks, flames, and smoking materials away from fuel. Do not leave the fuel pump unattended when refueling the vehicle. This is against the law in some places. Do not re-enter the vehicle while pumping fuel. Keep children away from the fuel pump; never let children pump fuel.



The tethered fuel cap is behind the fuel door on the vehicle's passenger side. Turn the fuel cap counterclockwise to remove. While refueling, hang the tethered fuel cap from the hook on the fuel door. Reinstall the cap by turning it clockwise until it clicks

#### WARNING

Fuel can spray out on you if you open the fuel cap too quickly. If you spill fuel and then something ignites it, you could be badly burned. This spray can happen if the tank is nearly full, and is more likely in hot weather. Open the fuel cap slowly and wait for any hiss noise to stop. Then unscrew the cap all the way.

Do not top off or overfill the tank and wait a few seconds before removing the nozzle. Clean fuel from painted surfaces as soon as possible. See *Exterior Care on page 10-98*.

 **WARNING**

If a fire starts while you are refueling, do not remove the nozzle. Shut off the flow of fuel by shutting off the pump or by notifying the station attendant. Leave the area immediately.

**Notice:** If a new fuel cap is needed, be sure to get the right type of cap from your dealer. The wrong type of fuel cap might not fit properly, might cause the malfunction indicator lamp to light, and could damage the fuel tank and emissions system. See *Malfunction Indicator Lamp on page 5-16*.

## Filling a Portable Fuel Container

 **WARNING**

Never fill a portable fuel container while it is in the vehicle. Static electricity discharge from the container can ignite the fuel vapor. You can be badly burned and the vehicle damaged if this occurs. To help avoid injury to you and others:

- Dispense fuel only into approved containers.
- Do not fill a container while it is inside a vehicle, in a vehicle's trunk, pickup bed, or on any surface other than the ground.

(Continued)

**WARNING (Continued)**

- Bring the fill nozzle in contact with the inside of the fill opening before operating the nozzle. Contact should be maintained until the filling is complete.
- Do not smoke while pumping fuel.
- Do not use a cellular phone while pumping fuel.

# 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.

See the following trailer towing information in this section:

- For information on driving while towing a trailer, see “Driving Characteristics and Towing Tips.”
- For maximum vehicle and trailer weights, see “Trailer Towing.”
- For information on equipment to tow a trailer, see “Towing Equipment.”

For information on towing a disabled vehicle, see *Towing the Vehicle on page 10-94*. For information on towing the vehicle behind another

vehicle such as a motor home, see *Recreational Vehicle Towing on page 10-95*.

## Driving Characteristics and Towing Tips

### **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.

The vehicle can tow a trailer when equipped with the proper trailer towing equipment. For trailering capacity, see *Trailer Towing (Except eAssist) on page 9-57* or *Trailer Towing (eAssist) on page 9-59*. Trailering changes handling, acceleration, braking, durability, and fuel economy. With the added weight, the engine, transmission, wheel assemblies, and tires are forced to work harder and under greater loads. The trailer also adds wind resistance, increasing the pulling requirements. For safe trailering, correctly use the proper trailering equipment.

The following information has important trailering tips and rules for your safety and that of your passengers. Read this section carefully before pulling a trailer.

## Pulling a Trailer

Here are some important points:

- There are many laws, including speed limit restrictions that apply to trailering. Check for legal requirements.
- Do not tow a trailer at all during the first 1 600 km (1,000 mi) the new vehicle is driven. The engine, axle, or other parts could be damaged.
- During the first 800 km (500 mi) that a trailer is towed, do not drive over 80 km/h (50 mph) and do not make starts at full throttle. This reduces wear on the vehicle.
- The vehicle can tow in D (Drive). Use a lower gear if the transmission shifts too often.
- Obey speed limit restrictions. Do not drive faster than the maximum posted speed for trailers, or no more than 90 km/h (55 mph), to reduce wear on the vehicle.

## Driving with a Trailer

Towing a trailer requires experience. Get familiar with handling and braking with the added trailer weight. The vehicle is now longer and not as responsive as the vehicle is by itself.

Check all trailer hitch parts and attachments, safety chains, electrical connectors, lamps, tires, and mirror adjustments. If the trailer has electric brakes, start the vehicle and trailer moving and then apply the trailer brake controller by hand to be sure the brakes are working.

During the trip, check regularly to be sure that the load is secure, and the lamps and trailer brakes are working properly.

## Towing with a Stability Control System

When towing, the sound of the stability control system might be heard. The system is reacting to the vehicle movement caused by the

trailer, which mainly occurs during cornering. This is normal when towing heavier trailers.

## Following Distance

Stay at least twice as far behind the vehicle ahead as you would when driving the vehicle without a trailer. This can help to avoid situations that require heavy braking and sudden turns.

## Passing

More passing distance is needed when towing a trailer. Because the rig is longer, it is necessary to go farther beyond the passed vehicle before returning to the lane.

## 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

**Notice:** Making very sharp turns while trailering could cause the trailer to come in contact with the vehicle. The vehicle could be damaged. Avoid making very sharp turns while trailering.

When turning with a trailer, make wider turns than normal so the trailer will not strike soft shoulders, curbs, road signs, trees, or other objects. Use the turn signal well in advance and avoid jerky or sudden maneuvers.

### Turn Signals when Towing a Trailer

The turn signal indicators on the instrument panel flash whenever signaling a turn or lane change. Properly hooked up, the trailer lamps also flash, telling other drivers the vehicle is turning, changing lanes, or stopping.

When towing a trailer, the arrows on the instrument panel flash for turns even if the bulbs on the trailer are

burned out. Check occasionally to be sure the trailer bulbs are still working.

### Driving on Grades

Reduce speed and shift to a lower gear before starting down a long or steep downgrade. If the transmission is not shifted down, the brakes might have to be used so much that they would get hot and no longer work well.

The vehicle can tow in D (Drive). Use a lower gear if the transmission shifts too often.

When towing at high altitude on steep uphill grades, engine coolant boils at a lower temperature than at normal altitudes. If the engine is turned off immediately after towing at high altitude on steep uphill grades, the vehicle could show signs similar to engine overheating. To avoid this, let the engine run while parked, preferably on level ground, with the transmission in P (Park) for a few minutes before

turning the engine off. If the overheat warning comes on, see *Engine Overheating on page 10-19*.

### Parking on Hills



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.

- When the wheel chocks are in place, release the brake pedal until the chocks absorb the load.
- Reapply the brake pedal. Then apply the parking brake and shift into P (Park).
- Release the brake pedal.

### Leaving After Parking on a Hill

- Apply and hold the brake pedal while you:
  - Start the engine.
  - Shift into a gear.
  - Release the parking brake.
- Let up on the brake pedal.
- Drive slowly until the trailer is clear of the chocks.
- Stop and have someone pick up and store the chocks.

### Maintenance when Trailer Towing

The vehicle needs service more often when pulling a trailer. See the *Maintenance Schedule on page 11-3*. Things that are especially important in trailer operation are automatic transmission fluid, engine oil, axle lubricant, belts, cooling system, and brake system. Inspect these before and during the trip.

Check periodically to see that all hitch nuts and bolts are tight.

### Engine Cooling when Trailer Towing

The cooling system may temporarily overheat during severe operating conditions. See *Engine Overheating on page 10-19*.

### Trailer Towing (Except eAssist)

Before pulling a trailer, there are three important considerations that have to do with weight:

- The weight of the trailer.
- The weight of the trailer tongue.
- The total weight on your vehicle's tires.

### Weight of the Trailer

How heavy can a trailer safely be?

For a vehicle with a V6 engine, it should never weigh more than 454 kg (1,000 lbs). But even that can be too heavy.

It depends on how the rig is used. For example, speed, altitude, road grades, outside temperature, and how much the vehicle is used to pull a trailer are all important. It can depend on any special equipment on the vehicle, and the amount of tongue weight the vehicle can carry.

## 9-58 Driving and Operating

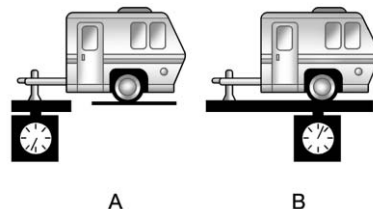
See “Weight of the Trailer Tongue” later in this section for more information.

Maximum trailer weight is calculated assuming only the driver is in the tow vehicle and it has all the required trailering equipment. The weight of additional optional equipment, passengers, and cargo in the tow vehicle must be subtracted from the maximum trailer weight.

Ask your dealer for trailering information or advice, or write us at our Customer Assistance Offices. See *Customer Assistance Offices (U.S. and Canada)* on page 13-4 or *Customer Assistance Offices (Mexico)* on page 13-5 for more information.

### Weight of the Trailer Tongue

The tongue load (A) of any trailer is an important weight to measure because it affects the total gross weight of the vehicle. The Gross Vehicle Weight (GVW) includes the curb weight of the vehicle, any cargo carried in it, and the people who will be riding in the vehicle. If there are a lot of options, equipment, passengers, or cargo in the vehicle, it will reduce the tongue weight the vehicle can carry, which will also reduce the trailer weight the vehicle can tow. If towing a trailer, the tongue load must be added to the GVW because the vehicle will be carrying that weight, too. See *Vehicle Load Limits* on page 9-10 for more information.



The trailer tongue (A) should weigh 10 to 15 percent of the total loaded trailer weight (B).

After loading the trailer, weigh the trailer and then the tongue, separately, to see if the weights are proper. If they are not, adjustments might be made by moving some items around in the trailer.



## Total Weight on Your Vehicle's Tires

Be sure the vehicle's tires are inflated to the upper limit for cold tires. These numbers can be found on the Information label. See *Vehicle Load Limits* on page 9-10. Make sure not to go over the GVW limit for the vehicle, including the weight of the trailer tongue.

## Trailer Towing (eAssist)

The vehicle is neither designed nor intended to tow a trailer.

## Towing Equipment

### Hitches

Use the correct hitch equipment. See your dealer or a hitch dealer for assistance.

- The rear bumper on the vehicle is not intended for hitches. Do not attach rental hitches or other bumper-type hitches to it. Use only a frame-mounted hitch that does not attach to the bumper.
- Will any holes be made in the body of the vehicle when the trailer hitch is installed? If there are, seal the holes when the hitch is removed. If the holes are not sealed, dirt, water, and deadly carbon monoxide (CO) from the exhaust can get into the vehicle. See *Engine Exhaust* on page 9-28.

## Safety Chains

Always attach chains between the vehicle and the trailer. Cross the safety chains under the tongue of the trailer to help prevent the tongue from contacting the road if it becomes separated from the hitch. Leave enough slack so the rig can turn. Never allow safety chains to drag on the ground.

## Trailer Brakes

Does the trailer have its own brakes? Be sure to read and follow the instructions for the trailer brakes so they are installed, adjusted, and maintained properly.

Because the vehicle has antilock brakes, do not tap into the vehicle's brake system. If this is done, both brake systems will not work well, or at all.

## Conversions and Add-Ons

### Add-On Electrical Equipment

**Notice:** Do not add anything electrical to the vehicle unless you check with your dealer first. Some electrical equipment can damage the vehicle and the damage would not be covered by the vehicle's warranty. Some add-on electrical equipment can keep other components from working as they should.

Add-on equipment can drain the vehicle's 12-volt battery, even if the vehicle is not operating.

The vehicle has an airbag system. Before attempting to add anything electrical to the vehicle, see *Servicing the Airbag-Equipped Vehicle on page 3-31* and *Adding Equipment to the Airbag-Equipped Vehicle on page 3-32*.

## 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:

***ACDelco***<sup>®</sup>

Genuine  **Parts**

 **Accessories**

## California Proposition 65 Warning

Most motor vehicles, including this one, contain and/or emit chemicals known to the State of California to

cause cancer and birth defects or other reproductive harm. Engine exhaust, many parts and systems, many fluids, and some component wear by-products contain and/or emit these chemicals.

## California Perchlorate Materials Requirements

Certain types of automotive applications, such as airbag initiators, seat belt pretensioners, and lithium batteries contained in Remote Keyless Entry transmitters, may contain perchlorate materials. Special handling may be necessary. For additional information, see [www.dtsc.ca.gov/hazardouswaste/perchlorate](http://www.dtsc.ca.gov/hazardouswaste/perchlorate).

## Accessories and Modifications

Adding non-dealer accessories or making modifications to the vehicle can affect vehicle performance and safety, including such things as airbags, braking, stability, ride and

handling, emissions systems, aerodynamics, durability, and electronic systems like antilock brakes, traction control, and stability control. These accessories or modifications could even cause malfunction or damage not covered by the vehicle warranty.

Damage to vehicle components resulting from modifications or the installation or use of non-GM certified parts, including control module or software modifications, is not covered under the terms of the vehicle warranty and may affect remaining warranty coverage for affected parts.

GM Accessories are designed to complement and function with other systems on the vehicle. See your dealer to accessorize the vehicle using genuine GM Accessories installed by a dealer technician.

Also, see *Adding Equipment to the Airbag-Equipped Vehicle on page 3-32*.

### Vehicle Checks

#### Doing Your Own Service Work

##### eAssist Vehicles Only

 **WARNING**

Never try to do your own service on eAssist components. You can be injured and the vehicle can be damaged if you try to do your own service work. Service and repair of these eAssist components should only be performed by a trained service technician with the proper knowledge and tools.

#### All Vehicles

 **WARNING**

You can be injured and the vehicle could be damaged if you try to do service work on a vehicle without knowing enough about it.

- Be sure you have sufficient knowledge, experience, the proper replacement parts, and tools before attempting any vehicle maintenance task.
- Be sure to use the proper nuts, bolts, and other fasteners. Metric and English fasteners can be easily confused. If the wrong fasteners are used, parts can later break or fall off. You could be hurt.

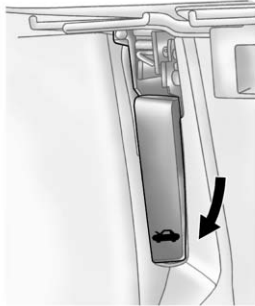
If doing some of your own service work, use the proper service manual. It tells you much more about how to service the vehicle than this manual can. To order the proper service manual, see *Service Publications Ordering Information on page 13-16*.

This vehicle has an airbag system. Before attempting to do your own service work, see *Airbag System Check on page 3-33*.

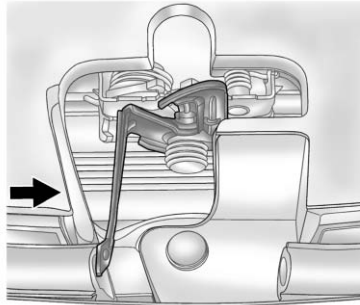
Keep a record with all parts receipts and list the mileage and the date of any service work performed. See *Maintenance Records on page 11-17*.

## Hood

To open the hood:



1. Pull the interior hood release handle located to the left of the steering column below the instrument panel.

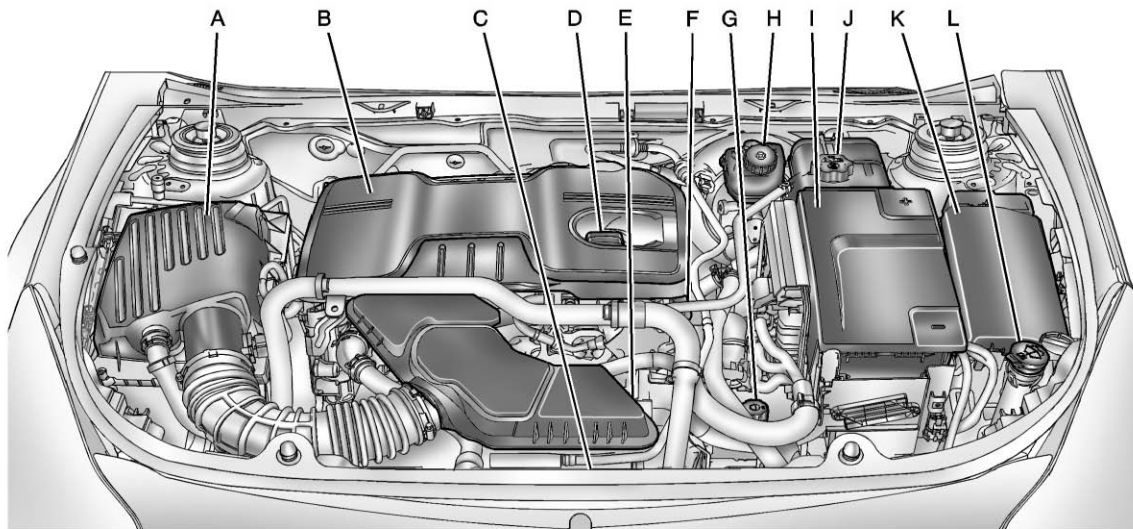


2. Go to the front of the vehicle and push the secondary hood release handle toward the driver side of the vehicle.
3. Lift the hood.

To close the hood:

1. Before closing the hood, be sure all the filler caps are on properly.
2. Lower the hood 30 cm (12 in) above the vehicle and release it so it fully latches. Check to make sure the hood is closed and repeat the process if necessary.

## Engine Compartment Overview



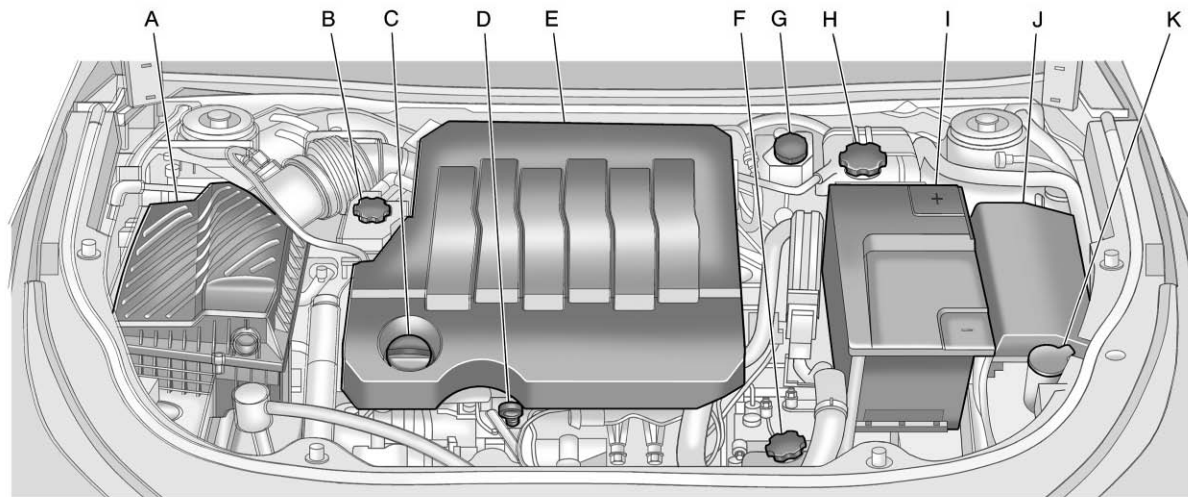
2.4L L4 Engine



- A. *Engine Air Cleaner/Filter on page 10-13.*
- B. *Engine Cover.*
- C. *Engine Cooling Fans (Out of View). See Cooling System on page 10-15.*
- D. *Engine Oil Fill Cap. See Engine Oil on page 10-9.*
- E. *Engine Oil Dipstick (Out of View). See Engine Oil on page 10-9.*
- F. *High Voltage Cable (Orange Color).*
- G. *Transmission Fluid Cap. See Automatic Transmission Fluid on page 10-13.*
- H. *Brake Master Cylinder Reservoir. See Brakes on page 10-22.*
- I. *Battery (Under Cover). See Battery on page 10-25.*
- J. *Coolant Surge Tank and Pressure Cap. See Engine Coolant on page 10-16.*
- K. *Engine Compartment Fuse Block on page 10-36.*
- L. *Windshield Washer Fluid Reservoir. See Washer Fluid on page 10-22.*

## 10-8 Vehicle Care

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**3.6L V6 Engine**

- A. *Engine Air Cleaner/Filter on page 10-13.*
- B. *Power Steering Reservoir and Cap. See Power Steering Fluid (2.4L L4 Engine) on page 10-21 or Power Steering Fluid (3.6L V6 Engine) on page 10-21.*
- C. *Engine Oil Fill Cap. See Engine Oil on page 10-9.*
- D. *Engine Oil Dipstick. See Engine Oil on page 10-9.*
- E. *Engine Cover.*
- F. *Transmission Fluid Cap and Dipstick. See Automatic Transmission Fluid on page 10-13.*
- G. *Brake Master Cylinder Reservoir. See Brakes on page 10-22.*
- H. *Coolant Surge Tank and Pressure Cap. See Engine Coolant on page 10-16.*
- I. *Battery Cover. See Battery on page 10-25.*
- J. *Engine Compartment Fuse Block on page 10-36.*
- K. *Windshield Washer Fluid Reservoir. See Washer Fluid on page 10-22.*

## Engine Oil

To ensure proper engine performance and long life, careful attention must be paid to engine oil. Following these simple, but important steps will help protect your investment:

- Always use engine oil approved to the proper specification and of the proper viscosity grade. See “Selecting the Right Engine Oil” in this section.
- Check the engine oil level regularly and maintain the proper oil level. See “Checking Engine Oil” and “When to Add Engine Oil” in this section.
- Change the engine oil at the appropriate time. See *Engine Oil Life System on page 10-12.*
- Always dispose of engine oil properly. See “What to Do with Used Oil” in this section.

### Checking Engine Oil

It is a good idea to check the engine oil level at each fuel fill. In order to get an accurate reading, the vehicle must be on level ground. The engine oil dipstick handle is a yellow loop. See *Engine Compartment Overview* on page 10-6 for the location of the engine oil dipstick.

Obtaining an accurate oil level reading is essential:

1. If the engine has been running recently, turn off the engine and allow several minutes for the oil to drain back into the oil pan. Checking the oil level too soon after engine shutoff will not provide an accurate oil level reading.
2. Pull out the dipstick and clean it with a paper towel or cloth, then push it back in all the way. Remove it again, keeping the tip down, and check the level.

### When to Add Engine Oil



If the oil is below the cross-hatched area at the tip of the dipstick, add 1 L (1 qt) of the recommended oil and then recheck the level. See “Selecting the Right Engine Oil” in this section for an explanation of what kind of oil to use. For engine oil crankcase capacity, see *Capacities and Specifications* on page 12-2.

**Notice:** Do not add too much oil. Oil levels above or below the acceptable operating range shown on the dipstick are harmful to the engine. If you find that you have an oil level above the operating range, i.e., the engine has so much oil that the oil level gets above the cross-hatched

area that shows the proper operating range, the engine could be damaged. You should drain out the excess oil or limit driving of the vehicle and seek a service professional to remove the excess amount of oil.

See *Engine Compartment Overview* on page 10-6 for the location of the engine oil fill cap.

Add enough oil to put the level somewhere in the proper operating range. Push the dipstick all the way back in when through.

### Selecting the Right Engine Oil

Selecting the right engine oil depends on both the proper oil specification and viscosity grade. See *Recommended Fluids and Lubricants* on page 11-14.

### Specification

Use and ask for licensed engine oils with the dexos1™ approved certification mark. Engine oils meeting the requirements for the vehicle should have the dexos1

approved certification mark. This certification mark indicates that the oil has been approved to the dexos1 specification.



**Notice:** Failure to use the recommended engine oil or equivalent can result in engine damage not covered by the vehicle warranty. Check with your dealer or service provider on whether the oil is approved to the dexos1 specification.

#### **Viscosity Grade**

SAE 5W-30 is the best viscosity grade for the vehicle. Do not use other viscosity grade oils such as SAE 10W-30, 10W-40, or 20W-50.

If in an area of extreme cold, where the temperature falls below  $-20^{\circ}\text{F}$  ( $-29^{\circ}\text{C}$ ), an SAE 0W-30 oil should be used. An oil of this viscosity grade will provide easier cold starting for the engine at extremely low temperatures. When selecting an oil of the appropriate viscosity grade, always select an oil that meets the dexos1 specification or equivalent. See “Specification” for more information.

#### **Engine Oil Additives/Engine Oil Flushes**

Do not add anything to the oil. The recommended oils with the dexos specification and displaying the dexos certification mark are all that is needed for good performance and engine protection.

Engine oil system flushes are not recommended and could cause engine damage not covered by the vehicle warranty.

#### **What to Do with Used Oil**

Used engine oil contains certain elements that can be unhealthy for your skin and could even cause cancer. Do not let used oil stay on your skin for very long. Clean your skin and nails with soap and water, or a good hand cleaner. Wash or properly dispose of clothing or rags containing used engine oil. See the manufacturer's warnings about the use and disposal of oil products.

Used oil can be a threat to the environment. If you change your own oil, be sure to drain all the oil from the filter before disposal. Never dispose of oil by putting it in the trash or pouring it on the ground, into sewers, or into streams or bodies of water. Recycle it by taking it to a place that collects used oil.

### Engine Oil Life System

#### When to Change Engine Oil

This vehicle has a computer system that indicates when to change the engine oil and filter. This is based on a combination of factors which include engine revolutions, engine temperature, and miles driven. Based on driving conditions, the mileage at which an oil change is indicated can vary considerably. For the oil life system to work properly, the system must be reset every time the oil is changed.

When the system has calculated that oil life has been diminished, it indicates that an oil change is necessary. A CHANGE ENGINE OIL SOON message comes on. See *Engine Oil Messages on page 5-35*. Change the oil as soon as possible within the next 1 000 km (600 mi).

It is possible that, if driving under the best conditions, the oil life system might indicate that an oil change is not necessary for up to a year. The engine oil and filter must be changed at least once a year and, at this time, the system must be reset. Your dealer has trained service people who will perform this work and reset the system. It is also important to check the oil regularly over the course of an oil drain interval and keep it at the proper level.

If the system is ever reset accidentally, the oil must be changed at 5 000 km (3,000 mi) since the last oil change. Remember to reset the oil life system whenever the oil is changed.

#### How to Reset the Engine Oil Life System

Reset the system whenever the engine oil is changed so that the system can calculate the next engine oil change. To reset the system:

1. Turn the ignition to ON/RUN with the engine off.
2. Press the DIC MENU button on the turn signal lever to enter the Vehicle Information Menu. Use the thumbwheel to scroll through the menu items until you reach REMAINING OIL LIFE.
3. Press the SET/CLR button to reset the oil life at 100%.
4. Turn the ignition to LOCK/OFF.

The system is reset when the CHANGE ENGINE OIL SOON message is off and the REMAINING OIL LIFE 100% message is displayed.

If the CHANGE ENGINE OIL message comes back on when the vehicle is started, the engine oil life system has not been reset. Repeat the procedure.

## Automatic Transmission Fluid

### How to Check Automatic Transmission Fluid

It is not necessary to check the transmission fluid level.

A transmission fluid leak is the only reason for fluid loss. If a leak occurs, take the vehicle to your dealer service department and have it repaired as soon as possible.

There is a special procedure for checking and changing the transmission fluid. Because this procedure is difficult, you should have this done at your dealer service department. Contact your dealer for additional information or the procedure can be found in the service manual. To purchase a service manual, see *Service Publications Ordering Information* on page 13-16.

Change the fluid and filter at the intervals listed in *Maintenance Schedule* on page 11-3, and be sure to use the fluid listed in *Recommended Fluids and Lubricants* on page 11-14.

### Engine Air Cleaner/Filter

The engine air cleaner/filter is located in the engine compartment on the driver side of the vehicle. See *Engine Compartment Overview* on page 10-6 for more information on location.

### When to Inspect the Engine Air Cleaner/Filter

Inspect the air cleaner/filter at the scheduled maintenance intervals and replace it at the first oil change after each 80 000 km (50,000 mi) interval. See *Maintenance Schedule* on page 11-3 for more information. If you are driving in dusty/dirty conditions, inspect the filter at each engine oil change.

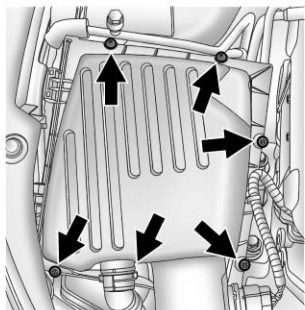
### How to Inspect the Engine Air Cleaner/Filter

To inspect the air cleaner/filter, remove the filter from the vehicle and lightly shake the filter to release loose dust and dirt. If the filter remains covered with dirt, a new filter is required.

## 10-14 Vehicle Care

To inspect or replace the engine air cleaner/filter:

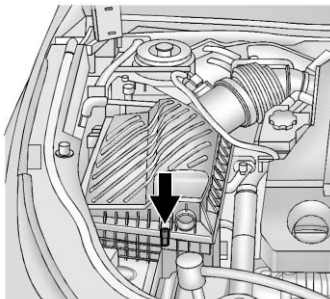
### 2.4L L4 Engine



1. Remove the six screws on top of the engine air cleaner/filter housing.
2. Lift the filter cover housing away from the engine air cleaner/filter housing.
3. Pull out the filter.
4. Inspect or replace the engine air cleaner/filter.

5. Lower the filter cover housing toward the engine.
6. Install the six screws on the top of the housing to lock the cover in place.

### 3.6L V6 Engine



1. Remove the screws on top of the engine air cleaner/filter housing.
2. Lift the filter cover housing away from the engine.
3. Pull out the filter.

4. Inspect or replace the engine air cleaner/filter.
5. Lower the filter cover housing toward the engine.
6. Install the screws on the top of the housing to lock the cover in place.

### 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.

**Notice:** 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.

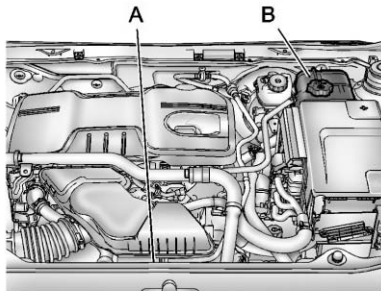


## Cooling System

The cooling system allows the engine to maintain the correct working temperature.

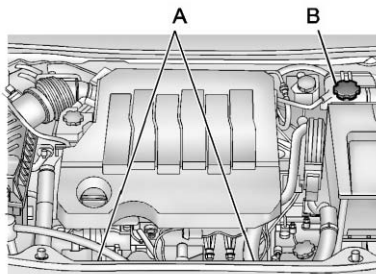
When it is safe to lift the hood:

### 2.4L L4 Engine



- A. Engine Cooling Fans (Out of View)
- B. Coolant Surge Tank and Pressure Cap

### 3.6L V6 Engine



- A. Engine Cooling Fans (Out of View)
- B. Coolant Surge Tank and Pressure Cap

#### WARNING

An electric engine cooling fan under the hood can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underhood electric fan.

#### WARNING

Heater and radiator hoses, and other engine parts, can be very hot. Do not touch them. If you do, you can be burned.

Do not run the engine if there is a leak. If you run the engine, it could lose all coolant. That could cause an engine fire, and you could be burned. Get any leak fixed before you drive the vehicle.

**Notice:** Using coolant other than DEX-COOL<sup>®</sup> can cause premature engine, heater core, or radiator corrosion. In addition, the engine coolant could require changing sooner. Any repairs would not be covered by the vehicle warranty. **Always use DEX-COOL (silicate-free) coolant in the vehicle.**

### Engine Coolant

The cooling system in the vehicle is filled with DEX-COOL<sup>®</sup> engine coolant mixture. See *Recommended Fluids and Lubricants* on page 11-14 and *Maintenance Schedule* on page 11-3 for more information.

The following explains the cooling system and how to check and add coolant when it is low. If there is a problem with engine overheating, see *Engine Overheating* on page 10-19.

### 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

(Continued)

#### WARNING (Continued)

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 for non-eAssist engine(s). Use a 50/50 mixture of deionized water and DEX-COOL coolant for eAssist engine(s).

Use a 50/50 mixture of deionized water or clean, drinkable water and DEX-COOL coolant. If using this mixture, nothing else needs to be added.

This mixture:

- Gives freezing protection down to  $-37^{\circ}\text{C}$  ( $-34^{\circ}\text{F}$ ), outside temperature.
- Gives boiling protection up to  $129^{\circ}\text{C}$  ( $265^{\circ}\text{F}$ ), engine temperature.

- Protects against rust and corrosion.
- Will not damage aluminum parts.
- Helps keep the proper engine temperature.

**Notice: If an improper coolant mixture is used, the engine could overheat and be badly damaged. The repair cost would not be covered by the vehicle warranty. Too much deionized water or clean, drinkable water in the mixture can freeze and crack the engine, radiator, heater core, and other parts.**

Never dispose of engine coolant by putting it in the trash, pouring it on the ground, or into sewers, streams, or bodies of water. Have the coolant changed by an authorized service center, familiar with legal requirements regarding used coolant disposal. This will help protect the environment and your health.

## Checking Coolant

The vehicle must be on a level surface when checking the coolant level.

Check to see if coolant is visible in the coolant surge tank. If the coolant inside the coolant surge tank is boiling, do not do anything else until it cools down.

If coolant is visible but the coolant level is not at or above the mark pointed to, add a 50/50 mixture of deionized water or clean drinkable water and DEX-COOL coolant.

Be sure the cooling system is cool before this is done.

If no coolant is visible in the coolant surge tank, add coolant as follows:

## How to Add Coolant to the Coolant Surge Tank

### WARNING

You can be burned if you spill coolant on hot engine parts. Coolant contains ethylene glycol and it will burn if the engine parts are hot enough. Do not spill coolant on a hot engine.

**Notice:** This vehicle has a specific coolant fill procedure. Failure to follow this procedure could cause the engine to overheat and be severely damaged.

### WARNING

An electric engine cooling fan under the hood can start up even when the engine is not running and can cause injury. Keep hands, clothing, and tools away from any underhood electric fan.

### WARNING

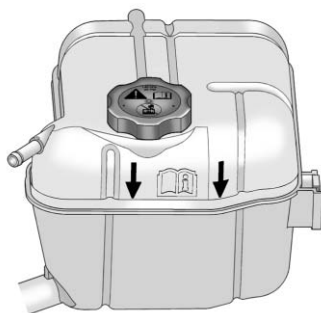
Steam and scalding liquids from a hot cooling system can blow out and burn you badly. They are under pressure, and if you turn the surge tank pressure cap — even a little — they can come out at high speed. Never turn the cap when the cooling system, including the surge tank pressure cap, is hot. Wait for the cooling system and surge tank pressure cap to cool if you ever have to turn the pressure cap.

## 10-18 Vehicle Care



The coolant surge tank pressure cap can be removed when the cooling system, including the surge tank pressure cap and upper radiator hose, is no longer hot.

1. Turn the pressure cap slowly counterclockwise. If a hiss is heard, wait for that to stop. A hiss means there is still some pressure left.
2. Keep turning the cap and remove it.



3. Fill the coolant surge tank with the proper mixture to the mark pointed to on the front of the coolant surge tank.

4. With the coolant surge tank cap off, start the engine and let it run until the upper radiator hose starts getting hot. Watch out for the engine cooling fans. 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 mark pointed to on the front of the coolant surge tank.
5. Replace the cap. Be sure the cap is hand-tight and fully seated.

**Notice:** 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

### 2.4L L4 Engine

There is a engine coolant temperature warning light on the instrument panel cluster that indicates an overheated engine condition. See *Engine Coolant Temperature Warning Light* on page 5-22 for more information.

### 3.6L V6 Engine

There is a coolant temperature gauge and a engine coolant temperature warning light on the instrument panel cluster that indicate an overheated engine condition. See *Engine Coolant Temperature Gauge* on page 5-13 and *Engine Coolant Temperature Warning Light* on page 5-22 for more information.

If the decision is made not to lift the hood when this warning appears, get service help right away. See *Roadside Assistance Program (U.S.*

*and Canada)* on page 13-9 or *Roadside Assistance Program (Mexico)* on page 13-9.

If the decision is made to lift the hood, make sure the vehicle is parked on a level surface.

Then check to see if the engine cooling fans are running. If the engine is overheating, the fans should be running. If not, do not continue to run the engine and have the vehicle serviced.

**Notice: Engine damage from running the engine without coolant is not covered by the warranty.**

### If Steam Is Coming from the Engine Compartment

See *Overheated Engine Protection Operating Mode* on page 10-20 for information on driving to a safe place in an emergency.

### If No Steam Is Coming from the Engine Compartment

If an engine overheat warning is displayed but no steam can be seen or heard, the problem might not be too serious. Sometimes the engine can get a little too hot when the vehicle:

- Climbs a long hill on a hot day.
- Stops after high-speed driving.
- Idles for long periods in traffic.
- Tows a trailer.

If the overheat warning displays with no sign of steam:

1. Turn the air conditioning off.
2. Turn the heater on to the highest temperature and to the highest fan speed. Open the windows as necessary.
3. In heavy traffic, let the engine idle in N (Neutral) while stopped. If it is safe to do so, pull off the road, shift to P (Park) or N (Neutral), and let the engine idle.

### 2.4L L4 Engine

If the engine coolant temperature warning light no longer displays, the vehicle can be driven. Continue to drive the vehicle slowly for about 10 minutes. Keep a safe vehicle distance from the vehicle in front. If the warning does not come back on, continue to drive normally.

### 3.6L V6 Engine

If the temperature overheat gauge is no longer in the overheat zone or an engine coolant temperature warning light no longer displays, the vehicle can be driven. Continue to drive the vehicle slowly for about 10 minutes. Keep a safe vehicle distance from the vehicle in front. If the warning does not come back on, continue to drive normally.

If the warning continues, pull over, stop, and park the vehicle right away.

If there is no sign of steam, idle the engine for three minutes while parked. If the warning is still displayed, turn off the engine until it cools down. Also, see *Overheated Engine Protection Operating Mode on page 10-20*.

### Overheated Engine Protection Operating Mode

This emergency operating mode allows the vehicle to be driven to a safe place in an emergency situation. If an overheated engine condition exists, an overheat protection mode which alternates firing groups of cylinders helps prevent engine damage. In this mode, there is significant loss in power and engine performance.

### 2.4L L4 Engine

The engine coolant temperature warning light comes on the instrument panel, to indicate the vehicle has entered overheated engine protection operating mode. Driving extended distances and/or towing a trailer in the overheat protection mode should be avoided.

### 3.6L V6 Engine

The engine coolant temperature warning light comes on the instrument panel, to indicate the vehicle has entered overheated engine protection operating mode. The temperature gauge also indicates an overheat condition exists. Driving extended distances and/or towing a trailer in the overheat protection mode should be avoided.

## Power Steering Fluid (2.4L L4 Engine)

The vehicle has electric power steering and does not use power steering fluid.

## Power Steering Fluid (3.6L V6 Engine)



See *Engine Compartment Overview* on page 10-6 for information on the location of the power steering fluid reservoir.

### When to Check Power Steering Fluid

It is not necessary to regularly check power steering fluid unless a leak is suspected in the system or an unusual noise is heard.

A fluid loss in this system could indicate a problem. Have the system inspected and repaired.

### How to Check Power Steering Fluid

Check the level after the vehicle has been driven for at least 20 minutes so the fluid is warm.

To check the power steering fluid:

1. Turn the ignition to LOCK/OFF and let the engine compartment cool down.
2. Wipe the cap and the top of the reservoir clean.
3. Unscrew the cap and pull it straight up.
4. Wipe the dipstick with a clean rag.
5. Replace the cap and completely tighten it.
6. Remove the cap again and look at the fluid level on the dipstick.



When the engine is hot, the level should be at the hot MAX level. When the engine is cold, the fluid level should be between MIN and MAX on the dipstick.

### What to Use

To determine what kind of fluid to use, see *Recommended Fluids and Lubricants* on page 11-14. Always use the proper fluid.

### Washer Fluid

#### What to Use

When windshield washer fluid is needed, be sure to read the manufacturer's instructions before use. If operating the vehicle in an area where the temperature may fall below freezing, use a fluid that has sufficient protection against freezing.

#### Adding Washer Fluid



Open the cap with the washer symbol on it. Add washer fluid until the tank is full. See *Engine Compartment Overview* on page 10-6 for reservoir location.

#### Notice

- **When using concentrated washer fluid, follow the manufacturer's instructions for adding water.**
- **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. Also, water does not clean as well as washer fluid.**
- **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.**
- **Do not use engine coolant (antifreeze) in the windshield washer. It can damage the windshield washer system and paint.**

### Brakes

This vehicle has disc 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 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.

**Notice:** 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 in *Capacities and Specifications on page 12-2*.

Brake linings should always be replaced as complete axle sets.

### Brake Pedal Travel

See your dealer if the brake pedal does not return to normal height, or if there is a rapid increase in pedal travel. This could be a sign that brake service might be required.

### Brake Adjustment

Every time the brakes are applied, with or without the vehicle moving, the brakes adjust for wear.

### Replacing Brake System Parts

The braking system on a vehicle is complex. Its many parts have to be of top quality and work well together if the vehicle is to have really good braking. The vehicle was designed and tested with top-quality brake parts. When parts of the braking system are replaced, be sure to get new, approved replacement parts. If this is not done, the brakes might not work properly. For example, installing disc brake pads that are wrong for the vehicle, can change the balance between the front and rear brakes — for the worse. The braking performance expected can change in many other ways if the wrong replacement brake parts are installed.

### Brake Fluid



The brake master cylinder reservoir is filled with DOT 3 brake fluid as indicated on the reservoir cap. See *Engine Compartment Overview on page 10-6* for the location of the reservoir.

There are only two reasons why the brake fluid level in the reservoir might go down:

- The brake fluid level goes down because of normal brake lining wear. When new linings are installed, the fluid level goes back up.

## 10-24 Vehicle Care

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- A fluid leak in the brake hydraulic system can also cause a low fluid level. Have the brake hydraulic system fixed, since a leak means that sooner or later the brakes will not work well.

Do not top off the brake fluid. Adding fluid does not correct a leak. If fluid is added when the linings are worn, there will be too much fluid when new brake linings are installed. Add or remove brake fluid, as necessary, only when work is done on the brake hydraulic system.

### **WARNING**

If too much brake fluid is added, it can spill on the engine and burn, if the engine is hot enough. You or others could be burned, and the vehicle could be damaged. Add brake fluid only when work is done on the brake hydraulic system.

When the brake fluid falls to a low level, the brake warning light comes on. See *Brake System Warning Light* on page 5-19.

### **What to Add**

Use only new DOT 3 brake fluid from a sealed container. See *Recommended Fluids and Lubricants* on page 11-14.

Always clean the brake fluid reservoir cap and the area around the cap before removing it. This helps keep dirt from entering the reservoir.

### **WARNING**

With the wrong kind of fluid in the brake hydraulic system, the brakes might not work well. This could cause a crash. Always use the proper brake fluid.

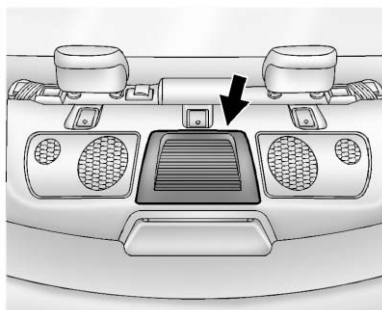
### **Notice**

- **Using the wrong fluid can badly damage brake hydraulic system parts. For example, just a few drops of mineral-based oil, such as engine oil, in the brake hydraulic system can damage brake hydraulic system parts so badly that they will have to be replaced. Do not let someone put in the wrong kind of fluid.**
- **If brake fluid is spilled on the vehicle's painted surfaces, the paint finish can be damaged. Be careful not to spill brake fluid on the vehicle. If you do, wash it off immediately.**

## Battery

This vehicle has a standard 12-volt battery. Refer to the replacement number on the original battery label when a new standard 12-volt battery is needed.

eAssist vehicles also have a high voltage battery. Only a trained service technician with the proper knowledge and tools should inspect, test, or replace the high voltage battery. See your dealer if the high voltage battery needs service. The dealer has information on how to recycle the high voltage battery. There is also information available at <http://www.recyclemybattery.com>.



The eAssist system high voltage battery is cooled with air drawn from the vehicle interior. The cold air intake for the battery is located behind the rear seat, on the filler panel. Do not cover the intake.

### WARNING

Battery posts, terminals, and related accessories contain lead and lead compounds, chemicals known to the State of California to cause cancer and reproductive harm. Wash hands after handling.

## Vehicle Storage

### WARNING

Batteries have acid that can burn you and gas that can explode. You can be badly hurt if you are not careful. See *Jump Starting (with or without eAssist)* on page 10-90 or *Jump Starting (On-board with eAssist Only)* on page 10-93 for tips on working around a battery without getting hurt.

**Infrequent Usage:** Remove the 12-volt battery black, negative (-) cable from the battery to keep the battery from running down.

**Extended Storage:** Remove the 12-volt battery black, negative (-) cable from the battery or use a battery trickle charger.

Remember to reconnect the battery when ready to drive the vehicle.

## 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. Firmly apply both the parking brake and the regular brake. See *Parking Brake on page 9-34*.  
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. Firmly apply the parking brake. See *Parking Brake on page 9-34*.  
Be ready to apply the regular brake immediately if the vehicle begins to move.
3. With the engine off, turn the ignition on, but do not start the engine. Without applying the regular brake, try to move the shift lever out of P (Park) with normal effort. If the shift lever moves out of P (Park), contact your dealer for service.

## Ignition Transmission Lock Check

While parked, and with the parking brake set, try to turn the ignition to LOCK/OFF in each shift lever position.

- The ignition should turn to LOCK/OFF only when the shift lever is in P (Park).
- With the key access ignition system, the ignition key should come out only in LOCK/OFF. See *Ignition Positions (Key Access)* on page 9-16 or *Ignition Positions (Keyless Access)* on page 9-18.

Contact your dealer if service is required.

## Park Brake and P (Park) Mechanism Check

### WARNING

When you are doing this check, the vehicle could begin to move. You or others could be injured and property could be damaged. Make sure there is room in front of the vehicle in case it begins to roll. Be ready to apply the regular brake at once should the vehicle begin to move.

Park on a fairly steep hill, with the vehicle facing downhill. Keeping your foot on the regular brake, set the parking brake.

- To check the parking brake's holding ability: With the engine running and the transmission in N (Neutral), slowly remove foot pressure from the regular brake pedal. Do this until the vehicle is held by the parking brake only.

- To check the P (Park) mechanism's holding ability: With the engine running, shift to P (Park). Then release the parking brake followed by the regular brake.

Contact your dealer if service is required.

## Wiper Blade Replacement

Windshield wiper blades should be inspected for wear and cracking. See *Maintenance Schedule* on page 11-3 for more information.

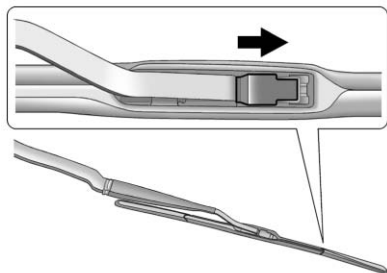
Replacement blades come in different types and are removed in different ways. For proper type and length, see *Maintenance Replacement Parts* on page 11-16.

## 10-28 Vehicle Care

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To replace the windshield wiper blade:

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 enough 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 to touch the windshield.

5. Reverse Steps 1 through 3 for wiper blade replacement.

## Headlamp Aiming

The headlamp aiming system has been preset at the factory.

If the vehicle is damaged in an accident, the aim of the headlamps may be affected and adjustment may be necessary.

It is recommended that a dealer adjust the headlamps. To re-aim the headlamps yourself, use the following procedure.

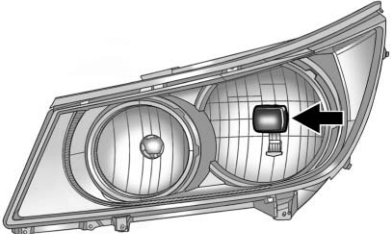
The vehicle should be properly prepared as follows:

- The vehicle should be placed so the headlamps are 7.6 m (25 ft) from a light-colored wall.
- The vehicle must have all four tires on a level surface which is level all the way to the wall.
- The vehicle should be placed so it is perpendicular to the wall or other flat surface.
- The vehicle should not have any snow, ice, or mud on it.

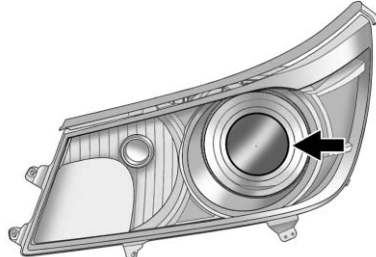
- The vehicle should be fully assembled and all other work stopped while headlamp aiming is being performed.
- The vehicle should be normally loaded with a full tank of fuel and one person or 75 kg (160 lbs) sitting in the driver seat.
- Tires should be properly inflated.

Headlamp aiming is done with the vehicle's low-beam headlamps. The high-beam headlamps will be correctly aimed if the low-beam headlamps are aimed properly.

To adjust the vertical aim:  
1. Open the hood. See *Hood* on page 10-5.

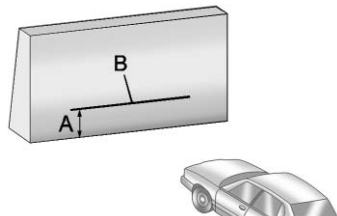


**Base**



**Uplevel**

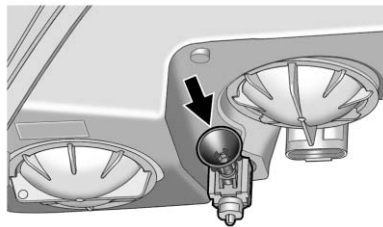
2. Locate the aim dot on the lens of the low-beam headlamp.
3. Measure the distance from the ground to the aim dot on the low-beam headlamp. Record the distance.



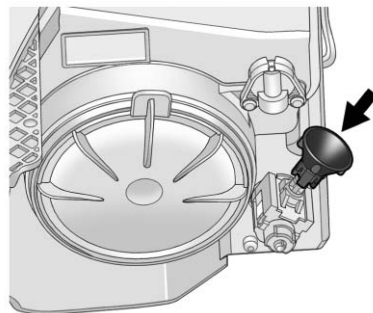
4. At the wall, measure from the ground upward (A) to the recorded distance from Step 3 and mark it.
5. Draw or tape a horizontal line (B) on the wall the width of the vehicle at the height of the mark in Step 4.

**Notice:** Do not cover a headlamp to improve beam cut-off when aiming. Covering a headlamp may cause excessive heat build-up which may cause damage to the headlamp.

6. Turn on the low-beam headlamps and place a piece of cardboard or equivalent in front of the headlamp not being adjusted. This allows only the beam of light from the headlamp being adjusted to be seen on the flat surface.



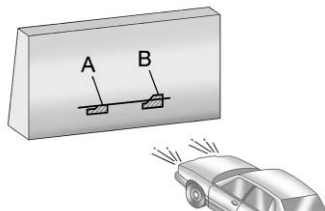
Base



Uplevel

7. Locate the vertical headlamp aiming screws, which are under the hood near each headlamp assembly.
8. Turn the vertical aiming screw until the headlamp beam is aimed to the horizontal tape line. Turn it clockwise or counterclockwise to raise or lower the angle of the beam.





9. Make sure that the light from the headlamp is positioned at the bottom edge of the horizontal tape line. The lamp on the left (A) shows the correct headlamp aim. The lamp on the right (B) shows the incorrect headlamp aim.
10. Repeat Steps 7 through 9 for the opposite headlamp.

## Bulb Replacement

For the proper type of replacement bulbs, see *Replacement Bulbs* on page 10-35.

For any bulb changing procedure not listed in this section, contact your dealer.

## Halogen Bulbs

### WARNING

Halogen bulbs have pressurized gas inside and can burst if you drop or scratch the bulb. You or others could be injured. Be sure to read and follow the instructions on the bulb package.

## High Intensity Discharge (HID) Lighting

### WARNING

The low beam 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.

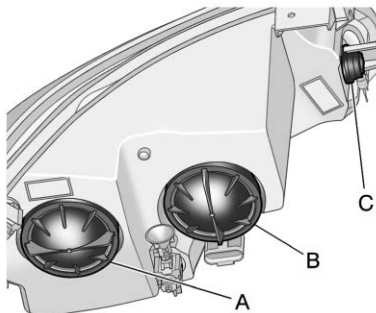
## Headlamps, Front Turn Signal and Parking Lamps

### Base Headlamp Assembly

The base model vehicle has a halogen high-beam headlamp, a low-beam/Daytime Running Lamp (DRL) headlamp, and a turn signal/parking lamp on the headlamp assembly.

To replace one of these bulbs:

1. Open the hood. See *Hood* on page 10-5.



- A. Low-Beam Headlamp/DRL
- B. High-Beam Headlamp
- C. Parking/Turn Signal Lamp

2. If replacing a headlamp bulb, remove the dust cover from the back of the headlamp housing by turning counterclockwise one-quarter turn.

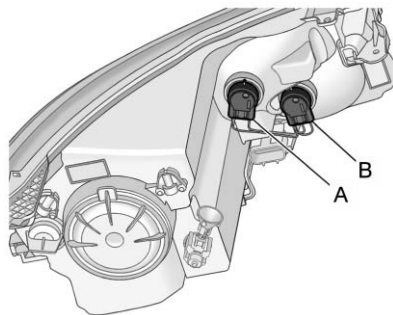
3. Remove the bulb socket from the headlamp by turning counterclockwise one-quarter turn.
4. Remove the bulb from the socket. If replacing the high/low-beam bulb, pry the two clips on either end of the bulb and pull straight out.
5. Install the new bulb in the socket.
6. Install the bulb socket by turning clockwise one-quarter turn.
7. If a headlamp bulb was replaced, install the dust cover in the back of the headlamp housing by turning clockwise one-quarter turn.

## Uplevel Headlamp Assembly

The uplevel model vehicle has a high intensity discharge (HID) high/low beam, a dedicated DRL, and a parking/turn signal lamp on the headlamp assembly. See *High Intensity Discharge (HID) Lighting* on page 10-31 for more information.

To replace one of these bulbs:

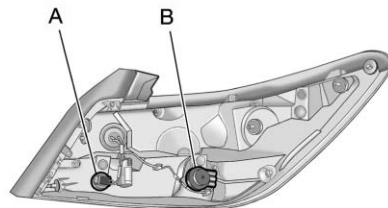
1. Open the hood. See *Hood* on page 10-5.



- A. DRL Lamp
- B. Parking/Turn Signal Lamp

2. Turn the bulb socket counterclockwise to remove it from the headlamp assembly.
3. Pull the bulb straight out from the socket.
4. Push the new bulb into the socket and reinstall the socket into the headlamp assembly by turning it clockwise.

## Taillamps, Turn Signal, Stoplamps, and Back-Up Lamps



- A. Back-Up Lamp
- B. Turn Signal Lamp

To replace one of these lamps:

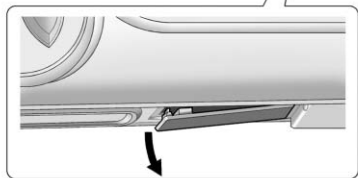
1. Open the trunk. See *Trunk* on page 2-12.
2. Remove the fasteners and pull back the trunk trim.
3. Remove the four plastic wing nuts holding the taillamp assembly in place.
4. Pull out the taillamp assembly and disconnect the wiring harness.
5. Turn the bulb socket counterclockwise to remove it.
6. Pull the old bulb straight out of the bulb socket.
7. Reverse Steps 1 through 6 to install.

### License Plate Lamp

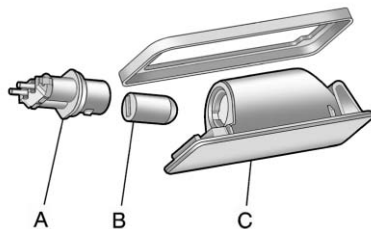
The license plate lamps for this vehicle are on the trunk lid.

To replace one of these bulbs:

1. Open the trunk. See *Trunk* on page 2-12 for more information.



2. Push the end on either of the lamp assemblies (passenger side shown) and then move the lamp assembly down to remove it from the trunk lid.



A. Bulb Socket

B. Bulb

C. Lamp Assembly

3. Turn the bulb socket (A) counterclockwise to remove it from the lamp assembly (C).
4. Pull the bulb (B) straight out of the bulb socket.
5. Push the replacement bulb straight into the bulb socket and turn the bulb socket clockwise to install it into the lamp assembly.
6. Move the lamp assembly into the trunk lid, engaging the clip side first.
7. Push on the lamp side opposite the clip until the lamp assembly snaps into place.

## Replacement Bulbs

Exterior Lamp	Bulb Number
Back-Up Lamp	921LL
Daytime Running Lamp (Uplevel)	3157K LCP
Front Turn Signal/ Parking Lamp	3757NAK LCP
Headlamp High Beam (Base)	H9
Headlamp Low Beam (Base)	H11LL
License Plate Lamp	W5WLL
Rear Turn Signal	3757NAK LCP

For replacement bulbs not listed here, contact your dealer.

## Electrical System

### High Voltage Devices and Wiring

 **WARNING**

Exposure to high voltage can cause shock, burns, and even death. The high voltage components in the vehicle can only be serviced by technicians with special training.

High voltage components are identified by labels. Do not remove, open, take apart, or modify these components. High voltage cable or wiring has orange covering. Do not probe, tamper with, cut, or modify high voltage cable or wiring.

### Electrical System Overload

The vehicle has fuses and circuit breakers to protect against an electrical system overload.

When the current electrical load is too heavy, the circuit breaker opens and closes, protecting the circuit until the current load returns to normal or the problem is fixed. This greatly reduces the chance of circuit overload and fire caused by electrical problems.

Fuses and circuit breakers protect power devices in the vehicle.

Replace a bad fuse with a new one of the identical size and rating.

If there is a problem on the road and a fuse needs to be replaced, the same amperage fuse can be borrowed. Choose some feature of the vehicle that is not needed to use and replace it as soon as possible.

### Headlamp Wiring

An electrical overload may cause the lamps to go on and off, or in some cases to remain off. Have the headlamp wiring checked right away if the lamps go on and off or remain off.

### Windshield Wipers

If the wiper motor overheats due to heavy snow or ice, the windshield wipers will stop until the motor cools and will then restart.

Although the circuit is protected from electrical overload, overload due to heavy snow or ice may cause wiper linkage damage. Always clear ice and heavy snow from the windshield before using the windshield wipers.

If the overload is caused by an electrical problem and not snow or ice, be sure to get it fixed.

### Fuses and Circuit Breakers

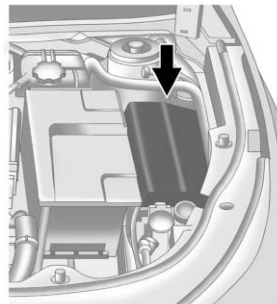
The wiring circuits in the vehicle are protected from short circuits by a combination of fuses and circuit breakers. This greatly reduces the chance of damage caused by electrical problems.

To check a fuse, look at the silver-colored band inside the fuse. If the band is broken or melted, replace the fuse. Be sure to replace a bad fuse with a new one of the identical size and rating.

Fuses of the same amperage can be temporarily borrowed from another fuse location, if a fuse goes out. Replace the fuse as soon as possible.

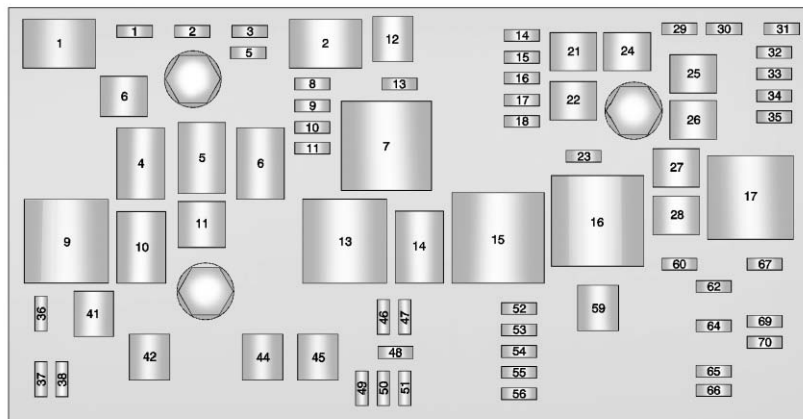
To identify and check fuses, circuit breakers, and relays, see *Engine Compartment Fuse Block* on page 10-36, *Instrument Panel Fuse Block* on page 10-40, and *Rear Compartment Fuse Block* on page 10-42.

### Engine Compartment Fuse Block



To remove the fuse block cover, squeeze the three retaining clips on the cover and lift it straight up.

**Notice:** Spilling liquid on any electrical component on the vehicle may damage it. Always keep the covers on any electrical component.



**Engine Compartment Fuse Block**

The vehicle may not be equipped with all of the fuses, relays, and features shown.

J-Case Fuses	Usage
6	Wiper
12	Starter

J-Case Fuses	Usage
21	Rear Power Windows
22	Sunroof
24	Front Power Windows
25	Passive Entry/ Passive Start Module — Battery 2 (eAssist)
26	Antilock Brake System Pump
27	Electric Park Brake
28	Rear Window Defogger
41	Brake Vacuum Pump
42	Cooling Fan K2
43	Not Used

## 10-38 Vehicle Care

J-Case Fuses	Usage
44	Transmission Auxiliary Oil Pump (eAssist)
45	Cooling Fan K1
59	AIR Pump

Mini Fuses	Usage
1	Transmission Control Module — Battery
2	Engine Control Module Battery
3	Air Conditioning Compressor Clutch
5	Engine Control Module Run/Crank
8	Ignition Coils — Even (Six Cylinder Engine), Ignition Coils — All (Four Cylinder Engine)

Mini Fuses	Usage
9	Ignition Coils — Odd (Six Cylinder Engine)
10	Engine Control Module — Switched Battery (from Engine Control Module Relay)
11	Six Cylinder Engine: Post Catalytic Converter Oxygen Sensor Heater, Mass Air Flow Sensor, Flex Fuel Sensor
13	Run/Crank for Transmission Control Module and Fuel System Control Module
14	Cabin Heater Coolant Pump (eAssist)

Mini Fuses	Usage
14	Motor Generator Unit Coolant Pump (eAssist)
16	Run/Crank for eAssist Power Inverter Module
17	Airbag Module — Run/Crank
18	Vented Seats (eAssist)
23	Variable Effort Steering (if equipped) or eAssist Power Inverter Module
29	Power Lumbar, Left
30	Power Lumbar, Right or Power Pack Cooling Fan (eAssist)



Mini Fuses	Usage
31	Passive Entry/ Passive Start Module — Battery 1 (eAssist)
32	Body Control Module 6
33	Heated Seat — Front
34	Antilock Brake System Valves
35	Amplifier
36	Adaptive Forward Lighting (AFL) Motors — Battery
37	Right High Beam
38	Left High Beam
46	Cooling Fan Relay

Mini Fuses	Usage
47	Six Cylinder Engine: Pre Catalytic Converter Oxygen Sensor Heater, Canister Purge Solenoid. Four Cylinder Engine: Pre and Post Catalytic Converter Oxygen Sensor Heaters, Canister Purge Solenoid, Mass Air Flow Sensor.
48	Fog Lamps
49	Right High Intensity Discharge Headlamp
50	Left High Intensity Discharge Headlamp
51	Horn
52	Cluster Run/Crank

Mini Fuses	Usage
53	Run/Crank for Inside Rearview Mirror, Rear Vision Camera
54	Run/Crank for: Heating, Ventilation and Air Conditioning
55	Outside Rearview Mirror, Universal Garage Door Opener, Front Window Switches
56	Windshield Washer
60	Heated Mirror
62	Canister Vent
64	Adaptive Forward Lighting (AFL) Module — Battery
65	Not Used
66	AIR Solenoid (eAssist)
67	Fuel System Control Module

## 10-40 Vehicle Care

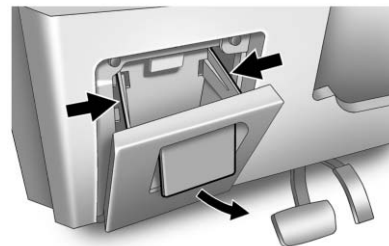
Mini Fuses	Usage
69	Regulated Voltage Control Sensor
70	Ultrasonic Parking Assist/Side Blind Zone

Mini Relays	Usage
7	Engine Control Module
9	Cooling Fan
13	Cooling Fan
15	Run/Crank
16	AIR Pump
17	Rear Window Defogger

Micro Relays	Usage
1	Air Conditioning Compressor Clutch
2	Starter
4	Wiper Speed
5	Wiper Control
6	Cabin Heater Coolant Pump (eAssist)
10	Cooling Fan
14	Headlamp Low Beam

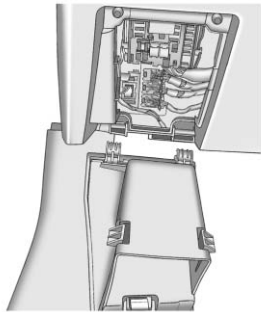
Ultra Micro Relays	Usage
11	Transmission Auxiliary Oil Pump (eAssist)

## Instrument Panel Fuse Block

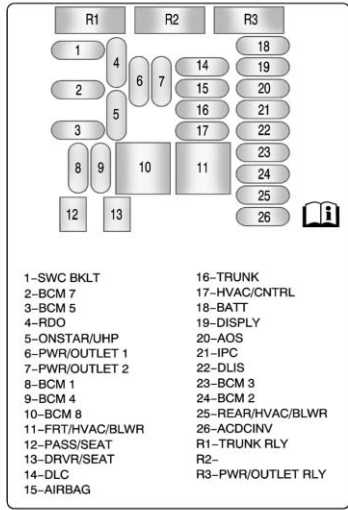


The instrument panel fuse block is located in the instrument panel, on the driver side of the vehicle. To access the fuses, open the fuse panel door by pulling down at the top.

Press in on the sides of the door to release it from the instrument panel.



Pull the door toward you to release it from the hinge.



**Instrument Panel Fuse Block**

The vehicle may not be equipped with all of the fuses, relays, and features shown.

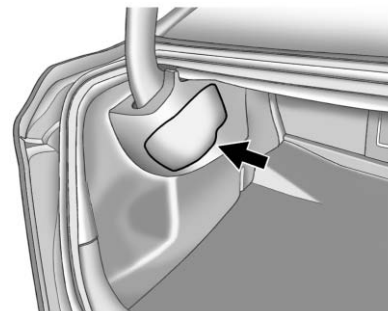
Fuses	Usage
1	Steering Wheel Controls Backlight
2	Body Control Module 7
3	Body Control Module 5
4	Radio
5	OnStar
6	Power Outlet 1
7	Power Outlet 2
8	Body Control Module 1
9	Body Control Module 4
10	Body Control Module 8 (J-Case Fuse)
11	Front Heater Ventilation Air Conditioning/Blower (J-Case Fuse)

Fuses	Usage
12	Passenger Seat (Circuit Breaker)
13	Driver Seat (Circuit Breaker)
14	Diagnostic Link Connector
15	Airbag
16	Trunk
17	Heater Ventilation Air Conditioning Controller
18	Pre-Fuse for Fuses 4 and 5
19	Infotainment and Center Stack Displays, Head-Up Display, Preferred Device Interface Module, Rear Seat Infotainment (eAssist)
20	Automatic Occupant Sensing

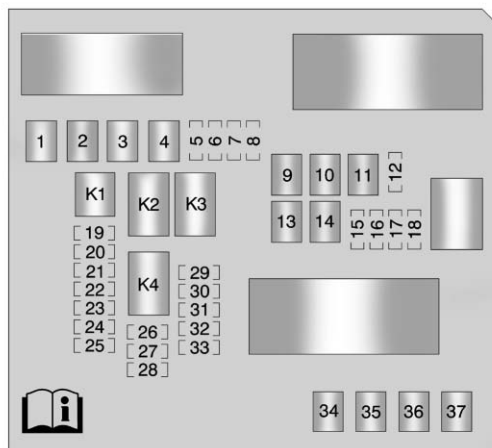
Fuses	Usage
21	Instrument Panel Cluster
22	Discrete Logic Ignition Switch
23	Body Control Module 3
24	Body Control Module 2
25	Rear Heater Ventilation Air Conditioning/Blower
26	AC/DC Inverter

Relays	Usage
R1	Trunk Relay
R2	Not Used
R3	Power Outlet Relay

## Rear Compartment Fuse Block



The rear compartment fuse block is located on the left side of the trunk behind a cover. Vehicles with eAssist do not have a rear compartment fuse block.



Mini Fuses	Usage
17	Not Used
18	Passive Entry/ Passive Start Module — Battery 1 (without eAssist)
19	Not Used
20	Run/Crank for Rear Sunshade (without eAssist), Ventilated Seats (without eAssist)
21	Not Used
22	Not Used
23	Not Used
24	Not Used
25	Not Used
26	Not Used
27	Not Used
28	Not Used
29	Not Used

The vehicle may not be equipped with all of the fuses, relays, and features shown.

Mini Fuses	Usage
5	Not Used
6	Heated Steering Wheel — Run/Crank (without eAssist)

Mini Fuses	Usage
7	Not Used
8	Not Used
12	Not Used
15	Not Used
16	Not Used

Mini Fuses	Usage
30	Not Used
31	Electronic Suspension Control (without eAssist)
32	Rear Seat Infotainment (without eAssist)
33	All-Wheel Drive (without eAssist)

J-Case Fuses	Usage
1	Not Used
2	Not Used
3	Not Used
4	Not Used
9	Not Used
10	Not Used
11	Not Used
13	Not Used

J-Case Fuses	Usage
14	Not Used
34	Not Used
35	Passive Entry/Passive Start Module — Battery 2 (without eAssist)
36	Not Used
37	Not Used

Relays	Usage
K1	Not Used
K2	Run/Crank Relay for Seat Ventilation (without eAssist), Sunshade (without eAssist)
K3	Run Relay for Heated Steering Wheel (without eAssist)
K4	Not Used

## 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* on page 9-10.

(Continued)

**WARNING (Continued)**

- 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.
- Replace any tires that have been damaged by impacts with potholes, curbs, etc.

(Continued)

**WARNING (Continued)**

- 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 55 km/h (35 mph) on slippery surfaces such as snow, mud, ice, etc. Excessive spinning may cause the tires to explode.

**Winter Tires**

Consider installing winter tires on the vehicle if frequent driving on snow or ice covered roads is expected. All season tires provide good overall performance on most surfaces, but they may not offer the traction or the same level of performance as winter tires on snow or ice covered roads.

Winter tires, in general, are designed for increased traction on snow and ice covered roads. 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.

See your dealer for details regarding winter tire availability and proper tire selection. Also, see *Buying New Tires on page 10-60*.

If using snow tires:

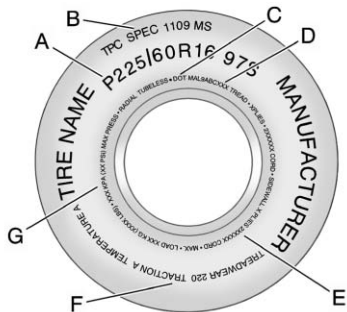
- Use tires of the same brand and tread type on all four wheel positions.
- Use only radial ply tires of the same size, load range, and speed rating as the original equipment tires.

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.

### Tire Sidewall Labeling

Useful information about a tire is molded into its sidewall. The examples show a typical passenger vehicle tire and a compact spare tire sidewall.



#### Passenger (P-Metric) Tire Example

**(A) Tire Size:** The tire size is a combination of letters and numbers used to define a

particular tire's width, height, aspect ratio, construction type, and service description. See the "Tire Size" illustration later in this section for more detail.

**(B) TPC Spec (Tire Performance Criteria Specification):** Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

**(C) 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.

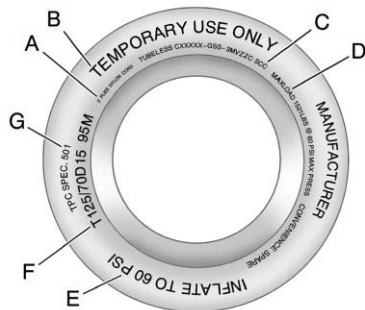
**(D) Tire Identification Number (TIN):** The letters and numbers following the DOT (Department of Transportation) code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(E) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(F) Uniform Tire Quality Grading (UTQG):** Tire manufacturers are required to grade tires based on three performance factors: treadwear, traction, and temperature resistance. For more information see *Uniform Tire Quality Grading on page 10-62*.



**(G) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load.



### Compact Spare Tire Example

**(A) Tire Ply Material:** The type of cord and number of plies in the sidewall and under the tread.

**(B) Temporary Use Only:** The compact spare tire or temporary use tire has a tread life of approximately 5 000 km (3,000 mi) and should not be driven at speeds over 105 km/h (65 mph). The compact spare tire is for emergency use when a regular road tire has lost air and gone flat. If the vehicle has a compact spare tire, see *Compact Spare Tire* on page 10-89 and *If a Tire Goes Flat* on page 10-64.

**(C) Tire Identification Number (TIN):** The letters and numbers following the DOT (Department of Transportation) code are the Tire Identification Number (TIN). The TIN shows the manufacturer and plant code, tire size, and date the tire was manufactured. The TIN is molded onto both sides of the tire, although only one side may have the date of manufacture.

**(D) Maximum Cold Inflation Load Limit:** Maximum load that can be carried and the maximum pressure needed to support that load.

**(E) Tire Inflation:** The temporary use tire or compact spare tire should be inflated to 420 kPa (60 psi). For more information on tire pressure and inflation see *Tire Pressure* on page 10-51.

**(F) Tire Size:** A combination of letters and numbers define a tire's width, height, aspect ratio, construction type, and service description. The letter T as the first character in the tire size means the tire is for temporary use only.

**(G) TPC Spec**

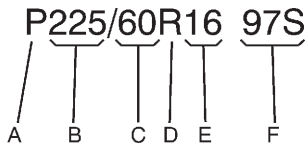
**(Tire Performance Criteria Specification):**

Original equipment tires designed to GM's specific tire performance criteria have a TPC specification code molded onto the sidewall. GM's TPC specifications meet or exceed all federal safety guidelines.

**Tire Designations**

**Tire Size**

The following is an example of a typical passenger vehicle tire size.



**(A) Passenger (P-Metric) Tire:**

The United States version of a metric tire sizing system. The letter P as the first character in the tire size means a passenger vehicle tire engineered to standards set by the U.S. Tire and Rim Association.

**(B) Tire Width:** The three-digit number indicates the tire section width in millimeters from sidewall to sidewall.

**(C) Aspect Ratio:** A two-digit number that indicates the tire height-to-width measurements. For example, if the tire size aspect ratio is 60, as shown in item C of the illustration, it would mean that the tire's sidewall is 60 percent as high as it is wide.

**(D) 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.

**(E) Rim Diameter:** Diameter of the wheel in inches.

**(F) 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 steering, power brakes, 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 that is located between the plies and the tread. Cords may be made from steel or other reinforcing materials.

**Bead:** The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

**Bias Ply Tire:** A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

**Cold Tire Pressure:** The amount of air pressure in a tire, measured in kPa (kilopascal) or psi (pounds per square inch) before a tire has built up heat from driving. See *Tire Pressure on page 10-51*.

**Curb Weight:** The weight of a motor vehicle with standard and optional equipment including the maximum capacity of fuel, oil, and coolant, but without passengers and cargo.

**DOT Markings:** A code molded into the sidewall of a tire signifying that the tire is in compliance with the U.S. Department of Transportation (DOT) Motor Vehicle Safety Standards. The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand, and date of production.

**GVWR:** Gross Vehicle Weight Rating. See *Vehicle Load Limits on page 9-10*.

**GAWR FRT:** Gross Axle Weight Rating for the front axle. See *Vehicle Load Limits on page 9-10*.

**GAWR RR:** Gross Axle Weight Rating for the rear axle. See *Vehicle Load Limits on page 9-10*.

**Intended Outboard Sidewall:**

The side of an asymmetrical tire, that must always face outward when mounted on a vehicle.

**Kilopascal (kPa):** The metric unit for air pressure.

**Light Truck (LT-Metric) Tire:**

A tire used on light duty trucks and some multipurpose passenger vehicles.

**Load Index:** An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

**Maximum Inflation Pressure:**

The maximum air pressure to which a cold tire can be inflated. The maximum air pressure is molded onto the sidewall.

**Maximum Load Rating:**

The load rating for a tire at the maximum permissible inflation pressure for that tire.

**Maximum Loaded Vehicle**

**Weight:** The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

**Normal Occupant Weight:** The number of occupants a vehicle is designed to seat multiplied by 68 kg (150 lbs). See *Vehicle Load Limits on page 9-10*.

**Occupant Distribution:**

Designated seating positions.

**Outward Facing Sidewall:** The side of an asymmetrical tire that has a particular side that faces outward when mounted on a vehicle. The side of the tire that contains a whitewall, bears white lettering, or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the other sidewall of the tire.

**Passenger (P-Metric) Tire:**

A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

**Recommended Inflation**

**Pressure:** Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard. See *Tire Pressure on page 10-51* and *Vehicle Load Limits on page 9-10*.

**Radial Ply Tire:** A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

**Rim:** A metal support for a tire and upon which the tire beads are seated.

**Sidewall:** The portion of a tire between the tread and the bead.

**Speed Rating:**

An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

**Traction:** The friction between the tire and the road surface. The amount of grip provided.

**Tread:** The portion of a tire that comes into contact with the road.

**Treadwear Indicators:**

Narrow bands, sometimes called wear bars, that show across the tread of a tire when only 1.6 mm (1/16 in) of tread remains. See *When It Is Time for New Tires* on page 10-59.

**UTQGS (Uniform Tire Quality Grading Standards):**

A tire information system that provides consumers with ratings for a tire's traction, temperature, and treadwear.

Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire. See *Uniform Tire Quality Grading* on page 10-62.

**Vehicle Capacity Weight:**

The number of designated seating positions multiplied by 68 kg (150 lbs) plus the rated cargo load. See *Vehicle Load Limits* on page 9-10.

**Vehicle Maximum Load on the**

**Tire:** Load on an individual tire due to curb weight, accessory weight, occupant weight, and cargo weight.

**Vehicle Placard:** A label permanently attached to a vehicle showing the vehicle capacity weight and the original equipment tire size and recommended inflation pressure.

See "Tire and Loading Information Label" under *Vehicle Load Limits* on page 9-10.

**Tire Pressure**

Tires need the correct amount of air pressure to operate effectively.

**Notice: Neither tire underinflation nor overinflation is good. Underinflated tires, or tires that do not have enough air, can result in:**

- **Tire overloading and overheating which could lead to a blowout.**
- **Premature or irregular wear.**
- **Poor handling.**
- **Reduced fuel economy.**

**Overinflated tires, or tires that have too much air, can result in:**

- **Unusual wear.**
- **Poor handling.**
- **Rough ride.**
- **Needless damage from road hazards.**

The Tire and Loading Information label on the vehicle indicates the original equipment tires and the correct cold tire inflation pressures. The recommended pressure is the minimum air pressure needed to support the vehicle's maximum load carrying capacity.

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 on page 9-10*. How the vehicle is loaded affects

vehicle handling and ride comfort. Never load the vehicle with more weight than it was designed to carry.

### **When to Check**

Check the tires once a month or more. Do not forget the compact spare tire, if the vehicle has one. The compact spare should be at 420 kPa (60 psi). For additional information regarding the compact spare tire, see *Compact Spare Tire on page 10-89*.

### **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.

Return the valve caps on the valve stems to prevent leaks and keep out dirt and moisture.

## Tire Pressure Monitor System

The Tire Pressure Monitor System (TPMS) uses radio and sensor technology to check tire pressure levels. The TPMS sensors monitor the air pressure in your tires and transmit tire pressure readings to a receiver located in the vehicle.

Each tire, including the spare (if provided), should be checked monthly when cold and inflated to the inflation pressure recommended by the vehicle manufacturer on the vehicle placard or tire inflation pressure label. (If your vehicle has tires of a different size than the size indicated on the vehicle placard or tire inflation pressure label, you should determine the proper tire inflation pressure for those tires.)

As an added safety feature, your vehicle has been equipped with a tire pressure monitoring system (TPMS) that illuminates a low tire

pressure telltale when one or more of your tires is significantly under-inflated.

Accordingly, when the low tire pressure telltale illuminates, you should stop and check your tires as soon as possible, and inflate them to the proper pressure. Driving on a significantly under-inflated tire causes the tire to overheat and can lead to tire failure. Under-inflation also reduces fuel efficiency and tire tread life, and may affect the vehicle's handling and stopping ability.

Please note that the TPMS is not a substitute for proper tire maintenance, and it is the driver's responsibility to maintain correct tire pressure, even if under-inflation has not reached the level to trigger illumination of the TPMS low tire pressure telltale.

Your vehicle has also been equipped with a TPMS malfunction indicator to indicate when the system is not operating properly.

The TPMS malfunction indicator is combined with the low tire pressure telltale. When the system detects a malfunction, the telltale will flash for approximately one minute and then remain continuously illuminated. This sequence will continue upon subsequent vehicle start-ups as long as the malfunction exists.

When the malfunction indicator is illuminated, the system may not be able to detect or signal low tire pressure as intended. TPMS malfunctions may occur for a variety of reasons, including the installation of replacement or alternate tires or wheels on the vehicle that prevent the TPMS from functioning properly. Always check the TPMS malfunction telltale after replacing one or more tires or wheels on your vehicle to ensure that the replacement or alternate tires and wheels allow the TPMS to continue to function properly.

See *Tire Pressure Monitor Operation* on page 10-54 for additional information.

### Federal Communications Commission (FCC) Rules and with Industry Canada Standards

See *Radio Frequency Statement on page 13-20* for information regarding Part 15 of the Federal Communications Commission (FCC) Rules and with Industry Canada Standards RSS-GEN/210/220/310.

### 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 transmits 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 loading information label. See *Vehicle Load Limits on page 9-10*.

A message to check the pressure in a specific tire displays in the Driver Information Center (DIC). The low tire pressure warning light and the DIC warning message come on at each ignition cycle until the tires are inflated to the correct inflation pressure. Using the DIC, tire pressure levels can be viewed. For additional information and

details about the DIC operation and displays see *Driver Information Center (DIC) on page 5-25*.

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

A Tire and Loading Information label, attached to your vehicle, shows the size of the original equipment tires and the correct inflation pressure for the tires when they are cold. See *Vehicle Load Limits on page 9-10*, for an example of the Tire and Loading Information label and its location. Also see *Tire Pressure on page 10-51*.

The TPMS can warn about a low tire pressure condition but it does not replace normal tire maintenance.



See *Tire Inspection* on page 10-57, *Tire Rotation* on page 10-58 and *Tires* on page 10-44.

**Notice: 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.**

Factory-installed Tire Inflator Kits use a GM approved liquid tire sealant. Using non-approved tire sealants could damage the TPMS sensors. See *Tire Sealant and Compressor Kit (With Pressure Relief Button)* on page 10-67 or *Tire Sealant and Compressor Kit (With Pressure Deflation Button)* on page 10-74 for information regarding the inflator kit materials and instructions.

### TPMS Malfunction Light and Message

The TPMS will not function properly if one or more of the TPMS sensors are missing or inoperable. When the system detects a malfunction, the low tire warning light flashes for about one minute and then stays on for the remainder of the ignition cycle. A DIC warning message also displays. The malfunction light and DIC warning message come on at each ignition cycle until the problem is corrected. Some of the conditions that can cause these to come on are:

- One of the road tires has been replaced with the spare tire. The spare tire does not have a TPMS sensor. The malfunction light and DIC message should go off after the road tire is replaced and the sensor matching process is performed successfully. See “TPMS Sensor Matching Process” later in this section.
- The TPMS sensor matching process was not done or not completed successfully after rotating the tires. The malfunction light and the DIC message should go off after successfully completing the sensor matching process. See “TPMS Sensor Matching Process” later in this section.
- One or more TPMS sensors are missing or damaged. The malfunction light and the DIC message should go off when the TPMS sensors are installed and the sensor matching process is performed successfully. See your dealer for service.
- Replacement tires or wheels do not match the original equipment tires or wheels. Tires and wheels other than those recommended could prevent the TPMS from functioning properly. See *Buying New Tires* on page 10-60.

- 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 comes on and stays 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. The TPMS sensor matching process should also be performed after replacing a spare tire with a road tire containing the TPMS sensor. The malfunction light and the DIC message should go off at the next ignition cycle. The sensors are matched to the tire/wheel positions,

using a TPMS relearn tool, in the following order: driver side front tire, passenger side front tire, passenger side rear tire, and driver side rear. See your dealer for service or to purchase a relearn tool.

There are two minutes to match the first tire/wheel position, and five minutes overall to match all four tire/wheel positions. If it takes longer, the matching process stops and must be restarted.

The TPMS sensor matching process is:

1. Set the parking brake.
2. Turn the ignition to ON/RUN with the engine off.
3. Use the MENU button to select the Vehicle Information Menu in the Driver Information Center (DIC).
4. Use the thumbwheel to scroll to the Tire Pressure Menu Item screen.

5. Press the SET/CLR button to begin the sensor matching process.

A message asking if the process should begin should appear.

6. Press the SET/CLR button again to confirm the selection.

The horn sounds twice to signal the receiver is in relearn mode and the TIRE LEARNING ACTIVE message displays on the DIC screen.

7. Start with the driver side front tire.
8. 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.
9. Proceed to the passenger side front tire, and repeat the procedure in Step 8.

10. Proceed to the passenger side rear tire, and repeat the procedure in Step 8.
11. Proceed to the driver side rear tire, and repeat the procedure in Step 8. The horn sounds two times to indicate the sensor identification code has been matched to the driver side rear tire, and the TPMS sensor matching process is no longer active. The TIRE LEARNING ACTIVE message on the DIC display screen goes off.
12. Turn the ignition to LOCK/OFF.
13. Set all four tires to the recommended air pressure level as indicated on the Tire and Loading Information label.

### Tire Inspection

We recommend that the tires, including the spare tire, if the vehicle has one, be inspected for signs of wear or damage at least once a month.

Replace the tire if:

- The indicators at three or more places around the tire can be seen.
- There is cord or fabric showing through the tire's rubber.

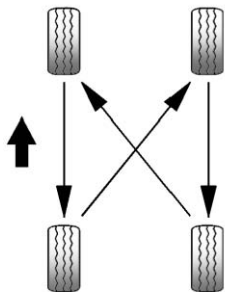
- The tread or sidewall is cracked, cut, or snagged deep enough to show cord or fabric.
- The tire has a bump, bulge, or split.
- The tire has a puncture, cut, or other damage that cannot be repaired well because of the size or location of the damage.

### Tire Rotation

Tires should be rotated every 12 000 km (7,500 mi). See *Maintenance Schedule on page 11-3*.

Tires are rotated to achieve a uniform wear for all tires. The first rotation is the most important.

Any time unusual wear is noticed, rotate the tires as soon as possible and check the wheel alignment. Also check for damaged tires or wheels. See *When It Is Time for New Tires on page 10-59* and *Wheel Replacement on page 10-63*.



Use this rotation pattern when rotating the tires.

Do not include the compact spare tire in the tire rotation.

Adjust the front and rear tires to the recommended inflation pressure on the Tire and Loading Information label after the tires have been rotated.

See *Tire Pressure on page 10-51* and *Vehicle Load Limits on page 9-10*.

Reset the Tire Pressure Monitor System. See *Tire Pressure Monitor Operation on page 10-54*.

Check that all wheel nuts are properly tightened. See “Wheel Nut Torque” under *Capacities and Specifications on page 12-2*.

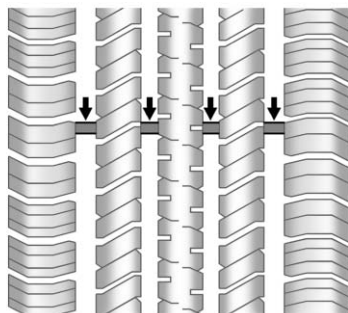
#### **WARNING**

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle. In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.

Lightly coat the center of the wheel hub with wheel bearing grease after a wheel change or tire rotation to prevent corrosion or rust build-up. Do not get grease on the flat wheel mounting surface or on the wheel nuts or bolts.

## When It Is Time for New Tires

Factors such as maintenance, temperatures, driving speeds, vehicle loading, and road conditions affect the wear rate of the tires.



Treadwear indicators are one way to tell when it is time for new tires. Treadwear indicators appear when the tires have only 1.6 mm (1/16 in) or less of tread remaining. See *Tire Inspection* on page 10-57 and *Tire Rotation* on page 10-58 for more information.

The rubber in tires ages over time. This also applies for the spare tire, if the vehicle has one, even if it is never used. Multiple conditions including temperatures, loading conditions, and inflation pressure maintenance affect how fast aging takes place.

Tires will typically need to be replaced due to wear before they may need to be replaced due to age. Consult the tire manufacturer for more information on when tires should be replaced.

## Vehicle Storage

Tires age when stored normally mounted on a parked vehicle. Park a vehicle that will be stored for at least a month in a cool, dry, clean area away from direct sunlight to slow aging. This area should be free of grease, gasoline, or other substances that can deteriorate rubber.

Parking for an extended period can cause flat spots on the tires that may result in vibrations while driving. When storing a vehicle for at least a month, remove the tires or raise the vehicle to reduce the weight from the tires.

### Buying New Tires

GM has developed and matched specific tires for the vehicle. The original equipment tires installed were designed to meet General Motors Tire Performance Criteria Specification (TPC Spec) system rating. When replacement tires are needed, GM strongly recommends buying tires with the same TPC Spec rating.

GM's exclusive TPC Spec system considers over a dozen critical specifications that impact the overall performance of the vehicle, including brake system performance, ride and handling, traction control, and tire pressure monitoring performance. GM's TPC Spec number is molded onto the tire's sidewall near the tire size. If the tires have an all-season tread design, the TPC Spec number

will be followed by MS for mud and snow. See *Tire Sidewall Labeling on page 10-46* for additional information.

GM recommends replacing all the tires at the same time. 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. See *Tire Inspection on page 10-57* and *Tire Rotation on page 10-58* for information on proper tire rotation.

#### WARNING

Tires could explode during improper service. Attempting to mount or dismount a tire could cause injury or death. Only your  
(Continued)

#### WARNING (Continued)

dealer or authorized tire service center should mount or dismount the tires.

#### WARNING

Mixing tires of different sizes, brands, or types may cause loss of control of the vehicle, resulting in a crash or other vehicle damage. Use the correct size, brand, and type of tires on all wheels.

#### WARNING

Using bias-ply tires on the vehicle may cause the wheel rim flanges to develop cracks after many miles of driving.  
(Continued)

**WARNING (Continued)**

A tire and/or wheel could fail suddenly and cause a crash. Use only radial-ply tires with the wheels on the vehicle.

If the vehicle tires must be replaced with a tire that does not have a TPC Spec number, make sure they are the same size, load range, speed rating, and construction (radial) as the original tires.

Vehicles that have a tire pressure monitoring system could give an inaccurate low-pressure warning if non-TPC Spec rated tires are installed. See *Tire Pressure Monitor System on page 10-53*.

The Tire and Loading Information label indicates the original equipment tires on the vehicle. See *Vehicle Load Limits on page 9-10* 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, and electronic stability control, the performance of these systems can also be affected.

 **WARNING**

If different sized wheels are used, there may not be an acceptable level of performance and safety if tires not recommended for those wheels are selected. This increases the chance of a crash and serious injury. Only use GM specific wheel and tire systems developed for the vehicle, and have them properly installed by a GM certified technician.

See *Buying New Tires on page 10-60* and *Accessories and Modifications on page 10-3* for additional information.

## Uniform Tire Quality Grading

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:

### Treadwear 200 Traction AA Temperature A

The following information relates to the system developed by the United States National Highway Traffic Safety Administration (NHTSA), which grades tires by treadwear, traction, and temperature performance. This applies only to vehicles sold in the United States. The grades are molded on the sidewalls of most passenger car tires. The Uniform Tire Quality Grading (UTQG) system does not apply to deep tread, winter-type snow tires, space-saver, or

temporary use spare tires, tires with nominal rim diameters of 10 to 12 inches (25 to 30 cm), or to some limited-production tires.

While the tires available on General Motors passenger cars and light trucks may vary with respect to these grades, they must also conform to federal safety requirements and additional General Motors Tire Performance Criteria (TPC) standards.

All Passenger Car Tires Must Conform to Federal Safety Requirements In Addition To These Grades.

### Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test

course. For example, a tire graded 150 would wear one and a 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 – AA, A, B, C

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 – A, B, C**

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 will not be necessary on a regular basis. However, check the alignment if there is unusual tire wear or if the vehicle is pulling to one side or the other.

If the vehicle vibrates when driving on a smooth road, the tires and wheels might 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.

## 10-64 Vehicle Care

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.

**Notice:** 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.

See *If a Tire Goes Flat* on page 10-64 for more information.

### Used Replacement Wheels

#### WARNING

Replacing a wheel with a used one is dangerous. How it has been used or how far it has been driven may be unknown. It could fail suddenly and cause a crash. 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

(Continued)

### WARNING (Continued)

parts. The area damaged by the tire chains could cause loss of control and a crash.

Use another type of traction device only if its manufacturer recommends it for the vehicle's tire size combination and road conditions. Follow that manufacturer's instructions. To avoid vehicle damage, drive slow and readjust or remove the traction device if it contacts the vehicle. Do not spin the wheels. If traction devices are used, install them on the front tires.

### If a Tire Goes Flat

It is unusual for a tire to blow out, especially if the tires are maintained properly. See *Tires* on page 10-44. If air goes out of a tire, it is much more likely to leak out slowly.

But if there is ever a blowout, here are a few tips about what to expect and what to do:

If a front tire fails, the flat tire creates a drag that pulls the vehicle toward that side. Take your foot off the accelerator pedal and grip the steering wheel firmly. Steer to maintain lane position, and then gently brake to a stop, well off the road, if possible.

A rear blowout, particularly on a curve, acts much like a skid and may require the same correction as used in a skid. Stop pressing the accelerator pedal and steer to straighten the vehicle. It may be very bumpy and noisy. Gently brake to a stop, well off the road, if possible.

 **WARNING**

Driving on a flat tire will cause permanent damage to the tire. Re-inflating a tire after it has been driven on while severely underinflated or flat may cause a blowout and a serious crash. Never attempt to re-inflate a tire that has been driven on while severely underinflated or flat. Have your dealer or an authorized tire service center repair or replace the flat tire as soon as possible.

 **WARNING**

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place, well off the road, if possible. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

**⚠ WARNING**

Changing a tire can be dangerous. The vehicle can slip off the jack and roll over or fall causing injury or death. Find a level place to change the tire. To help prevent the vehicle from moving:

1. Set the parking brake firmly.
2. Put an automatic transmission in P (Park) or a manual transmission in 1 (First) or R (Reverse).
3. Turn off the engine and do not restart while the vehicle is raised.

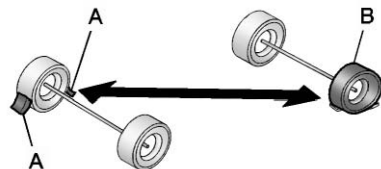
(Continued)

**WARNING (Continued)**

4. Do not allow passengers to remain in the vehicle.
5. Place wheel blocks on both sides of the tire at the opposite corner of the tire being changed.

This vehicle may come with a jack and spare tire or a tire sealant and compressor kit. To use the jacking equipment to change a spare tire safely, follow the instructions below. Then see *Tire Changing on page 10-83*. To use the tire sealant and compressor kit, see *Tire Sealant and Compressor Kit (With Pressure Relief Button) on page 10-67* or *Tire Sealant and Compressor Kit (With Pressure Deflation Button) on page 10-74*.

When the vehicle has a flat tire (B), use the following example as a guide to assist you in the placement of wheel blocks (A).



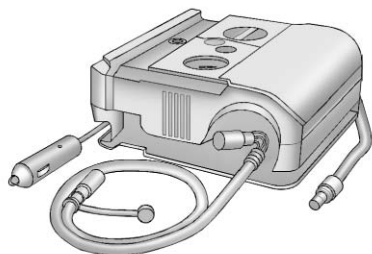
A. Wheel Block

B. Flat Tire

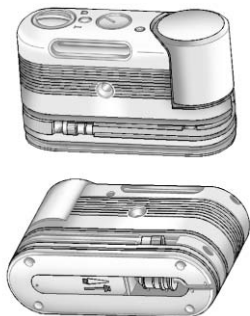
The following information explains how to repair or change a tire.

## Tire Sealant and Compressor Kit (With Pressure Relief Button)

### System Identification



If the vehicle has the tire sealant and compressor kit shown above, see the operating instructions that follow.



If the vehicle has the tire sealant and compressor kit shown above, follow the operating instructions under "Tire Sealant and Compressor Kit (With Pressure Deflation Button)."

#### **WARNING**

Idling a vehicle in an enclosed area with poor ventilation is dangerous. Engine exhaust may enter the vehicle.

(Continued)

#### **WARNING (Continued)**

Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. It can cause unconsciousness and even death. Never run the engine in an enclosed area that has no fresh air ventilation. For more information, see *Engine Exhaust* on page 9-28.

#### **WARNING**

Overinflating a tire could cause the tire to rupture and you or others could be injured. Be sure to read and follow the tire sealant and compressor kit instructions and inflate the tire to its recommended pressure. Do not exceed the recommended pressure.

**⚠ WARNING**

Storing the tire sealant and compressor kit or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store the tire sealant and compressor kit in its original location.

If this vehicle has a tire sealant and compressor kit, there may not be a spare tire and tire changing equipment, and on some vehicles there may not be a place to store a tire.

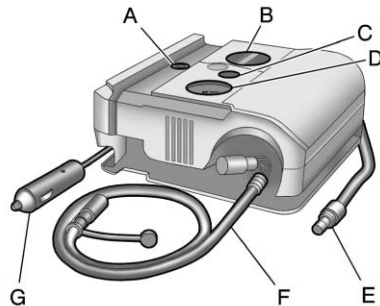
The tire sealant and compressor can be used to temporarily seal punctures up to 6 mm (¼ in) in the tread area of the tire. It can also be used to inflate an underinflated tire.

If the tire has been separated from the wheel, has damaged sidewalls, or has a large puncture, the tire is

too severely damaged for the tire sealant and compressor kit to be effective. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.

Read and follow all of the tire sealant and compressor kit instructions.

The kit includes:



- A. On/Off Button
- B. Selector Switch (Sealant/Air or Air Only)
- C. Pressure Relief Button

- D. Pressure Gauge
- E. Air Only Hose (Black)
- F. Sealant/Air Hose (Clear)
- G. Power Plug

**Tire Sealant**

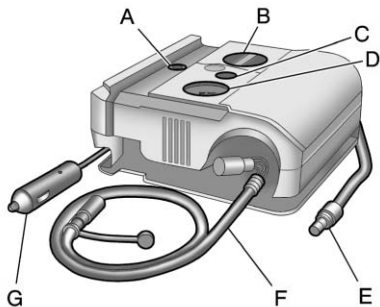
Read and follow the safe handling instructions on the label adhered to the compressor.

Check the tire sealant expiration date on the sealant canister. The sealant canister should be replaced before its expiration date. Replacement sealant canisters are available at your local dealer. See “Removal and Installation of the Sealant Canister” following.

There is only enough sealant to seal one tire. After usage, the sealant canister and sealant/air hose assembly must be replaced. See “Removal and Installation of the Sealant Canister” following.

## Using the Tire Sealant and Compressor Kit to Temporarily Seal and Inflate a Punctured Tire

Follow the directions closely for correct sealant usage.



When using the tire sealant and compressor kit during cold temperatures, warm the kit in a heated environment for five minutes. This will help to inflate the tire faster.

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

See *If a Tire Goes Flat* on page 10-64 for other important safety warnings.

Do not remove any objects that have penetrated the tire.

1. Remove the tire sealant and compressor kit from its storage location. See *Storing the Tire Sealant and Compressor Kit* on page 10-82.
2. Unwrap the sealant/air hose (F) and the power plug (G).
3. Place the kit on the ground.

Make sure the tire valve stem is positioned close to the ground so the hose will reach it.

4. Remove the valve stem cap from the flat tire by turning it counterclockwise.
5. Attach the sealant/air hose (F) onto the tire valve stem. Turn it clockwise until it is tight.
6. Plug the power plug (G) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets* on page 5-6.  
  
If the vehicle has an accessory power outlet, do not use the cigarette lighter.  
  
If the vehicle only has a cigarette lighter, use the cigarette lighter.  
  
Do not pinch the power plug cord in the door or window.
7. Start the vehicle. The vehicle must be running while using the air compressor.

## 10-70 Vehicle Care

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8. Turn the selector switch (B) clockwise to the Sealant + Air position.

9. Press the on/off button (A) to turn the tire sealant and compressor kit on.

The compressor will inject sealant and air into the tire.

The pressure gauge (D) will initially show a high pressure while the compressor pushes the sealant into the tire. Once the sealant is completely dispersed into the tire, the pressure will quickly drop and start to rise again as the tire inflates with air only.

10. Inflate the tire to the recommended inflation pressure using the pressure gauge (D). The recommended inflation pressure can be found on the Tire and Loading Information label. See *Tire Pressure* on page 10-51.

The pressure gauge (D) may read higher than the actual tire pressure while the compressor is on. Turn the compressor off to get an accurate pressure reading. The compressor may be turned on/off until the correct pressure is reached.

**Notice: If the recommended pressure cannot be reached after approximately 25 minutes, the vehicle should not be driven farther. The tire is too severely damaged and the tire sealant and compressor kit cannot inflate the tire. Remove the power plug from the accessory power outlet and unscrew the inflating hose from the tire valve. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.**

11. Press the on/off button (A) to turn the tire sealant and compressor kit off.

The tire is not sealed and will continue to leak air until the vehicle is driven and the sealant is distributed in the tire; therefore, Steps 12 through 18 must be done immediately after Step 11.

Be careful while handling the tire sealant and compressor kit as it could be warm after usage.

12. Unplug the power plug (G) from the accessory power outlet in the vehicle.
13. Turn the sealant/air hose (F) counterclockwise to remove it from the tire valve stem.
14. Replace the tire valve stem cap.
15. Return the sealant/air hose (F) and the power plug (G) back in their original locations.

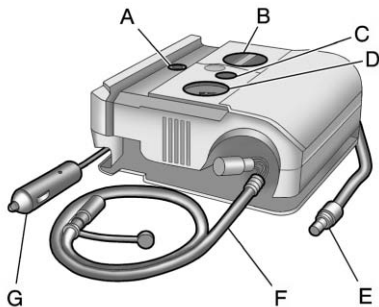




16. If the flat tire was able to inflate to the recommended inflation pressure, remove the maximum speed label from the sealant canister and place it in a highly visible location. Do not exceed the speed on this label until the damaged tire is repaired or replaced.
  17. Return the equipment to its original storage location in the vehicle.
  18. Immediately drive the vehicle 8 km (5 mi) to distribute the sealant in the tire.
19. Stop at a safe location and check the tire pressure. Refer to Steps 1 through 11 under "Using the Tire Sealant and Compressor Kit without Sealant to Inflate a Tire (Not Punctured)."  
  
If the tire pressure has fallen more than 68 kPa (10 psi) below the recommended inflation pressure, stop driving the vehicle. The tire is too severely damaged and the tire sealant cannot seal the tire. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.  
  
If the tire pressure has not dropped more than 68 kPa (10 psi) from the recommended inflation pressure, use the compressor kit to inflate the tire to the recommended inflation pressure.
  20. Wipe off any sealant from the wheel, tire, and vehicle.
  21. Dispose of the used sealant canister and sealant/air hose (F) assembly at a local dealer or in accordance with local state codes and practices.
  22. Replace it with a new canister available from your dealer.
  23. After temporarily sealing a tire using the tire sealant and compressor kit, take the vehicle to an authorized dealer within 161 km (100 mi) of driving to have the tire repaired or replaced.

### Using the Tire Sealant and Compressor Kit without Sealant to Inflate a Tire (Not Punctured)

To use the air compressor to inflate a tire with air only and not sealant:



If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

See *If a Tire Goes Flat* on page 10-64 for other important safety warnings.

1. Remove the tire sealant and compressor kit from its storage location. See *Storing the Tire Sealant and Compressor Kit* on page 10-82.
2. Unwrap the air only hose (E) and the power plug (G).
3. Place the kit on the ground.

Make sure the tire valve stem is positioned close to the ground so the hose will reach it.

4. Remove the tire valve stem cap from the flat tire by turning it counterclockwise.
5. Attach the air only hose (E) to the tire valve stem by turning it clockwise until it is tight.
6. Plug the power plug (G) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets* on page 5-6.

If the vehicle has an accessory power outlet, do not use the cigarette lighter.

If the vehicle only has a cigarette lighter, use the cigarette lighter.

Do not pinch the power plug cord in the door or window.

7. Start the vehicle. The vehicle must be running while using the air compressor.
8. Turn the selector switch (B) counterclockwise to the Air Only position.
9. Press the on/off button (A) to turn the compressor on.

The compressor will inflate the tire with air only.

10. Inflate the tire to the recommended inflation pressure using the pressure gauge (D). The recommended inflation pressure can be found on the Tire and Loading Information label. See *Tire Pressure on page 10-51*.

The pressure gauge (D) may read higher than the actual tire pressure while the compressor is on. Turn the compressor off to get an accurate reading.

The compressor may be turned on/off until the correct pressure is reached. If the tire is inflated higher than the recommended pressure, press the pressure relief button (C), if equipped, until the proper pressure reading is reached. This option is only functional when using the air only hose (E).

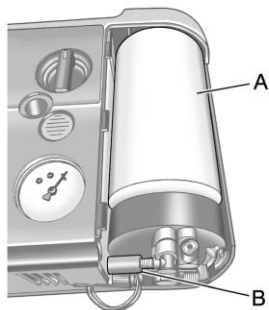
11. Press the on/off button (A) to turn the tire sealant and compressor kit off.  

Be careful while handling the tire sealant and compressor kit as it could be warm after usage.
12. Unplug the power plug (G) from the accessory power outlet in the vehicle.

13. Disconnect the air only hose (E) from the tire valve stem, by turning it counterclockwise, and replace the tire valve stem cap.
14. Return the air only hose (E) and the power plug (G) back to their original locations.
15. Return the equipment to its original storage location in the vehicle.

### Removal and Installation of the Sealant Canister

To remove the sealant canister:

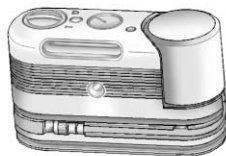


1. Remove the plastic cover.
2. Unscrew the connector (B) from the canister (A).
3. Pull up on the canister (A) to remove it.
4. Replace with a new canister which is available from your dealer.
5. Push the new canister into place.

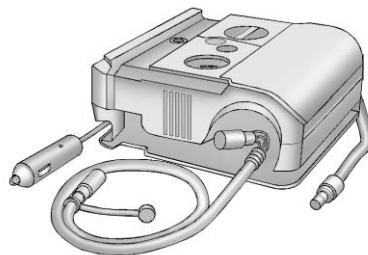
6. Screw the connector (B) to the canister (A).
7. Slide the plastic cover back on.

### Tire Sealant and Compressor Kit (With Pressure Deflation Button)

#### System Identification



If the vehicle has the tire sealant and compressor kit shown above, see the operating instructions that follow.



If the vehicle has the tire sealant and compressor kit shown above, follow the operating instructions under "Tire Sealant and Compressor Kit (With Pressure Relief Button)".

 **WARNING**

Idling a vehicle in an enclosed area with poor ventilation is dangerous. Engine exhaust may enter the vehicle. Engine exhaust contains carbon monoxide (CO) which cannot be seen or smelled. It can cause unconsciousness and even death. Never run the engine in an enclosed area that has no fresh air ventilation. For more information, see *Engine Exhaust* on page 9-28.

 **WARNING**

Overinflating a tire could cause the tire to rupture and you or others could be injured. Be sure to read and follow the tire sealant and compressor kit instructions and inflate the tire to its

(Continued)

**WARNING (Continued)**

recommended pressure. Do not exceed the recommended pressure.

 **WARNING**

Storing the tire sealant and compressor kit or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store the tire sealant and compressor kit in its original location.

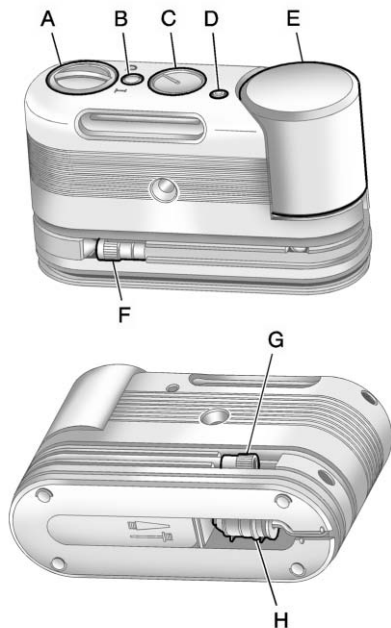
If this vehicle has a tire sealant and compressor kit, there may not be a spare tire and tire changing equipment, and on some vehicles there may not be a place to store a tire.

The tire sealant and compressor can be used to temporarily seal punctures up to 6 mm ( $\frac{1}{4}$  in) in the tread area of the tire. It can also be used to inflate an underinflated tire.

If the tire has been separated from the wheel, has damaged sidewalls, or has a large puncture, the tire is too severely damaged for the tire sealant and compressor kit to be effective. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.

Read and follow all of the tire sealant and compressor kit instructions.

The kit includes:



- A. Selector Switch (Sealant/Air or Air Only)
- B. On/Off Button
- C. Pressure Gauge
- D. Pressure Deflation Button (If equipped)
- E. Tire Sealant Canister
- F. Sealant/Air Hose (Clear)
- G. Air Only Hose (Black)
- H. Power Plug

### Tire Sealant

Read and follow the safe handling instructions on the label adhered to the sealant canister.

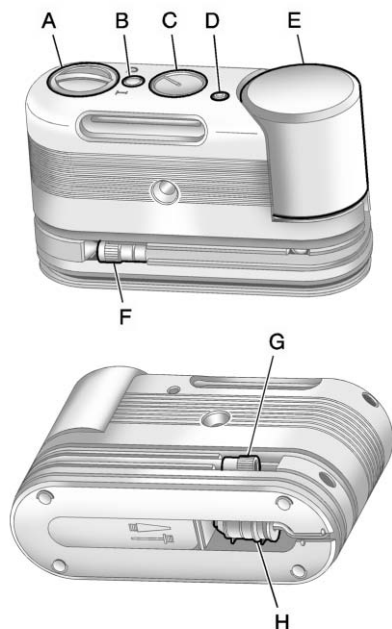
Check the tire sealant expiration date on the sealant canister. The sealant canister should be replaced before its expiration date.

Replacement sealant canisters are available at your local dealer. See "Removal and Installation of the Sealant Canister" following.

There is only enough sealant to seal one tire. After usage, the sealant canister and sealant/air hose assembly must be replaced. See "Removal and Installation of the Sealant Canister" following.

### Using the Tire Sealant and Compressor Kit to Temporarily Seal and Inflate a Punctured Tire

Follow the directions closely for correct sealant usage.



When using the tire sealant and compressor kit during cold temperatures, warm the kit in a

heated environment for five minutes. This will help to inflate the tire faster.

If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

See *If a Tire Goes Flat* on page 10-64 for other important safety warnings.

Do not remove any objects that have penetrated the tire.

1. Remove the tire sealant and compressor kit from its storage location. See *Storing the Tire Sealant and Compressor Kit* on page 10-82.
2. Unwrap the sealant/air hose (F) and the power plug (H).
3. Place the kit on the ground.

Make sure the tire valve stem is positioned close to the ground so the hose will reach it.

4. Remove the valve stem cap from the flat tire by turning it counterclockwise.
  5. Attach the sealant/air hose (F) onto the tire valve stem. Turn it clockwise until it is tight.
  6. Plug the power plug (H) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets* on page 5-6.
- If the vehicle has an accessory power outlet, do not use the cigarette lighter.
- If the vehicle only has a cigarette lighter, use the cigarette lighter.
- Do not pinch the power plug cord in the door or window.
7. Start the vehicle. The vehicle must be running while using the air compressor.
  8. Turn the selector switch (A) counterclockwise to the Sealant + Air position.

## 10-78 Vehicle Care

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9. Press the on/off button (B) to turn the tire sealant and compressor kit on.

The compressor will inject sealant and air into the tire.

The pressure gauge (C) will initially show a high pressure while the compressor pushes the sealant into the tire. Once the sealant is completely dispersed into the tire, the pressure will quickly drop and start to rise again as the tire inflates with air only.

10. Inflate the tire to the recommended inflation pressure using the pressure gauge (C). The recommended inflation pressure can be found on the Tire and Loading Information label. See *Tire Pressure* on page 10-51.

The pressure gauge (C) may read higher than the actual tire pressure while the compressor is on.

Turn the compressor off to get an accurate pressure reading. The compressor may be turned on/off until the correct pressure is reached.

**Notice:** If the recommended pressure cannot be reached after approximately 25 minutes, the vehicle should not be driven farther. The tire is too severely damaged and the tire sealant and compressor kit cannot inflate the tire. Remove the power plug from the accessory power outlet and unscrew the inflating hose from the tire valve. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.

11. Press the on/off button (B) to turn the tire sealant and compressor kit off.

The tire is not sealed and will continue to leak air until the vehicle is driven and the sealant is distributed in the tire;

therefore, Steps 12 through 18 must be done immediately after Step 11.

Be careful while handling the tire sealant and compressor kit as it could be warm after usage.

12. Unplug the power plug (H) from the accessory power outlet in the vehicle.
13. Turn the sealant/air hose (F) counterclockwise to remove it from the tire valve stem.
14. Replace the tire valve stem cap.
15. Replace the sealant/air hose (F), and the power plug (H) back in their original location.

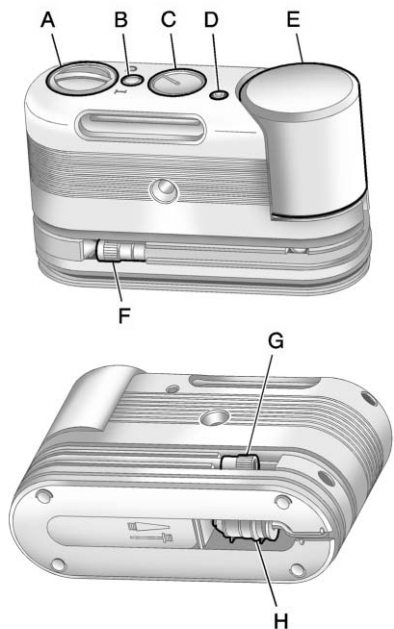




16. If the flat tire was able to inflate to the recommended inflation pressure, remove the maximum speed label from the sealant canister (E) and place it in a highly visible location. Do not exceed the speed on this label until the damaged tire is repaired or replaced.
  17. Return the equipment to its original storage location in the vehicle.
  18. Immediately drive the vehicle 8 km (5 mi) to distribute the sealant in the tire.
19. Stop at a safe location and check the tire pressure. Refer to Steps 1 through 11 under "Using the Tire Sealant and Compressor Kit without Sealant to Inflate a Tire (Not Punctured)."  
  
If the tire pressure has fallen more than 68 kPa (10 psi) below the recommended inflation pressure, stop driving the vehicle. The tire is too severely damaged and the tire sealant cannot seal the tire. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.  
  
If the tire pressure has not dropped more than 68 kPa (10 psi) from the recommended inflation pressure, inflate the tire to the recommended inflation pressure.
  20. Wipe off any sealant from the wheel, tire, and vehicle.
  21. Dispose of the used sealant canister (E) and sealant/air hose (F) assembly at a local dealer or in accordance with local state codes and practices.
  22. Replace it with a new canister available from your dealer.
  23. After temporarily sealing a tire using the tire sealant and compressor kit, take the vehicle to an authorized dealer within a 161 km (100 mi) of driving to have the tire repaired or replaced.

### Using the Tire Sealant and Compressor Kit without Sealant to Inflate a Tire (Not Punctured)

To use the air compressor to inflate a tire with air only and not sealant:



If a tire goes flat, avoid further tire and wheel damage by driving slowly to a level place. Turn on the hazard warning flashers. See *Hazard Warning Flashers* on page 6-4.

See *If a Tire Goes Flat* on page 10-64 for other important safety warnings.

1. Remove the tire sealant and compressor kit from its storage location. See *Storing the Tire Sealant and Compressor Kit* on page 10-82.
2. Unwrap the air only hose (G) and the power plug (H).
3. Place the kit on the ground.  
Make sure the tire valve stem is positioned close to the ground so the hose will reach it.
4. Remove the tire valve stem cap from the flat tire by turning it counterclockwise.
5. Attach the air only hose (G) onto the tire valve stem by turning it clockwise until it is tight.

6. Plug the power plug (H) into the accessory power outlet in the vehicle. Unplug all items from other accessory power outlets. See *Power Outlets on page 5-6*.

If the vehicle has an accessory power outlet, do not use the cigarette lighter.

If the vehicle only has a cigarette lighter, use the cigarette lighter.

Do not pinch the power plug cord in the door or window.

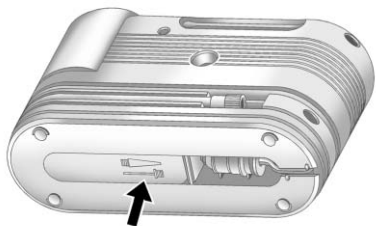
7. Start the vehicle. The vehicle must be running while using the air compressor.
8. Turn the selector switch (A) clockwise to the Air Only position.
9. Press the on/off button (B) to turn the compressor on.  
The compressor will inflate the tire with air only.

10. Inflate the tire to the recommended inflation pressure using the pressure gauge (C). The recommended inflation pressure can be found on the Tire and Loading Information label. See *Tire Pressure on page 10-51*.

The pressure gauge (C) may read higher than the actual tire pressure while the compressor is on. Turn the compressor off to get an accurate reading. The compressor may be turned on/off until the correct pressure is reached.

If you inflate the tire higher than the recommended pressure you can adjust the excess pressure by pressing the pressure deflation button (D), if equipped, until the proper pressure reading is reached. This option is only functional when using the air only hose (G).

11. Press the on/off button (B) to turn the tire sealant and compressor kit off.  
Be careful while handling the tire sealant and compressor kit as it could be warm after usage.
12. Unplug the power plug (H) from the accessory power outlet in the vehicle.
13. Disconnect the air only hose (G) from the tire valve stem by turning it counterclockwise, and replace the tire valve stem cap.
14. Replace the air only hose (G) and the power plug (H) and cord back in their original locations.
15. Place the equipment in the original storage location in the vehicle.



The tire sealant and compressor kit has an accessory adapter located in a compartment on the bottom of its housing that may be used to inflate air mattresses, balls, etc.

### Removal and Installation of the Sealant Canister

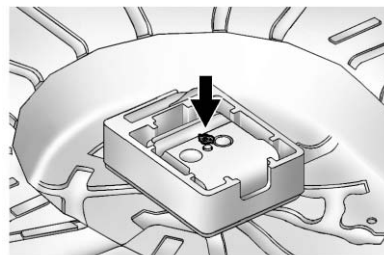
To remove the sealant canister:

1. Unwrap the sealant hose.
2. Press the canister release button.
3. Pull up and remove the canister.
4. Replace with a new canister which is available from your dealer.
5. Push the new canister into place.

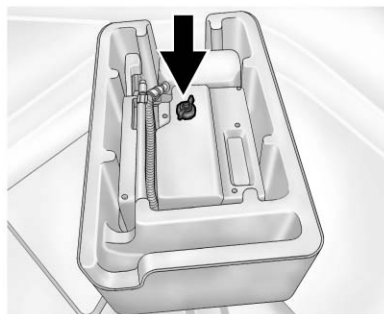
### Storing the Tire Sealant and Compressor Kit

To access the tire sealant and compressor kit:

1. Open the trunk. See *Trunk* on page 2-12.
2. Lift the cover.



**With Pressure Relief Button**



**With Pressure Deflation Button**

- 3. Turn the wing nut counterclockwise to remove it.
- 4. Remove the tire sealant and compressor kit.

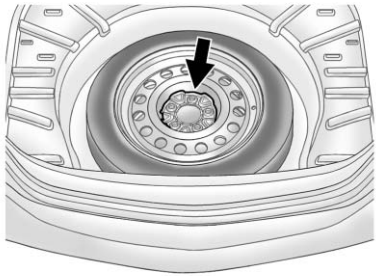
To store the tire sealant and compressor kit, reverse the steps.

### Tire Changing

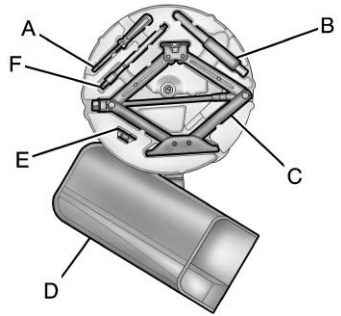
#### Removing the Spare Tire and Tools

The equipment you need is located in the trunk.

- 1. Open the trunk.
- 2. Remove the spare tire cover.



- 3. Turn the retainer nut counterclockwise and remove the spare tire.
- 4. Place the spare tire next to the tire being changed.



- A. Screwdriver
- B. Tow Hook (If Equipped)
- C. Jack
- D. Wrench (In Bag)
- E. Trim Removal (If Equipped)
- F. Fastener (If Equipped)

The jack and tools are stored below the spare tire.

Place the tools next to the tire being changed.

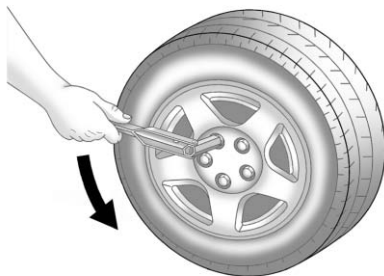
### Removing the Flat Tire and Installing the Spare Tire

1. Do a safety check before proceeding. See *If a Tire Goes Flat on page 10-64* for more information.
2. Turn the wheel wrench counterclockwise to loosen the wheel nut caps.

If needed, finish loosening them by hand. The nut caps will not come off of the wheel cover.

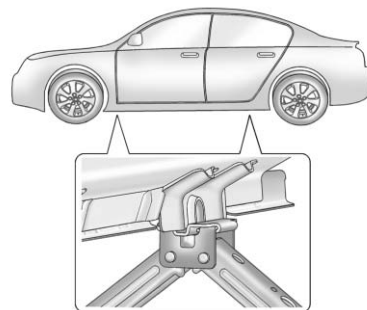
The edge of the wheel cover could be sharp, so do not try to remove the cover with your bare hands. Do not drop the cap or lay it face down, as it could become scratched or damaged.

Store the wheel cover in the trunk until you have the flat tire repaired or replaced.



3. Turn the wheel wrench counterclockwise to loosen all of the wheel nuts, but do not remove them yet.

**Notice:** Make sure that the jack lift head is in the correct position or you may damage your vehicle. The repairs would not be covered by your warranty.



4. Position the jack head, as shown.  
Set the jack to the necessary height before positioning it below the jacking point.
5. Attach the jack lift assist tool to the jack by fitting both ends of the jack and tool over one another.

**⚠ WARNING**

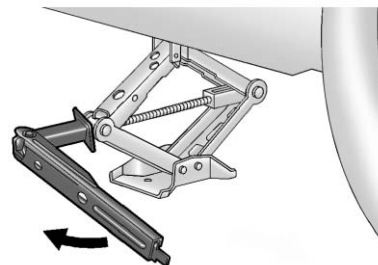
Getting under a vehicle when it is jacked up is dangerous. If the vehicle slips off the jack, you could be badly injured or killed. Never get under a vehicle when it is supported only by a jack.

**⚠ WARNING**

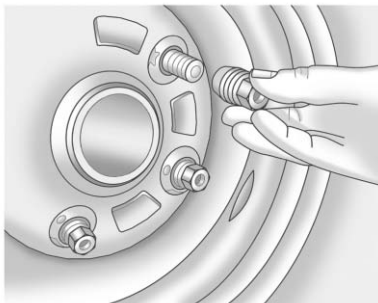
Raising the vehicle with the jack improperly positioned can damage the vehicle and even make the vehicle fall. To help avoid personal injury and vehicle damage, be sure to fit the jack lift head into the proper location before raising the vehicle.

**⚠ WARNING**

Lifting a vehicle and getting under it to do maintenance or repairs is dangerous without the appropriate safety equipment and training. If a jack is provided with the vehicle, it is designed only for changing a flat tire. If it is used for anything else, you or others could be badly injured or killed if the vehicle slips off the jack. If a jack is provided with the vehicle, only use it for changing a flat tire.



6. Turn the jack handle clockwise to raise the vehicle far enough off the ground for the compact spare to fit under the vehicle.



7. Remove all of the wheel nuts.
8. Remove the flat tire.

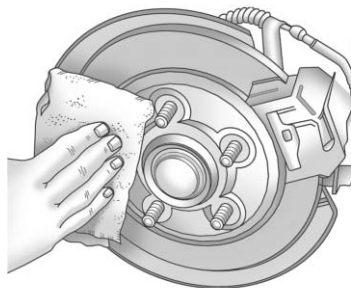
**⚠ WARNING**

Rust or dirt on a wheel, or on the parts to which it is fastened, can make wheel nuts become loose after time. The wheel could come off and cause an accident. When changing a wheel, remove any rust or dirt from places where the wheel attaches to the vehicle.

(Continued)

**WARNING (Continued)**

In an emergency, a cloth or a paper towel can be used; however, use a scraper or wire brush later to remove all rust or dirt.



9. Remove any rust or dirt from the wheel bolts, mounting surfaces, and spare wheel.
10. Install the compact spare tire.

**⚠ WARNING**

Never use oil or grease on bolts or nuts because the nuts might come loose. The vehicle's wheel could fall off, causing a crash.

11. Put the wheel nuts back on with the rounded end of the nuts toward the wheel. Turn each nut clockwise by hand until the wheel is held against the hub.
12. Lower the vehicle by turning the jack handle counterclockwise. Lower the jack completely.

**⚠ WARNING**

Wheel nuts that are improperly or incorrectly tightened can cause the wheels to become loose or come off. The wheel nuts should be tightened with a torque wrench

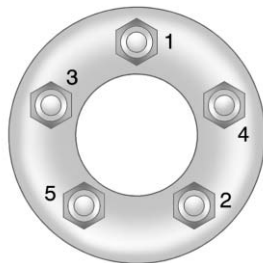
(Continued)



**WARNING (Continued)**

to the proper torque specification after replacing. Follow the torque specification supplied by the aftermarket manufacturer when using accessory locking wheel nuts. See *Capacities and Specifications* on page 12-2 for original equipment wheel nut torque specifications.

**Notice:** Improperly tightened wheel nuts can lead to brake pulsation and rotor damage. To avoid expensive brake repairs, evenly tighten the wheel nuts in the proper sequence and to the proper torque specification. See *Capacities and Specifications* on page 12-2 for the wheel nut torque specification.



13. Tighten the wheel nuts firmly in a crisscross sequence, as shown.
14. Lower the jack all the way and remove the jack from under the vehicle.
15. Tighten the wheel nuts firmly with the wheel wrench.

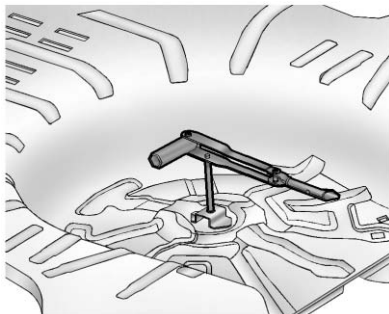
**Notice:** Wheel covers will not fit on the vehicle's compact spare. If you try to put a wheel cover on the compact spare, the cover or the spare could be damaged.

**Storing a Flat or Spare Tire and Tools****⚠ WARNING**

Storing a jack, a tire, or other equipment in the passenger compartment of the vehicle could cause injury. In a sudden stop or collision, loose equipment could strike someone. Store all these in the proper place.

Store the spare or flat tire in one of the ways shown below. Storage instructions will vary depending on the bolt that came with the vehicle and how it attaches to the vehicle. This vehicle will have a slide in fastener or a screw in fastener.

### Storing a Flat or Spare Tire and Tools With a Screw In Fastener

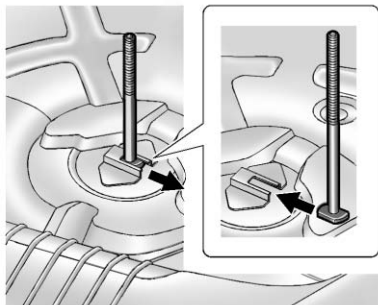


1. Turn the wrench counterclockwise to remove the fastener.
2. Replace the fastener with the one provided in the foam.
3. Turn the wrench clockwise to tighten the fastener.
4. Replace the foam, jack and tools, and the tire.

5. Turn the retainer nut clockwise to secure the tire.
6. Place the floor cover on the wheel.

### Storing a Flat or Spare Tire and Tools With a Slide In Fastener

1. If the flat tire is larger than the spare tire, use the longer mounting bolt.



2. Slide the shorter bolt to remove it from the floor and insert the longer one.

3. Replace the jack and tools in their original storage location.
4. Place the tire, lying flat, facing up in the spare tire well.
5. Turn the retainer nut clockwise to secure the tire.
6. Place the floor cover on the wheel.

The compact spare is for temporary use only. Replace the compact spare tire with a full-size tire as soon as you can.

## Compact Spare Tire

 **WARNING**

Driving with more than one compact spare tire at a time could result in loss of braking and handling. This could lead to a crash and you or others could be injured. Use only one compact spare tire at a time.

If this vehicle has a compact spare tire, it was fully inflated when the vehicle was new; however, it can lose air after a time. Check the inflation pressure regularly. It should be 420 kPa (60 psi).

After installing the compact spare on the vehicle, stop as soon as possible and make sure the spare tire is correctly inflated. The compact spare is made to perform well at speeds up to 105 km/h (65 mph) for distances up to 5 000 km (3,000 mi), so you can finish your trip and have the full-size tire repaired or replaced at your convenience. Of course, it is best to replace the spare with a full-size tire as soon as possible. The spare tire will last longer and be in good shape in case it is needed again.

**Notice:** When the compact spare is installed, do not take the vehicle through an automatic car wash with guide rails. The compact spare can get caught on the rails which can damage the tire, wheel, and other parts of the vehicle.

Do not use the compact spare on other vehicles.

Do not mix the compact spare tire or wheel with other wheels or tires. They will not fit. Keep the spare tire and its wheel together.

**Notice:** Tire chains will not fit the compact spare. Using them can damage the vehicle and can damage the chains too. Do not use tire chains on the compact spare.

## Jump Starting

### Jump Starting (with or without eAssist)

For more information about the vehicle battery, see *Battery* on page 10-25.

If the battery has run down, try to use another vehicle and some jumper cables to start your vehicle. Be sure to use the following steps to do it safely.

#### WARNING

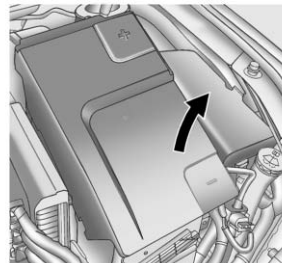
Batteries can hurt you. They can be dangerous because:

- They contain acid that can burn you.
- They contain gas that can explode or ignite.
- They contain enough electricity to burn you.

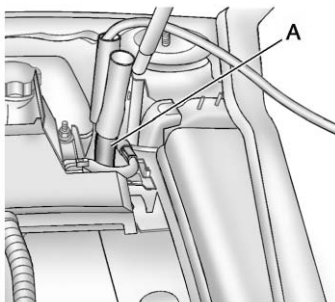
If you do not follow these steps exactly, some or all of these things can hurt you.

**Notice:** Ignoring these steps could result in costly damage to the vehicle that would not be covered by the warranty.

Trying to start the vehicle by pushing or pulling it will not work, and it could damage the vehicle.



The jump start positive is located under a trim cover in the engine compartment on the driver side of the vehicle.



This post (A) is used instead of a direct connection to the battery.

1. Check the other vehicle. It must have a 12-volt battery with a negative ground system.

**Notice:** Only use a vehicle that has a 12-volt system with a negative ground for jump starting. If the other vehicle does not have a 12-volt system with a negative ground, both vehicles can be damaged.

2. Position the two vehicles so that they are not touching.

3. Set the parking brake firmly and put the shift lever in P (Park). See *Shifting Into Park* on page 9-25.

**Notice:** 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 the vehicle.

4. Turn the ignition to LOCK/OFF and switch off all lights and accessories in both vehicles, except the hazard warning flashers if needed.

**⚠ WARNING**

An electric fan can start up even when the engine is not running and can injure you. Keep hands, clothing and tools away from any underhood electric fan.

**⚠ WARNING**

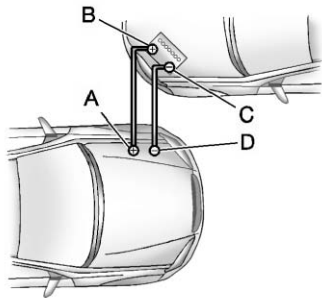
Using a match near a battery can cause battery gas to explode. People have been hurt doing this, and some have been blinded. Use a flashlight if you need more light.

Be sure the battery has enough water. You do not need to add water to the battery installed in your new vehicle. But if a battery has filler caps, be sure the right amount of fluid is there. If it is low, add water to take care of that first. If you don't, explosive gas could be present.

Battery fluid contains acid that can burn you. Do not get it on you. If you accidentally get it in your eyes or on your skin, flush the place with water and get medical help immediately.

### WARNING

Fans or other moving engine parts can injure you badly. Keep your hands away from moving parts once the engine is running.



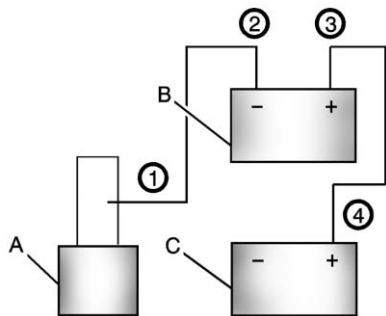
5. Connect one end of the red positive (+) cable to the jump start positive (+) post (A). Use a remote positive (+) terminal if the vehicle has one.

6. Do not let the other end of the red positive (+) cable touch metal. Connect it to the positive (+) terminal of the good battery (B). Use a remote positive (+) terminal if the vehicle has one.
7. Connect one end of the black negative (-) cable to the negative (-) terminal of the good battery (C). Use a remote negative (-) terminal if the vehicle has one.

Do not let the other end touch anything until the next step. The other end of the negative (-) cable does not go to the dead battery. It goes to a heavy, unpainted metal engine part or to a remote negative (-) terminal on the vehicle with the dead battery.

8. Connect the other end of the black negative (-) cable to an unpainted heavy metal engine part (D) away from the dead battery, but not near engine parts that move.
9. Start the engine in the vehicle with the good battery and run the engine at idle speed for at least four minutes.
10. Try to start the vehicle that had the dead battery. If it will not start after a few tries, it probably needs service.

**Notice:** 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**

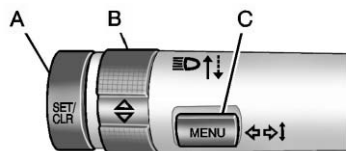
- A. Heavy, Unpainted Metal Engine Part or Remote Negative (-) Terminal
- B. Good Battery or Remote Positive (+) and Remote Negative (-) Terminals
- C. Dead Battery or Remote Positive (+) Terminal

To disconnect the jumper cables from both vehicles:

1. Disconnect the black negative (-) cable from the vehicle that had the dead battery.
2. Disconnect the black negative (-) cable from the vehicle with the good battery.
3. Disconnect the red positive (+) cable from the vehicle with the good battery.
4. Disconnect the red positive (+) cable from the other vehicle.
5. Return the caps over the positive (+) and negative (-) terminals to their original positions.

**Jump Starting (On-board with eAssist Only)**

If the vehicle fails to crank and there is no other vehicle available for a jump start, it may also be jump started by using the eAssist battery to charge the 12-volt battery. Use the following procedure to activate the on-board jump start using the DIC controls.



DIC Buttons

- A. SET/CLR
- B.  $\triangle \nabla$  (Thumbwheel)
- C. MENU

With the ignition key in the run position, proceed as follows:

1. Press MENU (C) on the turn signal lever until Vehicle Information Menu is displayed. Use  $\triangle \nabla$  (Thumbwheel) (B) to scroll through the menu items until Jump Start is displayed.
2. Press SET/CLR (A) to activate the jump start.
3. The system will then ask for confirmation. If yes is selected, the jump start will begin and the display will show JUMP START ACTIVE, WAIT TO START.

4. When the jump start is complete, the display will show JUMP START COMPLETE. ATTEMPT START.

If the vehicle is started, the on-board jump start function will be automatically disabled. If the vehicle cranks but does not start, the procedure may be repeated again. If the vehicle start is still unsuccessful, the jump start can be attempted using the previous jump starting procedure under “Jump Starting (with or without eAssist).” On-board jump starting may be unavailable due to the 12-volt battery charge level, the eAssist battery charge level, power capability, or an issue with the eAssist system. In these cases, the display will not be available because of the power issue, or the DIC will display JUMP START DISABLED. SEE OWNERS MANUAL.

## Towing

### Towing the Vehicle

**Notice:** To avoid damage, the disabled vehicle should be towed with all four wheels off the ground. Care must be taken with vehicles that have low ground clearance and/or special equipment. Always flatbed on a car carrier.

Consult your dealer or a professional towing service if the disabled vehicle must be towed. See *Roadside Assistance Program (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.

To tow the vehicle behind another vehicle for recreational purposes, such as behind a motor home, see “Recreational Vehicle Towing” in this section.



## Recreational Vehicle Towing

Recreational vehicle towing means towing the vehicle behind another vehicle such as a motor home. The two most common types of recreational vehicle towing are known as dinghy towing and dolly towing. Dinghy towing is towing the vehicle with all four wheels on the ground. Dolly towing is towing the vehicle with two wheels on the ground and two wheels up on a device known as a dolly.

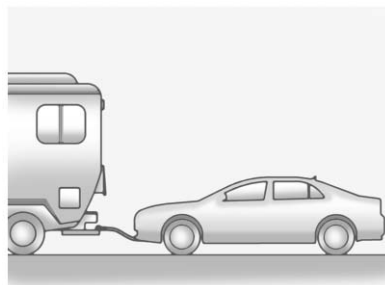
Here are some important things to consider before recreational vehicle towing:

- What is the towing capacity of the towing vehicle? Be sure to read the tow vehicle manufacturer's recommendations.

- What is the distance that will be traveled? Some vehicles have restrictions on how far and how long they can tow.
- Is the proper towing equipment going to be used? See your dealer or trailering professional for additional advice and equipment recommendations.
- Is the vehicle ready to be towed? Just as preparing the vehicle for a long trip, make sure the vehicle is prepared to be towed.

### Dinghy Towing from the Front

When dinghy towing, the vehicle should be run at the beginning of each day and at each RV fuel stop for about five minutes. This will ensure proper lubrication of transmission components.



Use the following procedure to dinghy tow the vehicle from the front with all four wheels on the ground:

1. Position the vehicle being towed behind the tow vehicle and shift the transmission to P (Park).
2. Turn the engine off and firmly set the parking brake.
3. Following the manufacturer's instructions, securely attach the vehicle being towed to the tow vehicle.

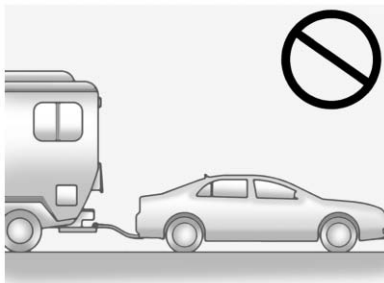
## 10-96 Vehicle Care

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- Turn the ignition to ACC/ ACCESSORY and shift the transmission to N (Neutral). See *Ignition Positions (Key Access)* on page 9-16 or *Ignition Positions (Keyless Access)* on page 9-18.
- Release the parking brake only after the vehicle being towed is firmly attached to the towing vehicle.

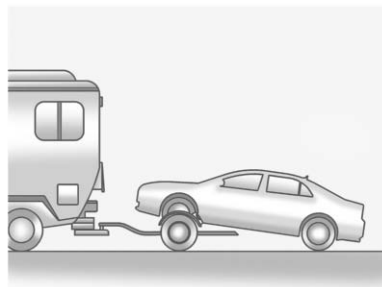
When towing the vehicle for extended periods of time, start the vehicle as often as possible to prevent battery drain. This should be done when the tow vehicle is parked.

### Dinghy Towing from the Rear



The vehicle was not designed to be towed from the rear with all four wheels on the ground.

### Dolly Towing from the Front (Front-Wheel Drive)



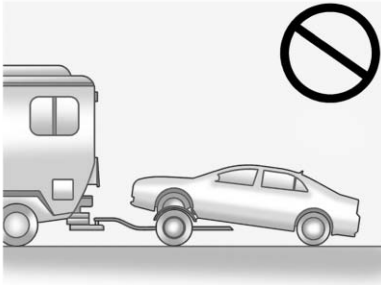
Vehicles with front-wheel drive can be dolly towed from the front.

Use the following procedure to dolly tow the vehicle from the front:

- Attach the dolly to the tow vehicle following the dolly manufacturer's instructions.
- Drive the front wheels onto the dolly.
- Shift the transmission to P (Park).

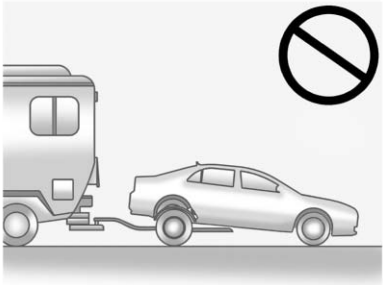
- 4. Firmly set the parking brake.
- 5. Use an adequate clamping device designed for towing to ensure that the front wheels are locked into the straight-ahead position.
- 6. Secure the vehicle to the dolly following the manufacturer's instructions.
- 7. Release the parking brake only after the vehicle being towed is firmly attached to the towing vehicle.
- 8. Turn the ignition to LOCK/OFF.

**Dolly Towing from the Front  
(All-Wheel Drive)**



Vehicles with all-wheel drive cannot be dolly towed.

**Dolly Towing from the Rear**



The vehicle cannot be dolly towed from the rear.

## Appearance Care

### Exterior Care

#### Washing the Vehicle

To preserve the vehicle's finish, wash it often and out of direct sunlight.

**Notice:** 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's warranty. Approved cleaning products can be obtained from your dealer. Follow all manufacturer directions regarding correct product usage, necessary safety precautions, and appropriate disposal of any vehicle care product.

**Notice:** 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.

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

Occasional hand waxing or mild polishing should be done to remove residue from the paint finish. See your dealer for approved cleaning products.

**Notice:** 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.

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.

To keep the paint finish looking new, keep the vehicle garaged or covered whenever possible.

#### Protecting Exterior Bright Metal Parts

Regularly clean bright metal parts with water or chrome polish on chrome or stainless steel trim, if necessary.

For aluminum, never use auto or chrome polish, steam, or caustic soap to clean. A coating of wax, rubbed to a high polish, is recommended for all bright metal parts.

### Cleaning Exterior Lamps/ Lenses and Emblems

Use only lukewarm or cold water, a soft cloth, and a car washing soap to clean exterior lamps and lenses. Follow instructions under "Washing the Vehicle" later in this section.

### 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 silicone grease on weatherstrips to make them last longer, seal better, and not stick or squeak. See *Recommended Fluids and Lubricants on page 11-14*

### Tires

Use a stiff brush with tire cleaner to clean the tires.

**Notice:** 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.

Keep the wheels clean using a soft, clean cloth with mild soap and water. Rinse with clean water. After rinsing thoroughly, dry with a soft, clean towel. A wax may then be applied.

**Notice:** 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.

**Notice:** 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 brushes. Damage could occur and the repairs would not be covered by the vehicle warranty.

### **Steering, Suspension, and Chassis Components**

Visually inspect front and rear suspension and steering system for damaged, loose, or missing parts or signs of wear. Inspect power steering lines and hoses for proper hook-up, binding, leaks, cracks, chafing, etc. Visually check constant velocity joints, rubber boots, and axle seals for leaks.

### **Body Component Lubrication**

Lubricate all key lock cylinders, hood hinges, liftgate hinges, and the steel fuel door hinge unless the components are plastic. Applying silicone grease on weatherstrips with a clean cloth will make them last longer, seal better, and not stick or squeak.

### **Underbody Maintenance**

Use plain water to flush dirt and debris from the vehicle's underbody. Your dealer or an underbody car washing system can do this. If not removed, rust and corrosion can develop.

### **Sheet Metal Damage**

If the vehicle is damaged and requires sheet metal repair or replacement, make sure the body repair shop applies anti-corrosion material to parts repaired or replaced to restore corrosion protection.

Original manufacturer replacement parts will provide the corrosion protection while maintaining the vehicle warranty.

### **Finish Damage**

Quickly repair minor chips and scratches with touch-up materials available from your dealer to avoid corrosion. Larger areas of finish damage can be corrected in your dealer's body and paint shop.

### **Chemical Paint Spotting**

Airborne pollutants can fall upon and attack painted vehicle surfaces causing blotchy, ring-shaped discolorations, and small, irregular dark spots etched into the paint surface.

## Interior Care

To prevent dirt particle abrasions, regularly clean the vehicle's interior. Immediately remove any soils. Note that newspapers or dark garments that can transfer color to home furnishings can also permanently transfer color to the vehicle's interior.

Use a soft bristle brush to remove dust from knobs and crevices on the instrument cluster. Using a mild soap solution, immediately remove hand lotions, sunscreen, and insect repellent from all interior surfaces or permanent damage may result.

Your dealer may have products for cleaning the interior. Use cleaners specifically designed for the surfaces being cleaned to prevent permanent damage. To prevent overspray, apply all cleaners directly to the cleaning cloth. Cleaners should be removed quickly. Never allow cleaners to remain on the surface being cleaned for extended periods of time.

Cleaners may contain solvents that can become concentrated in the interior. Before using cleaners, read and adhere to all safety instructions on the label. While cleaning the interior, maintain adequate ventilation by opening the doors and windows.

To prevent damage, do not clean the interior using the following cleaners or techniques:

- Never use a razor or any other sharp object to remove a soil from any interior surface.
- Never use a brush with stiff bristles.
- Never rub any surface aggressively or with excessive pressure.
- Do not use laundry detergents or dishwashing soaps with degreasers. For liquid cleaners, use approximately 20 drops per 3.78L (1 gal) of water. A concentrated soap solution will leave a residue that creates

streaks and attracts dirt. Do not use solutions that contain strong or caustic soap.

- Do not heavily saturate the upholstery when cleaning.
- Do not use solvents or cleaners containing solvents.

## Interior Glass

To clean, use a terry cloth fabric dampened with water. Wipe droplets left behind with a clean dry cloth. Commercial glass cleaners may be used, if necessary, after cleaning the interior glass with plain water.

**Notice:** To prevent scratching, never use abrasive cleaners on automotive glass. Abrasive cleaners or aggressive cleaning may damage the rear window defogger.

### Fabric/Carpet

Start by vacuuming the surface using a soft brush attachment. If a rotating brush attachment is being used during vacuuming, only use it on the floor carpet. Before cleaning, gently remove as much of the soil as possible using one of the following techniques:

- Gently blot liquids with a paper towel. Continue blotting until no more soil can be removed.
- For solid soils, remove as much as possible prior to vacuuming.

To clean:

1. Saturate a clean lint-free colorfast cloth with water or club soda. 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. Rotate 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 club soda or plain water.

If the soil is not completely removed, it may be necessary to use a commercial upholstery cleaner or spot lifter. Test a small hidden area for colorfastness before using a commercial upholstery cleaner or spot lifter. If ring formation occurs, clean the entire fabric or carpet.

Following the cleaning process, a paper towel can be used to blot excess moisture.



### Instrument Panel, Vinyl, and Other Plastic 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.

**Notice:** Soaking or saturating leather, especially perforated leather, as well as other interior surfaces, may cause permanent damage. Wipe excess moisture from these surfaces after cleaning and allow them to dry naturally. Never use heat, steam, spot lifters or spot removers. Do not use cleaners that contain silicone or wax-based products. Cleaners containing 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.

**Notice:** Use of air fresheners may cause permanent damage to plastics and painted surfaces. If an air freshener comes in contact with any plastic or painted surface in the vehicle, blot immediately and clean with a soft cloth dampened with a mild soap solution. Damage caused by air fresheners would not be covered by the vehicle warranty.

### Care of Safety Belts

Keep belts clean and dry.

#### WARNING

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

## Floor Mats

### WARNING

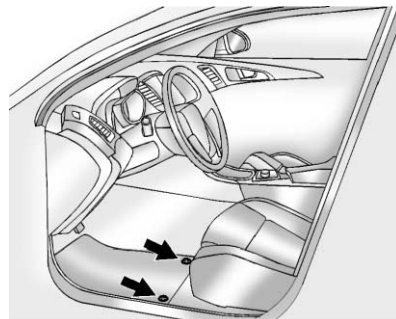
If a floor mat is the wrong size or is not properly installed, it can interfere with the accelerator pedal and/or brake pedal. Interference with the pedals can cause unintended acceleration and/or increased stopping distance which can cause a crash and injury. Make sure the floor mat does not interfere with the pedals.

Use the following guidelines for proper floor mat usage:

- The original equipment floor mats were designed for your vehicle. If the floor mats need replacing, it is recommended that GM certified floor mats be purchased. Non-GM floor mats may not fit properly and may interfere with the accelerator or brake pedal. Always check that the floor mats do not interfere with the pedals.
- 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 floor mat to unlock each retainer and remove.



Reinstall by lining up the floor mat retainer openings over the carpet retainers and snap 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

General Information ..... 11-1

### Maintenance Schedule

Maintenance Schedule ..... 11-3

### Special Application Services

Special Application  
Services ..... 11-9

### Additional Maintenance and Care

Additional Maintenance  
and Care ..... 11-10

### Recommended Fluids, Lubricants, and Parts

Recommended Fluids and  
Lubricants ..... 11-14

Maintenance Replacement  
Parts ..... 11-16

### Maintenance Records

Maintenance Records ..... 11-17

## General Information

Your vehicle is an important investment. This section describes the required maintenance for the vehicle. Follow this schedule to help protect against major repair expenses resulting from neglect or inadequate maintenance. It may also help to maintain the value of the vehicle if it is sold. It is the responsibility of the owner to have all required maintenance performed.

Your dealer has trained technicians who can perform required maintenance using genuine replacement parts. They have up-to-date tools and equipment for fast and accurate diagnostics. Many dealers have extended evening and Saturday hours, courtesy transportation, and online scheduling to assist with service needs.

Your dealer recognizes the importance of providing competitively priced maintenance and repair services. With trained technicians, the dealer is the place for routine maintenance such as oil changes and tire rotations and additional maintenance items like tires, brakes, batteries, and wiper blades.

**Notice: Damage caused by improper maintenance can lead to costly repairs and may not be covered by the vehicle warranty. Maintenance intervals, checks, inspections, recommended fluids, and lubricants are important to keep the vehicle in good working condition.**

The Tire Rotation and Required Services are the responsibility of the vehicle owner. It is recommended to have your dealer perform these services every 12 000 km/7,500 mi. Proper vehicle maintenance helps to keep the vehicle in good working condition, improves fuel economy, and reduces vehicle emissions.

## 11-2 Service and Maintenance

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Because of the way people use vehicles, maintenance needs vary. There may need to be more frequent checks and services.

The Additional Required Services - Normal are for vehicles that:

- Carry passengers and cargo within recommended limits on the Tire and Loading Information label. See *Vehicle Load Limits on page 9-10*.
- Are driven on reasonable road surfaces within legal driving limits.
- Use the recommended fuel. See *Recommended Fuel on page 9-49*.

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 hilly or mountainous terrain.
- Frequently towing a trailer.
- Used for high speed or competitive driving.
- Used for taxi, police, or delivery service.

Refer to the information in the Maintenance Schedule Additional Required Services - Severe chart.

### WARNING

Performing maintenance work can be dangerous and can cause serious injury. Perform maintenance work only if the required information, proper tools, and equipment are available. If they are not, see your dealer to have a trained technician do the work. See *Doing Your Own Service Work on page 10-4*.

## Maintenance Schedule

### Owner Checks and Services

#### At Each Fuel Stop

- Check the engine oil level.  
See *Engine Oil* on page 10-9.

#### Once a Month

- Check the tire inflation pressures. See *Tire Pressure* on page 10-51.
- Inspect the tires for wear. See *Tire Inspection* on page 10-57.
- Check the windshield washer fluid level. See *Washer Fluid* on page 10-22.

### Engine Oil Change

When the CHANGE ENGINE OIL SOON message displays, have the engine oil and filter changed within the next 1 000 km/600 mi. If driven under the best conditions, the engine oil life system might not indicate the need for vehicle service for more than a year. The engine oil and filter must be changed at least once a year and the oil life system must be reset. Your trained dealer technician can perform this work.

If the engine oil life system is reset accidentally, service the vehicle within 5 000 km/3,000 mi since the last service. Reset the oil life system when the oil is changed. See *Engine Oil Life System* on page 10-12.

## 11-4 Service and Maintenance

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### **Tire Rotation and Required Services Every 12 000 km/ 7,500 mi**

Rotate the tires, if recommended for the vehicle, and perform the following services. See *Tire Rotation on page 10-58*.

- Check engine oil level and oil life percentage. If needed, change engine oil and filter, and reset oil life system. See *Engine Oil on page 10-9* and *Engine Oil Life System on page 10-12*.
- Check engine coolant level. See *Engine Coolant on page 10-16*.
- Check windshield washer fluid level. See *Washer Fluid on page 10-22*.
- Visually inspect windshield wiper blades for wear, cracking, or contamination. See *Exterior Care on page 10-98*. Replace worn or damaged wiper blades. See *Wiper Blade Replacement on page 10-27*.
- Check tire inflation pressures. See *Tire Pressure on page 10-51*.
- Inspect tire wear. See *Tire Inspection on page 10-57*.
- Visually check for fluid leaks.
- Inspect engine air cleaner filter. See *Engine Air Cleaner/Filter on page 10-13*.
- Inspect brake system.
- Visually inspect steering, suspension, and chassis components for damaged, loose, or missing parts or signs of wear. See *Exterior Care on page 10-98*.
- Check restraint system components. See *Safety System Check on page 3-19*.
- Visually inspect fuel system for damage or leaks.
- Visually inspect exhaust system and nearby heat shields for loose or damaged parts.
- Lubricate body components. See *Exterior Care on page 10-98*.

- Check starter switch. See *Starter Switch Check* on page 10-26.
- Check automatic transmission shift lock control function. See *Automatic Transmission Shift Lock Control Function Check* on page 10-26.
- Check ignition transmission lock. See *Ignition Transmission Lock Check* on page 10-27.
- Check parking brake and automatic transmission park mechanism. See *Park Brake and P (Park) Mechanism Check* on page 10-27.
- 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.
- Check tire sealant expiration date, if equipped. See *Tire Sealant and Compressor Kit (With Pressure Relief Button)* on page 10-67 or *Tire Sealant and Compressor Kit (With Pressure Deflation Button)* on page 10-74.
- Inspect sunroof track and seal, if equipped. See *Sunroof* on page 2-21.





**Footnotes — Maintenance  
Schedule Additional Required  
Services — Normal**

- a)** Or every two years, whichever comes first. More frequent replacement may be needed if the vehicle is driven in areas with heavy traffic, areas with poor air quality, or areas with high dust levels. Replacement may also be needed if there is a reduction in air flow, excessive window fogging, or odors.
- b)** Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition. Check that the purge valve, if the vehicle has one, works properly. Replace as needed.

- c)** Or every four years, whichever comes first.
- d)** 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.
- e)** Or every five years, whichever comes first. See *Cooling System on page 10-15*.
- f)** Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.



**Footnotes — Maintenance  
Schedule Additional Required  
Services — Severe**

- a) Or every two years, whichever comes first.
- b) Check all fuel and vapor lines and hoses for proper hook-up, routing, and condition. Check that the purge valve, if the vehicle has one, works properly. Replace as needed.
- c) Or every four years, whichever comes first.

d) 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.

e) Or every five years, whichever comes first. See *Cooling System on page 10-15*.

f) Or every 10 years, whichever comes first. Inspect for fraying, excessive cracking, or damage; replace, if needed.

**Special Application  
Services**

- Severe Commercial Use Vehicles Only: Lubricate chassis components every 5 000 km/ 3,000 mi.
- Have underbody flushing service performed once a year.

### **Additional Maintenance and Care**

Your vehicle is an important investment and caring for it properly may help to avoid future costly repairs. To maintain vehicle performance, additional maintenance services may be required. It is recommended that your dealer perform these services — their trained dealer technicians know your vehicle best.

Your dealer can also perform a thorough assessment with a multi-point inspection to recommend when your vehicle may need attention. The following list is intended to explain the services and conditions to look for that may indicate services are required.

### **Battery**

The battery supplies power to start the engine and operate any additional electrical accessories.

- To avoid break-down or failure to start the vehicle, maintain a battery with full cranking power.
- Trained dealer technicians have the diagnostic equipment to test the battery and ensure that the connections and cables are corrosion-free.

### Belts

- Belts may need replacing if they squeak or show signs of cracking or splitting.
- Trained dealer technicians can inspect the belts and recommend replacement when necessary.

### Brakes

Brakes stop the vehicle and are crucial to safe driving.

- Signs of brake wear may include chirping, grinding, or squealing noises, or difficulty stopping.
- Trained dealer technicians have access to tools and equipment to inspect the brakes and recommend quality parts engineered for the vehicle.

### Fluids

Proper fluid levels and approved fluids protect the vehicle's systems and components. See *Recommended Fluids and Lubricants* on page 11-14 for GM approved fluids.

- Engine oil and windshield washer fluid levels should be checked at every fuel fill.
- Instrument cluster lights may come on to indicate that fluids may be low and need to be filled.

### Hoses

Hoses transport fluids and should be regularly inspected to ensure that there are no cracks or leaks. With a multi-point inspection, your dealer can inspect the hoses and advise if replacement is needed.

### Lamps

Properly working headlamps, taillamps, and brake lamps are important to see and be seen on the road.

- Signs that the headlamps need attention include dimming, failure to light, cracking, or damage. The brake lamps need to be checked periodically to ensure that they light when braking.
- With a multi-point inspection, your dealer can check the lamps and note any concerns.

## 11-12 Service and Maintenance

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### Shocks and Struts

Shocks and struts help aid in control for a smoother ride.

- Signs of wear may include steering wheel vibration, bounce/sway while braking, longer stopping distance, or uneven tire wear.
- As part of the multi-point inspection, trained dealer technicians can visually inspect the shocks and struts for signs of leaking, blown seals, or damage, and can advise when service is needed.

### Tires

Tires need to be properly inflated, rotated, and balanced. Maintaining the tires can save money, fuel, and can reduce the risk of tire failure.

- Signs that the tires need to be replaced include three or more visible treadwear indicators; cord or fabric showing through the rubber; cracks or cuts in the tread or sidewall; or a bulge or split in the tire.
- Trained dealer technicians can inspect and recommend the right tires. Your dealer can also provide tire/wheel balancing services to ensure smooth vehicle operation at all speeds. Your dealer sells and services name brand tires.

### Vehicle Care

To help keep the vehicle looking like new, vehicle care products are available from your dealer. For information on how to clean and protect the vehicle's interior and exterior, see *Interior Care on page 10-101* and *Exterior Care on page 10-98*.

### Wheel Alignment

Wheel alignment is critical for ensuring that the tires deliver optimal wear and performance.

- Signs that the alignment may need to be adjusted include pulling, improper vehicle handling, or unusual tire wear.
- Your dealer has the required equipment to ensure proper wheel alignment.

**Windshield**

For safety, appearance, and the best viewing, keep the windshield clean and clear.

- Signs of damage include scratches, cracks, and chips.
- Trained dealer technicians can inspect the windshield and recommend proper replacement if needed.

**Wiper Blades**

Wiper blades need to be cleaned and kept in good condition to provide a clear view.

- Signs of wear include streaking, skipping across the windshield, and worn or split rubber.
- Trained dealer technicians can check the wiper blades and replace them when needed.

## Recommended Fluids, Lubricants, and Parts

### Recommended Fluids and Lubricants

Usage	Fluid/Lubricant
Engine Oil	Use only engine oil licensed to the dexos1 specification, or equivalent, of the proper SAE viscosity grade. ACDelco dexos1 Synthetic Blend is recommended. See <i>Engine Oil on page 10-9</i> .
Engine Coolant (3.6L V6 Engine)	50/50 mixture of clean, drinkable water and use only DEX-COOL Coolant. See <i>Engine Coolant on page 10-16</i> .
Engine Coolant (2.4L L4 Engine)	Always use the pre-mixed 50/50 mixture of deionized water and DEX-COOL Coolant available at your dealer.
Hydraulic Brake System	DOT 3 Hydraulic Brake Fluid (GM Part No. 88862806, in Canada 88862807).
Windshield Washer	Optikleen <sup>®</sup> Washer Solvent.
Hydraulic Power Steering System	DEXRON <sup>®</sup> -VI Automatic Transmission Fluid.
Automatic Transmission	DEXRON <sup>®</sup> -VI Automatic Transmission Fluid.



<b>Usage</b>	<b>Fluid/Lubricant</b>
Key Lock Cylinders	Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474).
Hood Latch Assembly, Secondary Latch, Pivots, Spring Anchor, and Release Pawl	Lubriplate Lubricant Aerosol (GM Part No. 12346293, in Canada 992723) or lubricant meeting requirements of NLGI #2, Category LB or GC-LB.
Hood and Door Hinges	Multi-Purpose Lubricant, Superlube (GM Part No. 12346241, in Canada 10953474).
Weatherstrip Conditioning	Weatherstrip Lubricant (GM Part No. 3634770, in Canada 10953518) or Dielectric Silicone Grease (GM Part No. 12345579, in Canada 992887).

## 11-16 Service and Maintenance

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### Maintenance Replacement Parts

Replacement parts identified below by name, part number, or specification can be obtained from your dealer.

Part	GM Part Number	ACDelco Part Number
Engine Air Cleaner/Filter	55560894	A3128C
Engine Oil Filter		
2.4L L4 Engine	12605566	PF457G
3.6L V6 Engine	89017525	PF63
Passenger Compartment Air Filter	13271191	CF176
Spark Plugs		
2.4L L4 Engine	12620540	41-108
3.6L V6 Engine	12622561	41-109
Wiper Blades		
Driver Side – 65 cm (25.6 in)	25892079	—
Passenger Side – 45 cm (17.7 in)	25882578	—









## Technical Data

### Vehicle Identification

Vehicle Identification	
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Service Parts Identification	
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### Vehicle Data

Capacities and	
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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* on page 12-2 for the vehicle's engine code.

### Service Parts Identification Label

This label, in the trunk, has the following information:

- Vehicle Identification Number (VIN).
- Model designation.
- Paint information.
- Production options and special equipment.

Do not remove this label from the vehicle.

## Vehicle Data

### Capacities and Specifications

Application	Capacities	
	Metric	English
Air Conditioning Refrigerant R134a	For the air conditioning system refrigerant charge amount, see the refrigerant label located under the hood. See your dealer for more information.	
Engine Cooling System		
2.4L L4 Engine	9.6 L	10.1 qt
3.6L V6 Engine	7.1 L	7.5 qt
Engine Oil with Filter		
2.4L L4 Engine	4.7 L	5.0 qt
3.6L V6 Engine	5.7 L	6.0 qt
Fuel Tank		
2.4L L4 Engine	60.0 L	15.8 gal
3.6L V6 Engine, AWD	74.0 L	19.5 gal
3.6L V6 Engine, FWD	70.5 L	18.6 gal

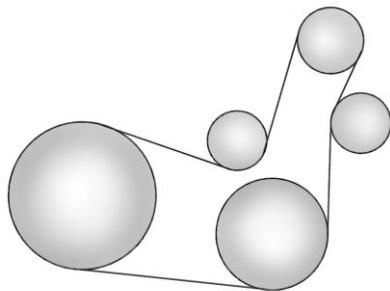


Application	Capacities	
	Metric	English
Transmission Fluid* (Drain and Refill)		
2.4L L4 Engine, 6-Speed Automatic	5.0 L	5.3 qt
3.6L V6 Engine, 6-Speed Automatic	5.0 L	5.3 qt
Wheel Nut Torque	150 N•m	110 lb ft
*See <i>Automatic Transmission Fluid</i> on page 10-13 for information on checking fluid level.		
All capacities are approximate. When adding, be sure to fill to the approximate level, as recommended in this manual. Recheck fluid level after filling.		

### Engine Specifications

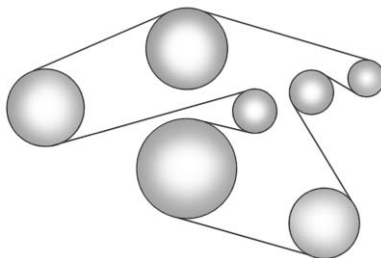
Engine	VIN Code	Transmission	Spark Plug Gap
2.4L L4 Engine	R	Automatic	0.9 mm (0.035 in)
3.6L V6 Engine	3	Automatic	1.10 mm (0.043 in)

### Engine Drive Belt Routing



**2.4L L4 Engine**

Belt removal and installation requires special tools. See your dealer for service.



**3.6L V6 Engine**

## Customer Information

### Customer Information

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## Customer Information

### Customer Satisfaction Procedure (U.S. and Canada)

Your satisfaction and goodwill are important to your dealer and to Buick. Normally, any concerns with the sales transaction or the operation of the vehicle will be resolved by your dealer's sales or service departments. Sometimes, however, despite the best intentions of all concerned, misunderstandings can occur. If your concern has not been resolved to your satisfaction, the following steps should be taken:

**STEP ONE:** Discuss your concern with a member of dealership management. Normally, concerns can be quickly resolved at that level. If the matter has already been reviewed with the sales, service, or parts manager, contact the owner of your dealership or the general manager.

## 13-2 Customer Information

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**STEP TWO:** If after contacting a member of dealership management, it appears your concern cannot be resolved by your dealership without further help, in the U.S., call 1-800-521-7300. In Canada, contact General Motors of Canada Customer Care Centre at 1-800-263-3777 (English) or 1-800-263-7854 (French).

We encourage you to call the toll-free number in order to give the inquiry prompt attention. Have the following information available to give the Customer Assistance representative:

- Vehicle Identification Number (VIN). This is available from the vehicle registration or title, or the plate at the top left of the instrument panel and visible through the windshield.
- Dealership name and location.
- Vehicle delivery date and present mileage.

When contacting Buick, remember that your concern will likely be resolved at a dealer's facility. That is why we suggest following Step One first.

### **STEP THREE — U.S. Owners:**

Both General Motors and your dealer are committed to making sure you are completely satisfied with the new vehicle. However, if you continue to remain unsatisfied after following the procedure outlined in Steps One and Two, you can file with the Better Business Bureau (BBB) Auto Line® Program to enforce your rights.

The BBB Auto Line Program is an out-of-court program administered by the Council of Better Business Bureaus to settle automotive disputes regarding vehicle repairs or the interpretation of the New Vehicle Limited Warranty. Although you may be required to resort to this informal dispute resolution program prior to filing a court action, use of the program is free of charge and your

case will generally be heard within 40 days. If you do not agree with the decision given in your case, you may reject it and proceed with any other venue for relief available to you.

You may contact the BBB Auto Line Program using the toll-free telephone number or write them at the following address:

BBB Auto Line Program  
Council of Better Business  
Bureaus, Inc.  
4200 Wilson Boulevard  
Suite 800  
Arlington, VA 22203-1838

Telephone: 1-800-955-5100  
[www.dr.bbb.org/goauto](http://www.dr.bbb.org/goauto)

This program is available in all 50 states and the District of Columbia. Eligibility is limited by vehicle age, mileage, and other factors. General Motors reserves the right to change eligibility limitations and/or discontinue its participation in this program.

**STEP THREE — Canadian**

**Owners:** In the event that you do not feel your concerns have been addressed after following the procedure outlined in Steps One and Two, General Motors of Canada Limited wants you to be aware of its participation in a no-charge Mediation/Arbitration program. General Motors of Canada Limited has committed to binding arbitration of owner disputes involving factory-related vehicle service claims. The program provides for the review of the facts involved by an impartial third party arbiter, and may include an informal hearing before the arbiter. The program is designed so that the entire dispute settlement process, from the time you file your complaint to the final decision, should be completed in approximately 70 days. We believe our impartial program offers advantages over courts in most jurisdictions because it is informal, quick, and free of charge.

For further information concerning eligibility in the Canadian Motor Vehicle Arbitration Plan (CAMVAP), call toll-free 1-800-207-0685, or call the General Motors Customer Care Centre, 1-800-263-3777 (English), 1-800-263-7854 (French), or write to:

Mediation/Arbitration Program  
c/o Customer Care Centre  
General Motors of Canada Limited  
Mail Code: CA1-163-005  
1908 Colonel Sam Drive  
Oshawa, Ontario L1H 8P7

The inquiry should be accompanied by the Vehicle Identification Number (VIN).

**Customer Satisfaction Procedure (Mexico)**

Did you get the Warranty Extension Plan? This plan is recommended by General Motors to supplement the warranty included with the new vehicle purchase.

See your dealer for details.

**Customer Assistance Procedure**

Owner satisfaction and goodwill are very important to your dealer and General Motors.

Normally, any problem with the transaction, sale, or usage of the vehicle must be handled by your dealer sales or service departments.

## 13-4 Customer Information

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However, we recognize that despite the good intentions of all parties involved, sometimes a misunderstanding may occur.

If you have a problem that has not been satisfactorily handled through the normal means, we suggest the following steps:

### STEP ONE

Explain your case to your dealer service agent, service manager, dealer sales agent, or sales manager, depending on your case.

Make sure that they have all necessary information. They are interested in your continual satisfaction.

### STEP TWO

If you are not satisfied, please contact the general manager or your dealership owner to ask for their help. If they are not able to resolve your case, ask them to contact the right people at General Motors for support, if needed.

### STEP THREE

If your case is not resolved in a reasonable amount of time by your dealer, please call the General Motors Customer Assistance Center (CAC) and provide the following information:

- Name
- Address
- Phone number
- Model year
- Brand
- Vehicle Identification Number (VIN)
- Mileage
- Delivery date
- Description of the problem
- Dealership name
- Dealership address

See *Customer Assistance Offices (U.S. and Canada)* on page 13-4 or *Customer Assistance Offices (Mexico)* on page 13-5 for more information.

## Customer Assistance Offices (U.S. and Canada)

Buick encourages customers to call the toll-free number for assistance. However, if a customer wishes to write or e-mail Buick, the letter should be addressed to:

### United States

Buick Customer Assistance Center  
P.O. Box 33136  
Detroit, MI 48232-5136  
[www.Buick.com](http://www.Buick.com)

1-800-521-7300  
1-800-832-8425 (For Text  
Telephone devices (TTYs))  
Roadside Assistance:  
1-800-252-1112

From Puerto Rico:

1-800-496-9992 (English)  
1-800-496-9993 (Spanish)

From U.S. Virgin Islands:

1-800-496-9994

### **Canada**

General Motors of Canada Limited  
Customer Care Centre, Mail Code:  
CA1-163-005  
1908 Colonel Sam Drive  
Oshawa, Ontario L1H 8P7  
www.gm.ca

1-800-263-3777 (English)  
1-800-263-7854 (French)  
1-800-263-3830 (For Text  
Telephone devices (TTYs))  
Roadside Assistance:  
1-800-268-6800

### **All Overseas Locations**

Please contact the local General  
Motors Business Unit.

### **Mexico, Central America and Caribbean Islands/Countries (Except Puerto Rico and U.S. Virgin Islands)**

General Motors de Mexico, S. de  
R.L. de C.V.  
Customer Assistance Center  
Av. Ejercito Nacional #843  
Col. Granada  
C.P. 11520, Mexico, D.F.

01-800-466-0818  
Long Distance: 011-52-53 29 0818

### **Customer Assistance Offices (Mexico)**

To contact the Customer Assistance  
Center (CAC), use the phone  
numbers listed in this section.  
Customer assistance is available  
Monday through Friday, 08:00 to  
20:00 hours, and Saturdays from  
08:00 to 15:00 hours.

All e-mail inquiries to the Customer  
Assistance Center (CAC) should be  
sent to: [cac.buick@gm.com](mailto:cac.buick@gm.com).

### **Mexico**

**From Mexico City**  
5329-0818

**From Other Mexico Locations**  
01-800-466-0818

**United States and Canada**  
1-800-521-7300

**Costa Rica**  
00-800-052-1005

**Guatemala**  
1-800-999-5252

**Panama**  
00-800-052-0001

**Dominican Republic**  
1-888-751-5301

**El Salvador**  
800-6273

**Honduras**  
800-0122-6101

### Customer Assistance for Text Telephone (TTY) Users (U.S. and Canada)

To assist customers who are deaf, hard of hearing, or speech-impaired and who use Text Telephones (TTYs), Buick has TTY equipment available at its Customer Assistance Center. Any TTY user can communicate with Buick by dialing: 1-800-832-8425. TTY users in Canada can dial 1-800-263-3830.

### Online Owner Center

#### Buick Owner Center (U.S.) [www.buickownercenter.com](http://www.buickownercenter.com)

Information and services customized for your specific vehicle — all in one convenient place.

- Digital owner manual, warranty information, and more.
- Storage for online service and maintenance records.

- Buick dealer locator for service nationwide.
- Exclusive privileges and offers.
- Recall notices for your specific vehicle.
- OnStar and GM Cardmember Services Earnings summaries.

#### Other Helpful Links:

Buick — [www.buick.com](http://www.buick.com)

Buick Merchandise —  
[www.buickmerchandise.com](http://www.buickmerchandise.com)

Help Center — <http://www.buick.com/help/faqs.html>

- FAQ (Frequently Asked Questions)
- Contact Us

#### My GM Canada [www.gm.ca](http://www.gm.ca)

My GM Canada is a password-protected section of [www.gm.ca](http://www.gm.ca) where you can save information on GM vehicles, get personalized offers, and use handy tools and forms with greater ease.

Here are a few of the valuable tools and services you will have access to:

- My Showroom: Find and save information on vehicles and current offers in your area.
- My Dealers: Save details such as address and phone number for each of your preferred GM dealers.
- My Driveway: Access quick links to parts and service estimates, check trade-in values, or schedule a service appointment by adding the vehicles you own to your driveway profile.
- My Preferences: Manage your profile and use tools and forms with greater ease.

To sign up, visit the My GM.ca section within [www.gm.ca](http://www.gm.ca).



## GM Mobility Reimbursement Program (U.S. and Canada)



This program is available to qualified applicants for cost reimbursement of eligible aftermarket adaptive equipment required for the vehicle, such as hand controls or a wheelchair/scooter lift for the vehicle.

For more information on the limited offer, visit [www.gmmobility.com](http://www.gmmobility.com) or call the GM Mobility Assistance Center at 1-800-323-9935. Text Telephone (TTY) users, call 1-800-833-9935.

General Motors of Canada also has a Mobility Program. Call 1-800-GM-DRIVE (463-7483) for details. TTY users call 1-800-263-3830.

## Roadside Assistance Program (U.S. and Canada)

For U.S.-purchased vehicles, call **1-800-252-1112; (Text Telephone (TTY): 1-888-889-2438)**.

For Canadian-purchased vehicles, call **1-800-268-6800**.

Service is available 24 hours a day, 365 days a year.

## Calling for Assistance

When calling Roadside Assistance, have the following information ready:

- Your name, home address, and home telephone number.
- Telephone number of your location.

- Location of the vehicle.
- Model, year, color, and license plate number of the vehicle.
- Odometer reading, Vehicle Identification Number (VIN), and delivery date of the vehicle.
- Description of the problem.

## Coverage

Services are provided up to 5 years/160 000 km (100,000 mi), whichever comes first.

In the U.S., anyone driving the vehicle is covered. In Canada, a person driving the vehicle without permission from the owner is not covered.

Roadside Assistance is not a part of the New Vehicle Limited Warranty. Buick and General Motors of Canada Limited reserve the right to make any changes or discontinue the Roadside Assistance program at any time without notification.

## 13-8 Customer Information

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Buick and General Motors of Canada Limited reserve the right to limit services or payment to an owner or driver if they decide the claims are made too often, or the same type of claim is made many times.

### Services Provided

- **Emergency Fuel Delivery:** Delivery of enough fuel for the vehicle to get to the nearest service station.
- **Lock-Out Service:** Service to unlock the vehicle if you are locked out. A remote unlock may be available if you have OnStar<sup>®</sup>. For security reasons, the driver must present identification before this service is given.
- **Emergency Tow from a Public Road or Highway:** Tow to the nearest Buick dealer for warranty service, or if the vehicle was in a crash and

cannot be driven. Assistance is also given when the vehicle is stuck in sand, mud, or snow.

- **Flat Tire Change:** Service to change a flat tire with the spare tire. The spare tire, if equipped, must be in good condition and properly inflated. It is the owner's responsibility for the repair or replacement of the tire if it is not covered by the warranty.
- **Battery Jump Start:** Service to jump start a dead battery.

### Services Not Included in Roadside Assistance

- Impound towing caused by violation of any laws.
- Legal fines.
- Mounting, dismounting, or changing of snow tires, chains, or other traction devices.
- Towing or services for vehicles driven on a non-public road or highway.

### Services Specific to Canadian-Purchased Vehicles

- **Fuel delivery:** Reimbursement is approximately \$5 Canadian. Diesel fuel delivery may be restricted. Propane and other fuels are not provided through this service.
- **Lock-Out Service:** Vehicle registration is required.
- **Trip Routing Service:** Detailed maps of North America are provided when requested either with the most direct route or the most scenic route. There is a six request limit per year. Additional travel information is also available. Allow three weeks for delivery.

- **Trip Interruption Benefits and Assistance:** Must be over 250 kilometers from where your trip was started to qualify. General Motors of Canada Limited requires pre-authorization, original detailed receipts, and a copy of the repair orders. Once authorization has been received, the Roadside Assistance advisor will help you make arrangements and explain how to receive payment.
- **Alternative Service:** If assistance cannot be provided right away, the Roadside Assistance advisor may give permission to get local emergency road service. You will receive payment, up to \$100, after sending the original receipt to Roadside Assistance. Mechanical failures may be covered, however any cost for parts and labor for repairs not covered by the warranty are the owner responsibility.

## Roadside Assistance Program (Mexico)

As a new owner, your vehicle is automatically enrolled in the Roadside Assistance program. The services are available at no cost under the terms and conditions of the program. The Roadside Assistance program is not part of, or included, in the coverage provided by the new vehicle limited warranty.

Roadside Assistance provides assistance to the driver and passengers while driving the vehicle within your city of residence or on any passable road in Mexico, the United States, and Canada. Services are subject to the limitations described in the following pages. Program coverage varies by country.

Roadside Assistance is available 24 hours a day, 365 days of the year.

This program expires two years from the date of the invoice for the vehicle, regardless of vehicle mileage and changes in vehicle ownership.

For more information about the renewal of this program at the end of its term, contact the Buick Customer Assistance Center at 01-800-466-0818.

### Services Provided

- **Flat Tire Change:** If unable to change a flat tire, Roadside Assistance will provide towing service to the nearest authorized Buick dealership. It is the owner's responsibility for the repair or replacement of the tire. This service is limited to the transfer of the vehicle to the repair facility.
- **Emergency Fuel Delivery:** Delivery of enough fuel for the vehicle to get to the nearest service station.

## 13-10 Customer Information

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- **Lock-Out Service:** Service to unlock the vehicle if you are locked out.
- **Battery Jump Start:** Service to jump start a dead battery.
- **\*Emergency Messages:** Transmission of urgent phone messages.
- **\*Emergency Calls:** Call for emergency services.
- **\*Dealership Location Assistance:** Information regarding addresses and telephone numbers for Buick dealers.
- **Emergency Towing:** Tow to the nearest dealer for warranty service if the vehicle cannot be driven.

If the vehicle is involved in an accident during the commission of a crime, administrative violation, or breach of traffic regulations, Roadside Assistance will not provide service.

When the vehicle is not accessible to be towed, all maneuvers required to access it will be at the owner's expense.

If the vehicle is in another city outside of your residence, Roadside Assistance is limited to moving the vehicle to the nearest dealer. If you would like the vehicle moved to a different dealer, you will be asked to cover the difference in cost at the time of the move.

If the vehicle cannot be received by the nearest Buick dealer due to scheduling conflicts, the vehicle will be taken to a safe place where it will remain for up to 48 hours until it can be taken to the dealer. If the storage costs exceed the amount authorized, the owner is responsible to pay the difference at the time of service. Contact Roadside Assistance for more information on authorized amounts.

- **\*Trip Interruption:** This service is provided if you are prevented from further usage of your vehicle while traveling and it is not possible for the nearest Buick dealership to repair the vehicle the same day, requiring the vehicle to stay at the dealership for a night or more. If this happens, in addition to the previously listed services and prior to confirmation by the dealership, you are entitled to choose one of the following alternatives, within the limits of existing Roadside Assistance program guidelines. If the costs exceed the amount authorized for these services, you must pay the difference at the time of service.

Roadside Assistance will coordinate hotel accommodations for all vehicle travelers for up to two nights.

A rental car will be provided for up to two days and the vehicle must be returned to its original destination, excluding vehicles with a carrying capacity greater than 3.5 tons.

**Complimentary Transportation:** If you prefer to continue your trip to the intended destination or return to your place of residence, and the trip requires more than eight hours driving on the road, transportation for the driver and passengers by first class bus or coach commercial airline will be provided to a location chosen by Roadside Assistance, depending on availability at the chosen destination. Restrictions apply based on vehicle specifications.

If you are on the road, taxi service to the nearest bus station or airport will be provided.

- **\*Complimentary Transportation for Vehicle Pick Up:** Transportation to pick up your vehicle after repairs are complete. Once the dealer has reported that the vehicle has been repaired, Roadside Assistance will provide bus or commercial airline one-way service (subject to availability) for the person designated by you to collect your vehicle at the dealership's location if you or the designated person are not in the same town or city as the dealership.

\*These services are not provided for U.S. or Canada residents. All services provided in the U.S. and Canada are at the owner's expense and will be reimbursed by Roadside Assistance.

### Services Not Included in Roadside Assistance

Roadside Assistance does not cover or reimburse services for the following:

- Events caused by fraud or bad faith by the driver.
- Vehicle immobilization situations due to a major force or unforeseen circumstances, such as natural phenomena of an extraordinary nature, earthquakes, volcanic eruptions, and other cyclonic storms.
- Vehicle immobilization situations arising from car accidents caused by the driver of the vehicle or third parties. This means any occurrence that causes physical injury to the occupants and/or the vehicle caused by external forces.
- Acts of terrorism, riot or uproar, armed forces or police actions which prevent timely delivery of assistance services.

## 13-12 Customer Information

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- Food service, beverages, telephone calls, or other extra costs. Accommodation costs apply only to Mexico per the terms and conditions of the Roadside Assistance program.
- Any damage to the vehicle without intent, derived from the services provided.
- Cost of towing a trailer when choosing a Buick dealer that is nearest to the temporary storage facility for the disabled vehicle.
- Cost of all maneuvers required to access the vehicle when it is not available to be towed.
- Cost of fuel provided.

Routine vehicle repair costs are not covered by the Roadside Assistance program. For more information, see your new vehicle warranty.

### Contacting Roadside Assistance

Roadside Assistance services are of no cost to you and available 24 hours a day, 365 days a year. Costs are only incurred in situations that exceed the limits of the program, some of which are listed previously in this section.

To contact Roadside Assistance by phone, use the following numbers:

#### Mexico

01-800-466-0818

#### United States

1-866-466-8197

#### Canada

1-800-268-6800

#### E-mail

[asistencia.buick@gm.com](mailto:asistencia.buick@gm.com)

*Buick reserves the right to make any changes or discontinue the Roadside Assistance program at any time without notification.*

### Scheduling Service Appointments (U.S. and Canada)

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 (U.S. and Canada)**

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 warranties specific to e-Assist in both the U.S. and Canada.

Several Courtesy Transportation options are available to assist in reducing inconvenience when warranty repairs are required.

Courtesy Transportation is not a part of the New Vehicle Limited Warranty. A separate booklet entitled "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 wait, GM helps to minimize inconvenience by providing several transportation options. Depending on the circumstances, your dealer can offer one of the following:

### **Shuttle Service**

Shuttle service is the preferred means of offering Courtesy Transportation. Dealers may provide shuttle service to get you to your destination with minimal interruption of your daily schedule. 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 the vehicle requires overnight warranty repairs, and public transportation is used instead of your dealer's shuttle service, the expense must be supported by

original receipts and can only be up to the maximum amount allowed by GM for shuttle service. In addition, for U.S. customers, should you arrange transportation through a friend or relative, 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 regarding the allowance amounts for reimbursement of fuel or other transportation costs.

### **Courtesy Rental Vehicle**

Your dealer may arrange to provide you with a courtesy rental vehicle or reimburse you for a rental vehicle that you obtain if the vehicle is kept for an overnight warranty repair. Rental reimbursement will be limited and must be supported by original receipts. This requires that you sign and complete a rental agreement and meet state/provincial, local, and rental vehicle provider requirements.

## 13-14 Customer Information

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Requirements vary and may include minimum age requirements, insurance coverage, credit card, etc. You are responsible for fuel usage charges and may also be responsible for taxes, levies, usage fees, excessive mileage, or rental usage beyond the completion of the repair.

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. Please contact your dealer for specific information about availability. All Courtesy Transportation arrangements will be administered by appropriate dealer personnel.

*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 (U.S. and Canada)**

If the vehicle is involved in a collision and it is damaged, have the damage repaired by a qualified technician using the proper equipment and quality replacement parts. Poorly performed collision repairs diminish the vehicle resale value, and safety performance can be compromised in subsequent collisions.

### **Collision Parts**

Genuine GM Collision parts are new parts made with the same materials and construction methods as the parts with which the vehicle was originally built. Genuine GM Collision parts are the best choice to ensure that the vehicle's designed appearance, durability, and safety

are preserved. The use of Genuine GM parts can help maintain the GM New Vehicle Limited Warranty.

Recycled original equipment parts may also be used for repair. These parts are typically removed from vehicles that were total losses in prior crashes. In most cases, the parts being recycled are from undamaged sections of the vehicle. A recycled original equipment GM part may be an acceptable choice to maintain the vehicle's originally designed appearance and safety performance; however, the history of these parts is not known. Such parts are not covered by the GM New Vehicle Limited Warranty, and any related failures are not covered by that warranty.

Aftermarket collision parts are also available. These are made by companies other than GM and may not have been tested for the vehicle.



As a result, these parts may fit poorly, exhibit premature durability/corrosion problems, and may not perform properly in subsequent collisions. Aftermarket parts are not covered by the GM New Vehicle Limited Warranty, and any vehicle failure related to such parts is not covered by that warranty.

### Repair Facility

GM also recommends that you choose a collision repair facility that meets your needs before you ever need collision repairs. Your dealer may have a collision repair center with GM-trained technicians and state-of-the-art equipment, or be able to recommend a collision repair center that has GM-trained technicians and comparable equipment.

### Insuring the Vehicle

Protect your investment in the GM vehicle with comprehensive and collision insurance coverage. There are significant differences in the quality of coverage afforded by various insurance policy terms. Many insurance policies provide reduced protection to the GM vehicle by limiting compensation for damage repairs by using 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 (U.S. and Canada)* on page 13-7 or *Roadside Assistance Program (Mexico)* on page 13-9.

## 13-16 Customer Information

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Gather the following information:

- Driver name, address, and telephone number.
- Driver license number.
- Owner name, address, and telephone number.
- Vehicle license plate number.
- Vehicle make, model, and model year.
- Vehicle Identification Number (VIN).
- Insurance company and policy number.
- General description of the damage to the other vehicle.

Choose a reputable repair facility that uses quality replacement parts. See “Collision Parts” earlier in this section.

If the airbag has inflated, see *What Will You See after an Airbag Inflates?* on page 3-26.

### **Managing the Vehicle Damage Repair Process**

In the event that the vehicle requires damage repairs, GM recommends that you take an active role in its repair. If you have a pre-determined repair facility of choice, take the vehicle there, or have it towed there. Specify to the facility that any required replacement collision parts be original equipment parts, either new Genuine GM parts or recycled original GM parts. Remember, recycled parts will not be covered by the GM vehicle warranty.

Insurance pays the bill for the repair, but you must live with the repair. Depending on your policy limits, your insurance company may initially value the repair using aftermarket parts. Discuss this with the repair professional, and insist on Genuine GM parts. Remember, if the vehicle is leased, you may be obligated to have the vehicle repaired with Genuine GM parts, even if your insurance coverage does not pay the full cost.

If another party's insurance company is paying for the repairs, you are not obligated to accept a repair valuation based on that insurance company's collision policy repair limits, as you have no contractual limits with that company. In such cases, you can have control of the repair and parts choices as long as the cost stays within reasonable limits.

### **Service Publications Ordering Information**

#### **Service Manuals**

Service Manuals have the diagnosis and repair information on the engines, transmission, axle, suspension, brakes, electrical, steering, body, etc.

#### **Service Bulletins**

Service Bulletins give additional technical service information needed to 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.

In-Portfolio: Includes a Portfolio, Owner Manual, and Warranty Booklet.

**RETAIL SELL PRICE:**  
\$35.00 (U.S.) plus handling and shipping fees.

Without Portfolio:  
Owner Manual only.

**RETAIL SELL PRICE:**  
\$25.00 (U.S.) plus handling and shipping fees.

### **Current and Past Models**

Technical Service Bulletins and Manuals are available for current and past model GM vehicles.

**ORDER TOLL FREE:**  
**1-800-551-4123 Monday - Friday**  
**8:00 AM - 6:00 PM Eastern Time**

For Credit Card Orders Only (VISA-MasterCard-Discover), visit Helm, Inc. at:  
[www.helminc.com](http://www.helminc.com).

Or write to:

Helm, Incorporated  
P.O. Box 07130  
Detroit, MI 48207

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.

### **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.

## 13-18 Customer Information

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To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to:

Administrator, NHTSA  
1200 New Jersey Avenue, S.E.  
Washington, D.C. 20590

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

### Reporting Safety Defects to the Canadian Government

If you live in Canada, and you believe that the vehicle has a safety defect, notify Transport Canada immediately, and notify General Motors of Canada Limited.

Call Transport Canada at 1-800-333-0510 or write to:

Transport Canada  
Road Safety Branch  
80 rue Noel  
Gatineau, QC J8Z 0A1

### Reporting Safety Defects to General Motors

In addition to notifying NHTSA (or Transport Canada) in a situation like this, please notify General Motors.

Call 1-800-521-7300, or write:

Buick Customer Assistance Center  
P.O. Box 33136  
Detroit, MI 48232-5136

In Canada, call 1-800-263-3777 (English) or 1-800-263-7854 (French), or write:

General Motors of Canada Limited  
Customer Care Centre, Mail Code:  
CA1-163-005  
1908 Colonel Sam Drive  
Oshawa, Ontario L1H 8P7

### Vehicle Data Recording and Privacy

This GM vehicle has a number of sophisticated 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 airbags in a crash, and, if so equipped, to provide antilock braking to help the driver control the vehicle. These modules may store data to help your dealer technician service the vehicle. Some modules may also store data about how you operate the vehicle, such as rate of fuel consumption or average speed. These modules may also retain the owner's personal preferences, such as radio pre-sets, seat positions, and temperature settings.

## Event Data Recorders

This vehicle has an Event Data Recorder (EDR). The main purpose of an EDR is to record, in certain crash or near crash-like situations, such as an airbag deployment or hitting a road obstacle, data 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 the vehicle were operating.
- Whether or not the driver and passenger safety belts were buckled/fastened.
- How far, if at all, the driver was pressing the accelerator and/or brake pedal.
- How fast the vehicle was traveling.


This data can help provide a better understanding of the circumstances in which crashes and injuries occur.

**Important:** EDR data is recorded by the vehicle only if a non-trivial crash situation occurs; no data is recorded by the EDR under normal driving conditions and no personal data (e.g., name, gender, age, and crash location) is recorded. However, other parties, such as law enforcement, could combine the EDR data with the type of personally identifying data routinely acquired during a crash investigation.

To read data recorded by an EDR, special equipment is required, and access to the vehicle or the EDR is needed. In addition to the vehicle manufacturer, other parties, such as law enforcement, that have the special equipment, can read the information if they have access to the vehicle or the EDR.

GM will not access this data or share it with others except: with the consent of the vehicle owner or, if the vehicle is leased, with the consent of the lessee; in response to an official request by police or similar government office; as part of GM's defense of litigation through the discovery process; or, as required by law. Data that GM collects or receives may also be used for GM research needs or may be made available to others for research purposes, where a need is shown and the data is not tied to a specific vehicle or vehicle owner.

### OnStar®

If the vehicle is equipped with an active OnStar system, that system may also record data in crash or near crash-like situations. The OnStar Terms and Conditions provides information on data collection and use and is available at [www.onstar.com](http://www.onstar.com) (U.S.) or [www.onstar.ca](http://www.onstar.ca) (Canada), or by pressing the  button and speaking to an advisor. See *OnStar Overview on page 14-1* for more information.

### Navigation System

If the vehicle has a navigation system, use of the system may result in the storage of destinations, addresses, telephone numbers, and other trip information. Refer to the navigation manual for information on stored data and for deletion instructions.

### Radio Frequency Identification (RFID)

RFID technology is used in some vehicles for functions such as tire pressure monitoring and ignition system security, as well as in connection with conveniences such as key fobs for remote door locking/unlocking and starting, and in-vehicle transmitters for garage door openers. RFID technology in GM vehicles does not use or record personal information or link with any other GM system containing personal information.

### Radio Frequency Statement

This vehicle has systems that operate on a radio frequency that comply with Part 15 of the Federal Communications Commission (FCC) rules and with Industry Canada Standards RSS-GEN/210/220/310.

Operation is subject to the following two conditions:

1. The device may not cause harmful interference.
2. The device must accept any interference received, including interference that may cause undesired operation of the device.

Changes or modifications to any of these systems by other than an authorized service facility could void authorization to use this equipment.

# OnStar

## OnStar Overview

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## OnStar Overview




If equipped, this vehicle has a comprehensive, in-vehicle system that can connect to a live Advisor for Emergency, Security, Navigation, Connection, and Diagnostic Services.

### Overview


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.


Push  or call 1-888-4-ONSTAR (1-888-466-7827) to speak to an Advisor.

Push  to:

- Make a call, end a call, or answer an incoming call.
- Give OnStar Hands-Free Calling voice commands.
- Give OnStar Turn-by-Turn Navigation voice commands. Requires the available Directions and Connections service plan.

Push  to connect to a live Advisor to:

- Verify account information or update contact information.
- Get driving directions. Requires the available Directions and Connections service plan.
- Receive On-Demand Diagnostics for a check on the vehicle's key operating systems.
- Receive Roadside Assistance.


Push  to get a priority connection to an Emergency Advisor available 24/7 to:

- Get help for an emergency.
- Be a Good Samaritan or respond to an AMBER Alert.
- Get crisis assistance and evacuation routes.

## OnStar Services

### Emergency

With Automatic Crash Response, the built-in system can automatically connect to help in a crash even if you cannot ask for it.


Push  to connect to an Emergency Advisor. GPS technology is used to identify the vehicle location and can provide critical information to emergency personnel. The Advisor is also trained to offer critical assistance in emergency situations.

### Security


OnStar provides services like Stolen Vehicle Assistance, Remote Ignition Block, and Roadside Assistance, if the vehicle is equipped with these services. OnStar can unlock the vehicle doors remotely, if it is equipped with automatic door locks, and can help police locate the vehicle if it is stolen.

## Navigation

OnStar navigation requires the Directions and Connections service plan.

Push  to receive directions or have them sent to the vehicle navigation screen. Destinations can also be forwarded to the vehicle from Google Maps™ or MapQuest.com. The OnStar mapping database is continuously updated. Visit [www.onstar.com](http://www.onstar.com) for coverage maps.


### Turn-by-Turn Navigation

1. Push  to connect to a live Advisor.
2. Request directions.
3. Directions are downloaded to the vehicle.
4. Follow the voice-guided commands.




## Using Voice Commands During a Planned Route


### Cancel Route

1. Push . System responds: "OnStar ready," then a tone. Say "Cancel route." System responds: "Would you like to cancel route directions to your destination?"
2. Say "Yes." System responds: "OK, route canceled."
3. Say "Goodbye." Exits voice commands.


### Route Preview

1. Push . System responds: "OnStar ready," then a tone.
2. Say "Route Preview." System responds with the next three maneuvers.
3. Say "Goodbye." Exits voice commands.

### Repeat


1. Push . System responds: "OnStar ready," then a tone.
2. Say "Repeat." System responds with the last direction given, then responds with "OnStar ready," then a tone.
3. Say "Goodbye." Exits voice commands.

### Get My Destination

1. Push . System responds: "OnStar ready," then a tone.
2. Say "Get my destination." System responds with miles to the destination, then responds with "OnStar ready," then a tone.
3. Say "Goodbye." Exits voice commands.

## Other Navigation Services Available from OnStar

**OnStar eNav:** Allows subscribers to send destinations from Google Maps™ and MapQuest.com to their Turn-by-Turn Navigation or screen-based navigation system. When ready, the directions will be downloaded to the vehicle.


**Destination Download:** Push , then request the Advisor to download directions to the navigation system in the vehicle. After the call ends, push the "Go" button on the navigation screen to begin driving directions.

Destinations can also be downloaded on the go. For information about eNav, Destination Download, and coverage maps visit [www.onstar.com](http://www.onstar.com).


### Connections

OnStar Hands-Free Calling allows calls to be made and received from the vehicle. The vehicle can also be controlled from a cell phone through the OnStar mobile app. See [www.onstar.com](http://www.onstar.com) for coverage maps.


### Hands-Free Calling

1. Push . System responds: "OnStar ready."
2. Say "Dial." System responds: "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

1. Push . System responds: "OnStar ready."
2. Say "My Number." System responds: "Your OnStar Hands-Free Calling number is number."


### End a Call

Push . System responds: "Call ended."


### Store a Name Tag for Speed Dialing

1. Push . System responds: "OnStar ready."
2. Say "Store." System responds: "Please say the number you would like to store."
3. Say the entire number without pausing. System responds: "Please say the name tag."
4. Pick a name tag. "System responds: "About to store <name tag>. Does that sound OK?"
5. Say "Yes" or "No" to try again. System responds: "OK, storing <name tag>."

### Place a Call Using a Stored Number

1. Push . System responds: "OnStar ready."
2. Say "Call <name tag>." System responds: "OK, calling <name tag>."


### Verify Minutes and Expiration

Push  and say "minutes" then "verify" to check how many minutes remain and their expiration date.

### OnStar Mobile App


With an iPhone® or Android™-based mobile device, an OnStar mobile app can be downloaded. The vehicle can be remote started, if equipped, or the doors can be unlocked from anywhere there is cell phone service. It can also check the fuel level, tire pressure, and oil life. It can connect to an OnStar Advisor anytime. For OnStar mobile app compatibility or further information, see [www.onstar.com](http://www.onstar.com).

## Diagnostics


OnStar Vehicle Diagnostics will perform a vehicle check every month. It will check the engine, transmission, antilock brakes, and major vehicle systems. It also checks the tire pressures, if the vehicle is equipped with the Tire Pressure Monitoring System. If a diagnostics check is needed between e-mails, push , and an Advisor can run a check.

## OnStar Additional Information

### Transferring Service

Push  to request account transfer eligibility information. The Advisor can assist in canceling or removing account information. **If OnStar receives information that vehicle ownership has changed, OnStar may send a voice message to the vehicle, requesting updated account information.**

### Reactivation for Subsequent Owners

Push  and follow the prompts to speak to an Advisor as soon as possible after acquiring the vehicle. The Advisor will update vehicle records and will explain the OnStar service offers and options available.

## How OnStar Service Works

Automatic Crash Response, Emergency Services, Crisis Assist, Stolen Vehicle Assistance, Vehicle Diagnostics, Remote Door Unlock, Roadside Assistance, Turn-by-Turn Navigation, and Hands-Free Calling are available on most vehicles. Not all OnStar services are available everywhere or on all vehicles. For more information, a full description of OnStar services, system limitations, and OnStar terms and conditions, see [www.onstar.com](http://www.onstar.com) (U.S.) or [www.onstar.ca](http://www.onstar.ca) (Canada); contact OnStar at 1-888-4-ONSTAR (1-888-466-7827) or TTY 1-877-248-2080; or push  to speak with an Advisor. 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.

OnStar service cannot work unless your vehicle is in a place where OnStar has an agreement with a wireless service provider for service in that area, and the wireless service provider has coverage, network capacity, reception, and technology compatible with OnStar's service. Service involving location information about the vehicle cannot work unless GPS signals are available, unobstructed, and compatible with the OnStar hardware. OnStar service 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 service may not work. Other problems beyond OnStar's control may prevent service such as hills, tall buildings, tunnels, weather, electrical system design and architecture of the vehicle, damage to the vehicle in a crash, or wireless phone network congestion or jamming.

See *Radio Frequency Statement on page 13-20* for information regarding Part 15 of the Federal Communications Commission (FCC) rules and Industry Canada Standards RSS-GEN/210/220/310.

### **Services for People with Disabilities**

Advisors provide services to help subscribers with physical disabilities and medical conditions.

Push  for help with:

- Locating a gas station with an attendant to pump gas.
- Finding a hotel, restaurant, etc., that meets accessibility needs.
- Providing directions to the closest hospital or pharmacy in urgent situations.

### **TTY Users**

OnStar has the ability to communicate to the deaf, hard-of-hearing, or speech-impaired customers while in the vehicle. The available dealer-installed TTY system can provide in-vehicle access to all of the OnStar services, except Virtual Advisor and OnStar Turn-by-Turn Navigation.

### **Onstar.com**

The website provides access to account information, manages the OnStar subscription, and allows viewing of videos of each service. Get subscription plan pricing and sign up for OnStar Vehicle Diagnostics. Click on the "My Account" tab on the home page.

## OnStar Personal Identification Number (PIN)


A PIN is needed to access some of the OnStar services, like Remote Door Unlock and Stolen Vehicle Assistance. You will be prompted to change the PIN the first time when speaking with an Advisor. To change the OnStar PIN, call OnStar and provide the Advisor with the current number.

## Warranty

OnStar equipment may be warranted as part of the new-vehicle limited warranty. The manufacturer of the vehicle furnishes detailed warranty information.

## Languages

The vehicle can be programmed to respond in French or Spanish.

Push  and ask an Advisor. Advisors can speak French or Spanish.

## Potential Issues

Some OnStar services are disabled after five days. OnStar cannot perform Remote Door Unlock or Stolen Vehicle Assistance after the vehicle has been off continuously for five days. After five days, OnStar can contact Roadside Assistance and a locksmith to help gain access to the vehicle.

## Global Positioning System (GPS)


- Obstruction of the GPS can occur in a large city with tall buildings; in parking garages; around airports; in tunnels, underpasses, or parking garages; 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

Avoid placing items over or near the antenna to prevent blocking cellular and GPS signal reception. Cellular reception is required for OnStar to send remote signals to the vehicle.

## Unable to Connect to OnStar Message

If there is limited cellular coverage or the cellular network has reached maximum capacity, this message may come on. Push  to try the call again or try again after driving a few miles into another cellular area.

### Vehicle and Power Issues

OnStar services require a vehicle electrical system, wireless service, and GPS satellite technologies to be available and operating for features to function properly. These systems may not operate if the battery is discharged or disconnected.

### Add-on Electrical Equipment

The OnStar system is integrated into the electrical architecture of the vehicle. Do not add any electrical equipment. See *Add-On Electrical Equipment on page 9-60*. Added electrical equipment may interfere with the operation of the OnStar system and cause it to not operate.

### Privacy

The complete OnStar Privacy Statement may be found at [www.onstar.com](http://www.onstar.com). Privacy-sensitive users of wireless communications are cautioned that the privacy of any information sent via wireless cellular communications cannot be assured. Third parties may unlawfully intercept or access transmissions and private communications without consent.

**A**

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